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ACTING TO TRANSFORM



ADAPTATION | CLIMATE RISK | FINANCING
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Editorial

The climate emergency is a major geostrategic issue that directly impacts both the viability and *modus operandi* of economic activities. Rising temperatures, increasingly frequent extreme weather events, and the growing scarcity of natural resources are now affecting all countries. In this race against time, the private sector must play its part alongside the public sector, and become a driver of innovation, a lever for resilience, and an essential pillar of sustainable development.

The financing required to combat climate change and adapt to its effects is colossal, amounting to trillions of dollars and it is precisely in the private sphere that the reservoir of resources and investment capacity lies.

Financial institutions play a crucial role in this regard. They are capable of covering a large part of the needs of the climate transition. Financial institutions are also increasingly aware of their responsibility in this area and they stand ready to design and deploy initiatives that reconcile economic performance with environmental impact. Accurately assessing greenhouse gas emissions, defining credible sectoral decarbonization trajectories, and developing new climate finance products have therefore become essential tools for aligning investment portfolios with climate objectives.

Adapting to climate change also requires new reflexes: we must now systematically analyse the physical risks to which assets, businesses, and territories are exposed and finance concrete solutions that strengthen the resilience of local economies and populations. To do this, it is essential to anticipate risks and map them during the project study and portfolio construction phases, before integrating them into investment strategies. This process is no longer an option: it is a necessity. Water management, sustainable agriculture, and resilient infrastructure are all sectors that will play a key role in this new economic dynamic.

At Proparco, we are convinced that private sector engagement in climate finance is essential to meeting these challenges and that is why we are working alongside our partners to offer tailored financing solutions and technical assistance. Aside from this support, we bring financial institutions together around collective initiatives and concerted strategies, convinced that only through greater coordination can climate finance truly gain momentum. At Proparco Days organized in Paris in October 2025, over a hundred bank and investment fund managers from around the world – representing some €800 billion in combined balance sheet size and assets under management – worked with determination to achieve this goal. This desire for consultation and synergy is reflected in the format of this special issue of *Private Sector & Development*, which focuses specially on giving a voice to Proparco's clients and partners.

Ten years after the Paris Agreement on climate, major international conferences continue to plot the course and define commitments. On the ground, it is private actors who hold a (large) part of the solution: they have the power to be decisive players in the climate transition. The challenge is immense, but so is the potential. Now is the time to act, in an ambitious and responsible manner.

Private actors hold a part of the solution: they have the power to be decisive players in the climate transition.



Françoise Lombard
Chief Executive Officer
of Proparco

PS & D

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**JAMES MWANGI**

Dr. James Mwangi is Group MD and CEO of Equity Group Holdings Plc, one of Africa's largest financial institutions, with over 23 million customers across six countries, with representative offices in Ethiopia and approval for a UAE office. A champion of financial inclusion and sustainable development, he leads the Group's 'Africa Recovery and Resilience Plan', driving climate finance, green industrialization, and social impact through the Equity Group Foundation. Dr. Mwangi is a recipient of the G8 Global Vision Award and the Oslo Business for Peace Award; he serves on global bodies promoting sustainable finance and inclusive growth across Africa and beyond.

🗨️ Interview with

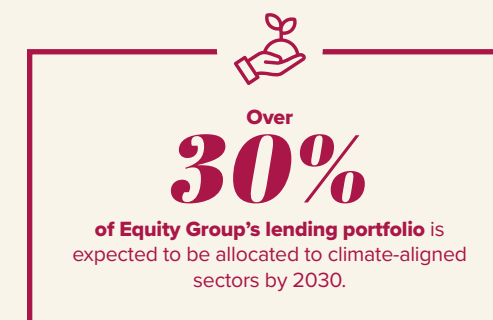
Dr. James Mwangi, Group MD and CEO of Equity Group Holdings Plc

Climate finance in Africa: profitable and deeply transformational

Equity Group is addressing the climate challenge in Africa by combining green loans, capacity building, and targeted partnerships. The Group is dedicating an increasing share of its portfolio to financing sustainable projects, and its climate strategy is now deeply embedded across all its activities. Partnerships established with development finance institutions enable it to offer de-risked financing and to train its teams and clients in assessing climate-related risks and opportunities.

What are the main challenges in financing climate projects in Africa?

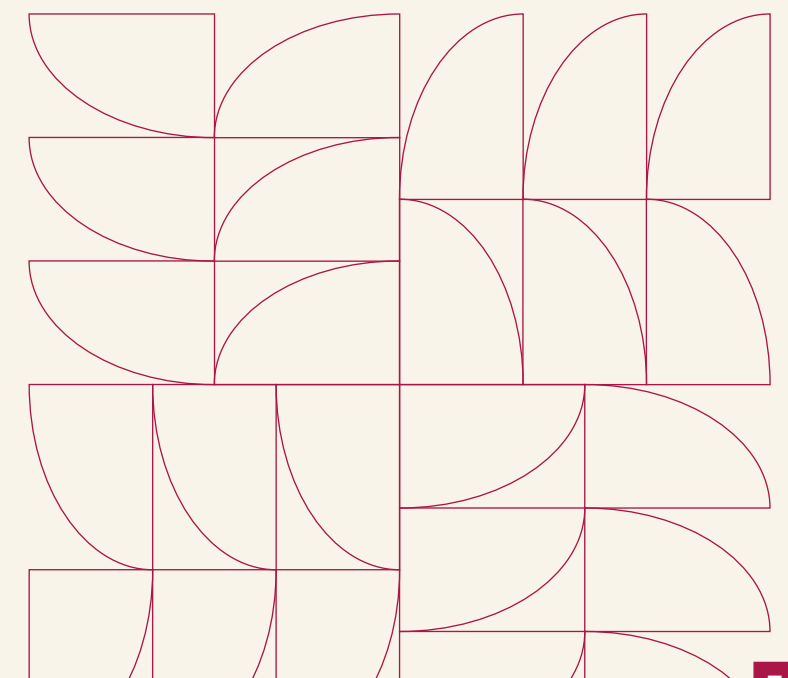
The biggest challenge remains access to affordable, long-term capital at scale. Africa contributes less than 4% of global emissions but bears the highest cost of climate change. Yet climate finance flows to the continent remain below 5% of global volumes. Risk perception is another barrier – African projects are often deemed too small, risky, or fragmented for global investors. Finally, the lack of harmonized data, project pipelines, and blended finance structures makes it difficult to mobilize private capital. The solution lies in creating de-risked investment vehicles that align public, private, and philanthropic capital, while building strong local financial institutions capable of structuring and deploying funds at scale. At Equity Group, we are working to close this gap by combining green lending, capacity building, and partnerships that crowd in concessional capital to unlock Africa's transition and resilience potential.



Africa contributes less than 4% of global emissions but bears the highest cost of climate change.

How does Equity Bank integrate climate finance into its strategy?

Climate finance is now at the heart of Equity Group's Africa Recovery and Resilience Plan, which aims to finance Africa's green industrialization and inclusive growth. We view sustainability not as an add-on, but as a strategic imperative integrated into every aspect of our business. Our climate strategy focuses on three areas: greening our internal operations, greening our loan book, and enabling clients to transition to sustainable practices. Through our subsidiary, Equity Group Foundation, we complement this by empowering communities through climate-smart agriculture, renewable energy access, and ecosystem restoration. Our goal is to allocate over 30% of our lending portfolio to climate-aligned sectors by 2030, supporting smallholders, MSMEs, and industries in adopting cleaner technologies and practices. This holistic approach links economic growth to environmental stewardship and social inclusion.



We view sustainability not as an add-on, but as a strategic imperative integrated into every aspect of our business.

What concrete methods does Equity Bank deploy to identify, assess, and mitigate climate risks in its portfolio and operations?

Equity Bank integrates environmental and social risk management (ESRM) into its credit processes, guided by international standards such as the IFC Performance Standards and the Equator Principles¹. Every loan is screened for potential environmental and climate risks, categorized by exposure level, and mitigated through tailored covenants and client support. We are also developing a Climate Risk Framework

FOCUS EQUITY GROUP HOLDINGS

Equity Group Holdings Plc is a purpose-driven Pan-African financial services group operating in Kenya, Uganda, Tanzania, Rwanda, South Sudan, and the Democratic Republic of Congo. With more than 23 million customers and assets of over USD 14 billion, the Group is a leader in inclusive finance and sustainable development. Through its tri-engine business model (business, social impact and sustainability) – via the Equity Group Foundation, Equity Insurance, Finserve, Equity Afya and other divisions – it promotes shared prosperity, climate resilience, and social transformation. Equity's Africa Recovery and Resilience Plan positions it as a catalyst for green industrialization and the mobilization of private capital for Africa's sustainable future.

aligned with the Task Force on Climate-related Financial Disclosures (TCFD) to assess physical and transition risks. Our internal sustainability team works with business units to ensure resilience across sectors – particularly agriculture, energy, and infrastructure. In parallel, we have launched capacity-building programs to train staff and clients on climate risk and opportunity management. By embedding these mechanisms into our governance, we are building a resilient balance sheet capable of withstanding climate shocks, while identifying green growth opportunities.

How does Equity Bank integrate climate risk assessment and management into its credit processes?

Climate risk management is embedded at every stage of our credit process – from due diligence to monitoring. Each project is screened for physical and transition risks using an Environmental and Social Risk Assessment (ESRA) tool. High-risk sectors undergo deeper technical evaluation, and mitigation measures are built into loan covenants. We are also piloting climate stress testing for our portfolio to identify the sectors most vulnerable to droughts, floods, and policy shifts. These insights inform our credit policies and product design, ensuring long-term portfolio resilience. Moreover, we provide clients with advisory support to strengthen their own climate risk management. This integrated approach ensures that sustainability is not just a compliance issue, but a competitive advantage and a key driver of financial stability.

How do you assist SMEs in their transition to sustainability?

SMEs are the backbone of Africa's economy and the key to a just transition. Equity Bank supports them through an integrated ecosystem approach – combining finance, capacity building, and market access. We offer tailored green credit lines for renewable energy, water management, and sustainable agriculture, alongside technical assistance to help SMEs meet environmental standards and access new markets. Through the Equity Group Foundation, we train entrepreneurs

on climate-smart business models and resource efficiency. Our partnerships with institutions such as Proparco and the African Guarantee Fund also help de-risk SME lending. We are now developing digital tools and climate scorecards to help SMEs benchmark and improve their sustainability performance. This combination of finance and knowledge ensures that Africa's millions of small businesses are not left behind but are empowered to lead the green transition.

What role does partnerships with development finance institutions (DFIs), like Proparco, play in your approach?

Partnerships with DFIs are catalytic in bridging Africa's climate finance gap. Institutions like Proparco bring not only capital but also credibility, expertise, and risk-sharing instruments that enable us to scale our impact. Our partnership with Proparco, through lines of credit and technical cooperation, has strengthened our ability to finance green and inclusive sectors – from renewable energy to women-led enterprises. DFIs play a critical role in de-risking early investments, crowding in private capital, and aligning financial flows with the Sustainable Development Goals. By combining DFI support with our local reach – over 18 million customers across East and Central Africa – we are creating a powerful multiplier effect. Together, we are proving that climate finance in Africa can be both bankable and transformational.

What major progress have you seen from your climate initiatives?

Our progress is visible in both numbers and impact. Over the past three years, we have financed more than USD 500 million in renewable energy, climate-smart agriculture, and green MSME projects. We have supported over 1.4 million farmers in adopting regenerative agricultural practices and have expanded clean energy access through solar and biogas solutions. Our branches now operate largely on renewable power, and we are on track to achieve carbon neutrality in our operations by 2030. At the community level, the Equity Group Foundation's tree-planting program, has already planted over 26 million trees across Kenya, the DRC, and Rwanda. These efforts

are translating climate ambition into tangible results that build both ecological resilience and shared prosperity.

How do you measure the social and environmental impact of your work?

We apply a triple-bottom-line approach – People, Planet, and Prosperity – to measure our impact. Our internal Environmental and Social Risk Management system tracks portfolio-level sustainability performance, while independent evaluations assess our community programs under the Equity Group Foundation. Metrics include greenhouse gas reductions, number of green jobs created, renewable energy capacity supported, and lives improved through clean water, education, and health access. We also align our reporting with global frameworks such as the SDGs, GRI, and TCFD. Beyond metrics, we believe impact must be lived – seen in stronger livelihoods, restored ecosystems, and thriving local enterprises. Our vision is to ensure that every dollar invested creates shared value for both people and the planet.

Partnerships with DFIs are catalytic in bridging Africa's climate finance gap.

¹ See: <https://equator-principles.com/>

Investing in the climate: perspectives and opportunities

Global climate finance flows are increasing significantly. True, profound regional disparities remain, and developing countries, which account for the bulk of investment requirements, are struggling to attract the private capital essential for addressing climate mitigation and adaptation challenges. But private actors are increasingly investing in green finance, public-private partnerships and voluntary carbon credit markets. By using these tools and contributing its technological innovation capacity, the private sector is combining the fight against climate change with sustainable investment.

The facts

In 2022, the increase in temperature was already

+1.15°C

The Paris Climate Agreement, signed in 2015, aims to limit the global increase in temperature to +1.5°C above pre-industrial levels (IPCC Report, 2023).

Approx:

3.6

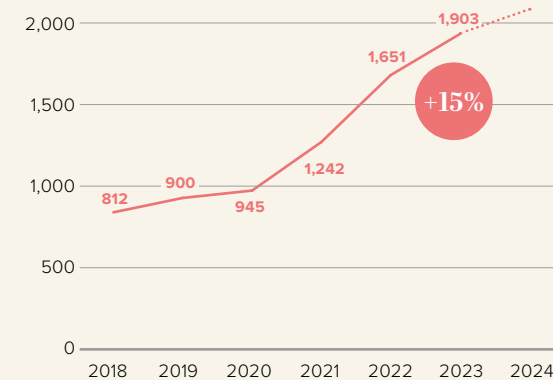
billion people live in areas that are highly vulnerable to the effects of climate change (IPCC Report, 2023).

Over

1.2

billion people could be exposed to climate risks in coastal regions due to rising sea levels by 2050 (UNEP, 2023).

Climate finance is increasing significantly, but is still insufficient



Amounts in USD billion

Sources: Climate Policy Initiative (2025) / Down to Earth (juillet 2025)

USD **1,903** billion

2023 was a record year for global climate finance flows

However, nearly **80%** of these global climate finance flows are concentrated in three regions (mainly Asia-Pacific, Western Europe and North America)

USD **6,300** billion

Amount of climate finance that would need to be mobilised on average each year between 2024 and 2030

At COP29 in Baku in 2024, it was decided that all actors have to work together to scale up finance to developing countries, from public and private sources, to the amount

of USD **1.3** trillion per year by 2035.

Real opportunities for the private sector

For the first time, private sector contributions topped **USD 1 trillion in 2023**, exceeding public investment. In 2023, private financing accounted for **two-thirds of global investment** in climate mitigation. In 2022, it already accounted for **54% of mitigation financing flows**, thanks to strong growth in private financing in the building, infrastructure and transport sectors.

Source: Global Landscape of Climate Finance (Climate Policy Initiative – 2025)

High potential sectors



Renewable energy



Energy efficiency



Resilient infrastructure



Sustainable agriculture



Water management

Finance and climate: key concepts

Climate change adaptation

The process by which human and natural systems adjust to limit the potential damage from the current or projected effects of climate change. Adaptation – in terms of behaviour, practices, structures and policies – can be reactive or proactive. It includes actions such as resilient regional planning, crop diversification, and the development of infrastructure that is resistant to extreme events.

Climate finance

All public and private financial flows dedicated to combating climate change, including mitigation and adaptation financing. Climate finance mobilises a variety of instruments, such as green loans, sustainable bonds, guarantees and subsidies. It targets projects that are compatible with international climate objectives.

Climate risk

The probability that extreme weather events or gradual changes will negatively impact socio-economic or natural systems. Climate risk results from the interaction between exposure (e.g. population in a flood zone), vulnerability (sensitivity) and adaptive capacity. Climate risk management is a key issue in adaptation policies.

Climate scenarios

Plausible representations of future climate change, based on various assumptions about greenhouse gas emissions, climate policies and socio-economic dynamics. These scenarios, such as RCPs (Representative Concentration Pathways) or SSPs (Shared Socioeconomic Pathways), serve as a basis for climate modelling and the assessment of impacts, risks and adaptation strategies.

Decarbonisation

The process of reducing the carbon intensity of a system, economic activity or sector with a view to achieving carbon neutrality. This involves replacing fossil fuel with low-emission alternatives, carbon capture and storage, and transforming production and consumption patterns.

Mitigation

All actions aimed at reducing greenhouse gas emissions (GHG) and/or increasing carbon sinks in order to limit the extent of climate change. This includes the energy transition to renewable energies, energy efficiency, sustainable land management, and the development of low-carbon technologies.

Sources: IPCC Report (2023) / World Bank, Climate Finance Overview (2023) / Climate Policy Initiative (2025)

The “triple dividend” of adaptation

USD **320** billion every year through 2030 is required to meet the challenge of climate adaptation.

Investing in adaptation yields three types of simultaneous benefits:

Reduction of losses: avoiding or reducing the economic and human damage caused by climate change

Economic benefits: boosting innovation and creating jobs in green sectors

Social and environmental benefits: improved quality of life, public health and preservation of biodiversity

Sources: World Bank / GFDRR (Enabling Private Investment in Climate Adaptation & Resilience, 2021) / IPCC Special report, 2022
Global Landscape of Climate Finance (Climate Policy Initiative – 2025) / UNEP (2023)

#1 Banking on climate: driving the low-carbon shift



In the face of climate change, finance can no longer afford to wait.

Drought, resource constraints, geopolitical instability: climate impacts are already disrupting markets, supply chains and investment trajectories. Rather than bending to this uncertainty, banks and investors can drive systemic transformation of the economy by supporting credible low-carbon trajectories and channelling capital towards adaptation and resilience-type solutions. How can financial players adapt to a system that has become so unpredictable? Where to invest, how to redirect investment, what criteria to base decisions on? These are the questions that climate finance players are trying to answer.

Climate finance: how financial institutions can drive the transition

Climate change is shaking up economic fundamentals and rendering financial models inherited from the past obsolete. As systemic risks accumulate, banks and funds need to go beyond their supporting role and become proactive drivers in the transition. By redirecting capital, rethinking assessment tools and mainstreaming resilience into decision-making, these financial players can become decisive vectors of economic transformation.

The transition requires new finance models, new ways of thinking about investing and different ways of collaborating and partnering.

Marisa Drew, Chief Sustainability Officer,
Standard Chartered

Aside from repeated natural disasters, climate change has become a factor in global economic destabilisation. Shortages, supply chain disruptions and political trade-offs: financial assets are being exposed to increasingly concrete and frequent risks that are becoming less and less predictable. At the same time, the fragmentation of climate policies, particularly apparent in the United States, is weakening global coordination in responding to the emergency. “Whether it’s tariffs or rollback of inflation reduction legislation in the United States, I think it’s important to recognize that we are dealing with the economic inefficiency inherent in politics. Every step backward just makes the temperature rise.”, warns **David Carlin, consultant and former head of the UNEP FI’s Risk and adaptation programme**. In an unstable geopolitical climate, multilateral commitments are faltering: the Paris Climate Agreement, the Green Climate Fund and common taxonomies are all becoming less straightforward.

However, despite the decline in international consensus, climate change remains a major systemic risk that financial institutions must not only take into account, but also place, more than ever, at the heart of their decision-making models, in order to become vectors for the transition of the entire economy. Through their ability to channel capital flows, structure incentives and support transformation trajectories, they are critical levers.

In October 2025, the Proparco Days brought together in Paris around a hundred leaders from financial institutions and investment funds to discuss the challenges of climate finance. The Proparco Days was designed as a collaborative space for strategic exchanges, with small group discussions to co-design scalable and actionable solutions and High-level panels with leading voices in sustainable finance.



It's not enough to sign up for the marathon. That's the net zero commitment. But you need a training plan to get over the finish line. The transition plan is your firm's training plan.

David Carlin, Consultant and former head of the UNEP FI's Risk and adaptation programme

Emerging markets: challenges and opportunities

In emerging markets, this paradigm shift is really fundamental. As Anita George, founding chair of ProsperETE Capital Advisors stresses, "emerging markets are disproportionately affected by climate change and, within these, it is the poorest people who are the most affected. The role of climate finance cannot just be to finance sectors, it also has to be more inclusive to provide real benefits to the most vulnerable people." Faced with major climate impacts and inadequate energy infrastructure, these economies have no choice but to innovate rapidly to meet both growing energy demand and environmental challenges. For Anita George, this is not a

constraint but an opportunity that financial institutions need to seize. She stresses that "72% of emissions come from emerging markets, including China, and 28% from developed countries. In many cases, emerging economies don't have the luxury of the industrial legacy of developed markets. So, when you take energy for example, you need to decarbonize all your existing assets, which typically tend to be composed largely of fossil fuels, but to keep pace with growth you also need to build new assets. 80% of buildings in Africa and 50% in India are yet to be built. If we could only build these in a "clean" way, it would make an enormous difference." There are numerous domains for action: electric vehicles, energy storage, sustainable agriculture, battery recycling, low-carbon materials.

To convert this potential, a financial ecosystem is needed that can support high-impact players who have the technological solutions but often lack the material and financial resources. Anita George goes on to explain that, "More than 50% of early-stage businesses in countries like India fail. In the US, this figure is three times less. One of the biggest constraints is access to capital. We have to do much more in emerging markets to provide equity financing in the early growth stage. There really is a missing link. So, there's a huge opportunity for blended finance or catalytic capital. And you don't need big amounts of private equity. Very small amounts invested wisely can make a massive difference." The ProsperETE fund, which she heads up, deploys large-scale mitigation and adaptation solutions using catalytic capital. Transforming business models and investing in the players of tomorrow in these countries therefore requires a major change in performance metrics, which must incorporate the concepts of resilience, adaptation and transition. Anita confirms that "At the current level of uncertainty and unpredictability, the pathway that will gradually build portfolios that may be slightly less efficient, but much more resilient, will be achieved by placing resilience at a much, much higher level than mere 'accounting efficiency'."

From ambition to action

Becoming a vector in the transition to a more resilient economy also requires the deployment of robust transition plans. David Carlin insists that, "operationalizing transition finance really becomes the key question. A lot of times people say, 'Oh, this is just another reporting exercise'. And I say, 'No, you can't afford not to do this, because this is about setting out your strategy.' It's not enough to sign up for the marathon. That's the net zero commitment. But you need a training plan to get over the finish line. The transition plan is your firm's training plan. A good plan factors in capital reallocation, business models, and the segments of the business that need to grow." David believes that the best organisations set the standard at the top, disseminate expertise internally, and align incentive schemes with climate objectives.

The British bank Standard Chartered, which operates in 59 countries (including 40 emerging markets), has embarked on this transformation. By 2021, it had aligned its portfolio with a net-zero trajectory, including for Scope 3 emissions and those from the activities it finances, which account for more than 95% of a bank's carbon footprint according to UNEP-FI. Marisa Drew, Chief Sustainability Officer, Standard Chartered, stresses that "the transition requires new finance models, new ways of thinking about investing and different ways of collaborating and partnering." To support this transformation, the bank has created five thematic hubs (carbon, adaptation, blended finance, circular economy, and nature-based finance) with the aim of designing innovative financial structures, channelling capital flows into the right projects and helping clients with their strategic pivots. Marisa goes on to explain that, "these are protected spaces that are staffed with subject matter experts in each

particular thematic area. Their role is to design new financial structures, invent innovative methods for capital flows, new partnerships and new arrangements in order to attack some of these challenges." Each key sector has been modelled. A decision-making tool now enables any banker to check whether a loan increases or reduces emissions. Marisa Drew reckons that, "Every time the bank wishes to make a loan to 'a hard-to-abate' sector, the tool calculates the related emissions and whether this loan will push you above the net zero threshold or whether it will finance a decarbonizing activity. This tool helps structure exchanges with clients, nudge them towards greener businesses and channel capital towards good projects right through 2030." This strategy, combined with strong internal expertise and appropriate incentives at all levels, is already generating tangible results. Marisa is delighted to note that, "In addition to our net zero 2050 objective, we committed to delivering USD 1 billion in sustainable finance income. Last year we hit USD 982 million, a year ahead of target." Standard Chartered has thus demonstrated that a financial institution can combine strategic transformation, long-term resilience and immediate profitability, provided it has a political vision, concrete tools and strong governance. Far from being a cost, the low-carbon transition actually becomes a lever for growth, resilience and competitiveness.

Having a brilliant idea is not enough to succeed: you need the right funding to develop and make these innovations affordable and accessible.

Anita George, Founding chair of ProsperETE Capital Advisors

📖 An article by

Sarah Bendahou, Research Fellow Development Finance, Institute for Climate Economics (I4CE)

Blandine Arvis, Research Fellow Development Finance, Institute for Climate Economics (I4CE)

Financial institutions' climate role: from commitments to action

Financial institutions, including banking and funding institutions, have a pivotal role to play in driving low-emissions and climate-resilient development. They need to adopt practices that support climate mainstreaming in local financial systems, from committing to climate strategies to improving their climate performance. Support from development finance institutions often proves to be an enabling or even a crucial factor.

Developing climate strategies is a critical first step to defining financial institutions' contributions to the achievement of global climate objectives. In line with existing guidance (e.g. ISSB standards on climate-related disclosures), financial institutions can address the following areas when committing to climate strategies:

- Developing a climate governance strategy, which requires raising awareness and building the capacity of board members on climate-related issues, to enable board oversight of climate target achievements. To go a step further, KPIs and internal incentives for board members can be linked to climate performance.

- Integrating climate considerations in a financial institution's strategy, which can be materialised by developing a transition plan demonstrating how the institution will achieve its climate-related targets. Most advanced institutions also seek to integrate climate considerations into both their overarching strategy and across their sector, country, and business-line strategies.

- Developing climate-related targets, which in addition to a commitment from top management to align with climate goals, will need to consist of targets such as increasing investments in activities with positive climate impacts and reducing investments in activities with negative impacts. These targets ideally need to be regularly reviewed and updated.

- Building the capacity of management and operational teams on climate-related topics, as a first step towards implementing climate-related strategic objectives. Developing internal guidance and processes to support implementing the climate goals defined in the strategy should then follow. Similar to board member performance incentives – and to go a step further – KPIs and internal incentives for management and operational teams can be linked to climate performance.

Managing climate-related risks

Assessing and managing exposure to climate-related financial risks requires mapping exposure to both transition and physical risks. Development finance institutions can provide technical assistance to support this exercise. The detailed assessment of climate-related risks of assets and transactions has two components: exposure to acute and chronic physical risks, on the one hand (e.g. acute risks such as extreme weather events, and chronic risks such as sea level rise), and exposure to climate-related transition risks, on the other (e.g. carbon pricing, shifts in energy use to lower-emission sources, reputation risk, etc.).

Financial institutions already well advanced in the assessment and management of climate-related risks could consider how risk analyses might feed into risk management processes as well as deal origination for both mitigation and adaptation finance.

Promoting climate-smart objectives

A financial institution has to define climate-related objectives that are relevant to its operations. This does not entail reducing financed emissions as a primary objective, but rather seeking to identify how institutions can further contribute to the transition to low-emissions and climate-resilient economies. These objectives should build on existing national or regional sustainable finance taxonomies, as appropriate. They can be of the following three types:

- Increasing climate-related activities and investments, through climate-related products and services, as a first step (e.g. green bonds or sustainability-linked bonds). For the most advanced financial institutions, this target could translate into engagement and business development with clients and market segments that contribute to achieving climate goals.

- Accessing and mobilising new sources of climate finance, both public and private (e.g. by becoming a Green Climate Fund-accredited entity), to increase the climate investment share of financial institutions' investments. Financial institutions can benefit from support by development finance institutions, for instance, by developing risk-sharing financial instruments that help mobilise additional finance.

SARAH BENDAHOU

Sarah Bendahou joined I4CE in 2021 and works on financial institutions' alignment with the Paris Agreement's goals. She also contributes to I4CE's role as the Secretariat of the "Mainstreaming Climate in Financial Institutions" initiative. Prior to joining I4CE, Sarah worked for several years in climate change and sustainability consulting, on assessing direct and indirect climate impacts and defining emission reduction targets, assessing exposure to climate-related physical and transition risks, and aligning with TCFD recommendations. She holds a dual-master's degree in Environmental Science and Policy, from Sciences Po Paris and Pierre and Marie Curie University.



BLANDINE ARVIS

Blandine Arvis joined I4CE in 2024 and carries out research on the intersection of climate and development finance, as well as contributing to the "Mainstreaming Climate in Financial Institutions" initiative. Blandine is an agricultural engineer; prior to joining I4CE, she worked in agricultural cooperation then in consulting, where she gained expertise in climate-related fields. Her past work includes climate vulnerability analysis for the agriculture sector, climate service design, support to climate policy processes (NAPs and NDCs) in developing countries, and research on climate finance instruments.



- Reducing activities with adverse climate impacts by, first, defining exclusion lists for activities with adverse climate impacts (for instance, coal, upstream oil and gas) and strategies to divest from such activities. Financial institutions can then take a step further by engaging with their clients on climate-related risks and opportunities.

Improving climate performance

Assessing and monitoring climate performance starts by tracking activities and investments that are inconsistent with climate goals, the volume or share of activities and investments that reduce greenhouse gas emissions, and the volume or share of activities and investments that build climate resilience.

FOCUS I4CE

The Institute for Climate Economics (I4CE) is a registered non-profit research organisation that provides independent policy analysis on climate change mitigation and adaptation. The Institute promotes climate policies that are effective, efficient, and socially fair. Its experts engage with national and local governments, the European Union, international financial institutions, civil society organisations and the media. I4CE's work covers three key areas of the climate transition – energy, agriculture, and forestry – and addresses six economic challenges: investment, public financing, development finance, financial regulation, carbon pricing and carbon certification. I4CE was founded by Caisse des Dépôts and Agence française de développement in 2015.

Accounting for climate action

Reporting on climate action involves publicly disclosing climate performance, depending on how it is being tracked by financial institutions, in addition to exposure to climate-related risks and, for those at the most advanced stages, the impacts of their climate-related activities and investments.

How can development finance institutions help?

A recent survey¹ by the European Investment Bank (EIB) and the Latin American Association of Development Financing Institutions (ALIDE) found that a lack of know-how concerning green investment and climate change adaptation among clients remains a barrier to scaling up green projects in Latin America and the Caribbean.

Technical assistance provided by development finance institutions to develop tools and build staff capacity is unanimously seen as valuable for financial institutions in driving alignment with the Paris Agreement. Support for impact assessment, monitoring and evaluation, as well as project preparation ranked as the highest priorities for technical assistance among surveyed members of Finance in Common², a global network of public development banks. Technical assistance to help navigate sustainability reporting requirements and support financed emissions tracking is also a recurring request from financial institutions. It helps build capacity for self-assessment of climate performance, enabling improvement over time, and ultimately allows financial institutions to account for their climate action, as appropriate.

Through technical assistance, development finance institutions can also contribute to reducing upfront costs and improving programme efficiency for climate-relevant market segments where financial institutions are engaging for the first time. It helps them increase their share of activities and investments, reduce greenhouse gas emissions, and build climate resilience.

Looking back on financial institutions collaborating on climate objectives

The Inter-American Development Bank's private sector arm (IDB Invest) provides technical assistance to its private sector counterparties, including local financial institutions³. Through this technical assistance, IDB Invest aims to improve the identification of climate project opportunities prior to investment, including through capacity building on climate; to support market development, through demonstration effects; to attract private investors, by supporting the structuring of blended finance operations and by facilitating the production and provision of knowledge to guide investor decision-making. Outside of multilateral development banks, development finance institutions such as British International Investment (BII) also provide technical assistance to financial institutions on climate-related issues. For instance, BII helps financial institutions further mainstream climate into their operations, manage climate risks, and improve their reporting practices. It also provides technical assistance to financial institutions requiring support for climate investments.

Other examples of technical assistance projects include supporting financial institutions in developing tools that sustain project assessment frameworks. For instance, the Brazilian Development Bank (BNDES) received support from KfW in calculating avoided emissions from projects, by providing analysts with avoided emissions indicators for their operations. In another example, EIB supported FONPLATA in developing a system to assess project alignment with sustainable development goals (SDGs), providing clear information throughout the project lifecycle.

Development finance institutions can also support financial institutions by co-developing climate risk assessment tools. An example of this is IDB's support for mapping the climate risk vulnerabilities in key value chains in Mexico and Brazil. The tool helped identify the main climate risks and the most exposed regions and agricultural chains within FIRA's (Trust Funds

for Rural Development of Mexico) portfolio⁴. This, in turn, helped deliver more targeted investments to build climate resilience. Another example is Proparco's support for climate-related transition and physical risk assessments for financial institutions that benefit from broader climate-related technical advisory services, for instance through its Pro Climate programme.

Why is it important for financial institutions to act now?

Many financial institutions already see the business opportunity in financing climate investments, and some have significantly increased such investments over the past years, most notably in renewable energy development. This will however not be sufficient in the face of the global challenges the world is facing. For instance, scientists have warned that even a 1.5°C warming scenario – which is no longer within reach according to most recent studies – could cost up to USD 63 billion in adaptation and residual damage to major crops⁵, among other climate impacts.

Financial institutions must join forces for capital to be directed towards the achievement of global climate change objectives. They have a key role to play in enabling decarbonisation and climate resilience in local economies and societies, by allocating their investments to where it is both profitable and beneficial for broader sustainable development.

For further information:

- Supporting financial institutions in developing countries in their alignment journey with climate goals (I4CE – 2023)
- How can financial intermediation better contribute to the climate transition? (I4CE – 2025)
- What is climate mainstreaming? (Mainstreaming Climate in Financial Institutions)

³ See: <https://idbinvest.org/en/sectors/financial-institutions>

⁴ The EU's Latin American and Caribbean Investment Facility, AFD, and IDB financially and technically supported FIRA to provide concessional loans for pilot green rural investments, and long-term financing for climate change mitigation and adaptation in rural activities.

See: <https://www.euiaif.eu/en/projects/combating-climate-change-agriculture-fira-program>

⁵ <https://www.wri.org/insights/1-5-degrees-c-target-explained#what-happens-if-we-breach>

¹ See: <https://www.eib.org/en/publications/20240047-climate-financing-in-latin-america-and-the-caribbean>

² See: https://financeincommon.org/sites/default/files/2024-07/FICS_TA_PDB_mapping_report_final.pdf



The GEF Latam fund team in São Paulo, Brazil.

Interview with
Anibal Wadih, Founder of GEF Capital

GEF Latam: preparing the ground for climate mitigation and adaptation funding

GEF Capital invests in private climate change solutions in the mitigation and adaptation space in Brazil. Its partnership with Proparco has been catalytic in attracting investments from key institutions as well as several institutional investors. Based in São Paulo, Anibal Wadih, founder and Managing Director, heads the fund's Latin America (GEF Latam) practice. He brings more than 25 years of experience to his role.

How does GEF Latam ensure alignment with the Paris Agreement?

GEF Latam demonstrates its unwavering commitment to the Paris Agreement with policies that proactively exclude high-emission sectors, including major carbon emitters and the fossil fuel industry. It uses proprietary assessment tools to meticulously evaluate and validate each investment's climate compatibility, actively engaging with Limited Partners (LPs) for rigorous scrutiny. Post-investment, GEF fosters transparency and accountability by assisting companies with accurate carbon reporting, continually monitoring environmental performance, and relentlessly pursuing carbon footprint reduction, all within the framework of clearly defined net-zero objectives.

What tools does the fund use to assess climate and ESG risks?

The GEF Latam approach to climate and ESG risk assessment is holistic and robust,

leveraging multiple structured tools, which include the following.

Early Impact Assessment. This is an initial screening tool for evaluating potential investments against the Fund's exclusion list, the UN Sustainable Development Goals (SDGs), and EU Taxonomy eligibility. It incorporates TCFD climate risk assessments and applies the Impact Management Project (IMP) framework, ensuring investments align with climate objectives; it also identifies preliminary ESG risks.

ESG Due Diligence (DD). Conducted by independent third-party consultants, this deeper evaluation thoroughly explores environmental, social, and governance risks, aligning findings with IFC Performance Standards and the SASB framework. The outcome includes a detailed ESG analysis and an Environmental and Social Action Plan (ESAP).

ESAP and Sustainable Stewardship Committee. A post-investment governance process ensures execution of the ESAP and continuous monitoring of key performance indicators (KPIs) to maintain ESG alignment throughout the investment lifecycle.

ANIBAL WADIH

Anibal Wadih founded GEF Capital and is currently partner and Managing Director. Based in São Paulo, he heads its Latin America practice, leading regional strategies for sustainable growth equity investments. His more than 25 years of experience in investing, entrepreneurship, and advisory roles includes senior positions at Macquarie Capital, where he focused on infrastructure and agribusiness investments, and at Deutsche Bank in their M&A team. Anibal currently serves on several boards, including UCB Power, GR Water, and Pro Solus, among others. He holds degrees in Electrical Engineering from Universidad Simón Bolívar, Finance from IESA, and an MBA from NYU Stern.





FOCUS GEF CAPITAL

GEF Capital Partners (GEFCP) is a leading private equity firm focused on climate investing in Brazil, India, and the United States. As one of the largest firms in Latin America dedicated to climate solutions, GEF is expanding its activities in the region. Fund IV aims to generate long-term capital appreciation by investing in private equity opportunities that are well-positioned to drive growth in climate change solutions in Brazil. It will prioritize sectors such as clean energy, urban solutions and sustainable agriculture mitigation and adaptation. With strong adherence to ESG standards, it will track reductions in greenhouse gas emissions and beneficiaries impacted.

GEF | CAPITAL PARTNERS



75%

of GEF Latam's resources are allocated to climate mitigation, prioritizing transformative renewable energy projects, cutting-edge energy efficiency solutions, and pioneering circular economy initiatives.

What proportion of the portfolio aligns with climate goals, and how is this verified from the outset and during the holding period?

We proudly maintain a 100% climate-aligned portfolio. Every investment opportunity undergoes rigorous initial screening and an extensive external ESG due diligence adhering to IFC standards. This comprehensive process ensures consistent climate alignment at entry and continuous verification throughout the investment lifecycle, with climate integrity embedded at the core of the strategy.

How does the fund balance business growth with emissions reduction?

GEF Latam excels by embedding a strategic alignment of business growth and emission reduction from the outset. Climate governance principles are integral, beginning with the earliest stages of investment evaluation. Term sheets explicitly define climate commitments, supported by rigorous, enforceable climate-focused ESAPs. Each investee company forms a dedicated Sustainability Stewardship Committee, overseen by specialized Sustainability Officers, ensuring climate performance goals are seamlessly integrated with financial objectives, creating sustainable value for stakeholders.

What are the fund's climate adaptation and mitigation comparative allocations?

Currently, our portfolio strategically allocates approximately 75% to climate mitigation, prioritizing transformative renewable energy projects, cutting-edge energy efficiency solutions, and pioneering circular economy initiatives. The remaining 25% of our investments focus on

climate adaptation, particularly on resilient critical infrastructure such as advanced water and wastewater management systems. With its commitment to evolving climate resilience, the fund aims to increase its adaptation investments significantly, to address urgent and emerging environmental challenges.

What indicators does the fund use to track its climate performance?

Rigorously monitoring the fund's climate impact entails using clear and comprehensive indicators. Mitigation projects are tracked for emissions avoided, comprehensive emissions inventories, renewable energy adoption, water usage, and waste management efficiency. Adaptation metrics evaluate tangible resilience

Post-investment, GEF fosters transparency and accountability by assisting companies with accurate carbon reporting, continually monitoring environmental performance, and relentlessly pursuing carbon footprint reduction, all within the framework of clearly defined net-zero objectives.

benefits – including beneficiaries strengthened against climate impacts – hectares restored, and water conserved. This extensive dataset informs a dynamic dashboard, which is regularly updated and externally verified to ensure transparency and accuracy.

In your view, what are the most promising climate sectors in the near future?

Sustainable agriculture and land management are foundational to Brazil's climate and development strategies, offering profound potential for impactful change. The fund closely tracks the exciting rise of bio-inputs. These simultaneously address economic resilience, by reducing dependency on imported agrochemicals, and enhance climate resilience, through improved soil health and significant emission reductions.

Brazil also boasts exceptional potential in clean energy, generating over 82% of electricity from renewables. Yet, heavy reliance on hydro-power combined with infrastructural inefficiencies heightens its vulnerability to climate-induced stress. Thus, expanding non-hydro renewable sources like solar and wind are essential to securing sustainable energy resilience. Furthermore, significant opportunities exist in advanced wastewater and

Proparco's partnership significantly enhances GEF Latam's credibility, enabling it to mobilize substantial additional climate finance from institutional and private investors.

sludge management solutions. With only 51% of Brazil's population connected to proper wastewater systems, addressing this critical gap using innovative infrastructure will significantly enhance community resilience, public health, and sustainable economic growth.

What lessons has GEF Latam learned from investing in climate?

Our journey has reinforced the crucial importance of region-specific climate risk assessments and integrating climate governance early in the investment process, expanded on below.

Region-specificity. Climate change is inherently local, manifesting unique risks and opportunities across different regions. Relying solely on international benchmarks without local context can result in overlooked risks and missed opportunities. Metrics built exclusively around European transition frameworks often miss critical adaptation needs and supply chain vulnerabilities specific to Latin America.

Climate governance. In earlier investments, the introduction of ESG and climate governance frameworks following investment decisions led to slower adoption and resistance from management teams. Today, embedding climate governance from the earliest stages is prioritized. This significantly enhances management engagement, fosters timely identification of climate risks and opportunities, and ultimately improves investment outcomes.

How does the current geopolitical ecosystem influence climate investments in Brazil?

Brazil enjoys a strategic advantage in climate investment, benefiting from growing global demand for renewable energy, sustainable commodities, and critical minerals. Its potential as a candidate for supply chain diversification further enhance its strategic appeal. Brazil's active role in international forums like the G20 and COP30 reinforces its credibility and attractiveness to international climate finance. Nonetheless, global macroeconomic uncertainties and persistent domestic challenges present layers of capital risks that must be navigated carefully. The fund's strategy involves proactively managing these factors to ensure resilient and impactful investments.

What impact does Proparco's investment have on mobilizing other climate finance?

Proparco's partnership¹ significantly enhances GEF Latam's credibility, enabling it to mobilize substantial additional climate finance from institutional and private investors. Its stringent climate diligence, robust reporting standards, and expert technical guidance have been instrumental in refining GEF Latam's internal impact assessment frameworks, aligning it closely with global climate commitments. Proparco's active role has also been catalytic in attracting investments from key institutions such as the Japan International Cooperation Agency (JICA) and BNDES, as well as from several institutional investors currently in discussions as potential future partners. This collaboration empowers GEF Latam to confidently engage in frontier climate sectors, including critical materials, positioning it as a leader in innovative, impactful climate investing.

¹ In 2022, Proparco has partnered once again with GEF by investing USD 25m in its GEF LatAm Climate Solutions Fund III.

Climate action: the GEF Latam fund's five strong points

1

Good knowledge of Latin America

Regional insight ensures a deep understanding of Latin America's climate risks, opportunities and context-driven investment strategies.

2

Among the largest and longest-tenured climate-focused funds in the region

GEF Latam is supported by a global platform with offices in India and the U.S. and a portfolio of 40+ climate-aligned investments.

3

Integrated sustainable governance

The governance is aligned with global standards like the Paris Agreement and the 2X Challenge embeds climate considerations, from due diligence through to exit.

4

A focus on transition enablers in mitigation and adaptation

This dedicated climate fund targets clean energy, sustainable land use, and resilient urban solutions.

5

A catalyst role for capital mobilization

This role is evidenced by the fund's ability to attract institutional and private investors through credible, high-impact theses.

#2

How to seize climate mitigation finance opportunities and start decarbonizing



Given that sustainable finance is no longer just an option, it must now be deployed to all economic players.

Banks and investment funds are aware of this. To convert the emerging momentum of climate finance into concrete results, they must address three key challenges: legitimacy, trust and simplified access to appropriate solutions. While managing risks and maintaining profitability, they must become familiar with and thoroughly adopt sustainability, forge strategic partnerships and integrate new metrics. Above all, they must turn innovation into a driving force to convert climate challenges into opportunities for growth, impact and leadership, for truly sustainable development.

Sustainable finance in action: when financial players transform their business model

To bolster their action in favour of climate change mitigation and adaptation to its adverse effects, financial institutions are reorganising. They are rethinking their processes, products and conditions of access to their services in order to amplify decarbonisation. Everybody involved in this process shares common ground: a strong internal commitment, the conviction that this new framework offers real business opportunities, and recognition of the essential role of development finance institutions (DFIs) in scaling up. Priority is often given to small and medium-sized enterprises, which lie at the heart of the real economy.

Despite very different economic, social, geographical and geopolitical contexts, many financial institutions are adopting similar approaches to offering responsible financing products that are both practical and commercially viable. The importance of internal commitment is a common feature of all these institutions. “During the Covid period, First Rand decided to incorporate shared prosperity into its strategic framework. - For the management team, it was becoming increasingly difficult to say ‘we are prospering’ when our country was not”, explains **Bhulesh Singh, Treasurer of South African group First Rand Bank**. The bank therefore reviewed its priorities in order to contribute more effectively to the well-being of society, and “no longer just generate profit. We’re the custodian of an enormous amount of savings of citizens of the country. And then we also asked ourselves, “what would society want us to do with all these savings?”



In-house testing and acculturation

In Costa Rica, Banco Promerica’s trajectory is based on a two-pronged approach: a strong commitment from senior management and the mobilisation of local green champions. As **Michelle Espinach, Sustainable Bank Manager, Banco Promerica Costa Rica** (see interview on p. 36), explains: “We actually started engaging in green financing before there was a word for it. There was no taxonomy in our countries. Development finance institutions (DFIs) like Proparco helped us all the way.” The decision to sign up to the Net Zero Banking Alliance¹ was a turning point: “The banks that signed this agreement took risks, because decarbonising a portfolio is a complex task. But a more responsible customer is also a more profitable, and therefore a more solvent one. Everyone’s wins.” Michelle Espinach calls on financial institutions to take a more proactive role: “We have to use the power we have to finance the economy for the common good. But if all banks decided to no longer finance the big polluters and certain polluting vehicles, that would change our country instantly.”

The banks believe that to sell the idea of sustainability, you have to embody it. **Alex Mantua, CEO of ProCredit in Georgia**, believes that, “If everyone in the institution understands what sustainability is, then you can sell it. Otherwise, you can’t break into the market.” This group, whose assets are mainly invested in small and medium-sized enterprises in

We’re the custodian of an enormous amount of savings of citizens of the country. And then we also asked ourselves, “what would society want us to do with all these savings?”

Bhulesh Singh, Treasurer of South African group First Rand Bank.

the country, has opted to train its 450 employees every year since 2010: “Once is not enough, the process has to be repeated.” At the same time, the bank itself first deployed the solutions it wished to market. “In 2015 or 2016, when I asked colleagues to come up with a solar panel project for head office, the payback period was 25 years. We said, it’s not possible. Then the cost came down, and in 2019-2020 we re-evaluated the payback period. Once it had fallen to 9 years, we said now we’re going to do it.” Internal testing made the offer more convincing for customers, even though the IRR still had to be reduced to a maximum of 7 years.

By incorporating subsidies and reduced interest rates, ProCredit calibrated its model and launched an eco-loan for installing solar panels for SMEs, with an automatic approval process based on financial data and available surface area. It has also encouraged electromobility by first replacing its own fleet and then facilitating loans to facilitate access to it.

¹ This programme, which was launched in April 2021 as part of the United Nations Environment Programme (UNEP-FI), brings together 43 banks committed to aligning their investments and portfolios with the goal of net zero emissions by 2050.

We have to use the power we have to finance the economy for the common good. If all banks decided to no longer finance certain polluting vehicles, that would change our country instantly.

Michelle Espinach, Sustainable Bank Manager,
Banco Promerica Costa Rica

Accessible products to facilitate decarbonisation

The Kenya Commercial Bank (KCB) group, a member of the Net Zero Banking Alliance, is demonstrating the same proactive mindset. As **Eric Naivasha**, Head of Sustainable Finance for the group, explains, KCB has initially identified three priority areas for action: transport, commercial real estate and commercial lending. “90% of our emissions come from lorries. We therefore developed a decarbonisation strategy per segment: two-wheelers, light vehicles, heavy goods vehicles, etc.” KCB’s trajectory forecasts that 60% of new vehicle financing will be for electric vehicles by 2040, with a total halt to loans for combustion engine vehicles after that. More broadly, the group is aiming for a 25% green portfolio within two years, representing USD 5-10 billion in investments. But Eric Naivasha stresses that success depends less on plans than on human expertise. “Until the client-facing person understands that strategy, then it just remains some nice piece of paper in our files. We need to train not only our staff, but also our customers, right down to the small farmer who is unaware that climate change is reducing his harvests.” For him, the transition must become a lever for opportunity and it concerns irrigation and greenhouses as much as the overall deployment of resilient agriculture.

All of this represents an investment of only USD 400,000 to USD 500,000. We have already avoided the emission of 26.1 tonnes of CO₂ with only 120 tricycles. Imagine the impact with tens of thousands.

Abubakar Suleiman, CEO of Sterling Bank

However, for it to fully play this role, sustainable financing must be made accessible (locally), and this is another requirement common to all institutions. Sterling Bank’s actions in Nigeria illustrate this: in 2024, it financed the purchase of a fleet of 120 electric tricycles to support female entrepreneurship and mobility in Kano, a city with a population of 14 million. **Abubakar Suleiman, CEO of Sterling Bank** explains that, “the aim was to provide women with a means of transport that they not only own but have co-created, that is both economically viable and improves the local economy.” Today, the fleet, which is equipped with interchangeable solar-powered batteries, has clocked up a total of 450,000 kilometres. Abubakar calculates that “In three days, a driver can earn the equivalent of a minimum monthly wage. “All of this represents an investment of only USD 400,000 to USD 500,000. We have already avoided the emission of 26.1 tonnes of CO₂ with only 120 tricycles. Imagine the impact with tens of thousands; on a large scale? – and this won’t require any subsidies.”

Towards a sustainable transition at scale

And as the banks point out, scaling up requires rethinking objectives, organisations and operational tools. In the face of global challenges and their local contexts, the energy transition is not a mere formality: it is a requirement for staying in business as much as a lever for competitiveness.

But this requires new business strategies, careful risk management and structural transformation of the economies they finance. For **Rachael Antwi, Head of Sustainability for Ecobank group** (see interview on p. 66), the bank’s record reflects its commitment to climate finance: “It’s not a question of compliance, but of survival – for the bank and for the economies in which we invest.” Ecobank has launched its own initiative, which includes portfolio analysis, a decarbonisation plan with a coal exit policy, and targeting sectors with high green potential. “Our goal is to mobilise USD 5 billion in six or seven years for climate finance.” This strategy is based on a continuous learning approach: internal training, data audits, and the creation of an ad hoc digital tool to analyse and monitor physical and transition risks. Rachael Antwi also highlights the difficulty (and importance) of obtaining reliable data in Africa and the need for an integrated reporting system.

Eric Campos, Crédit Agricole S.A.’s Chief Sustainability and Impact Officer, explains the complexity of sustainable development in a group with assets exceeding €1 trillion. “The challenge is not to green our assets, but to green the economy.” Since 2019, the group’s climate strategy has been supported by a Scientific Advisory Committee and the direct commitment of the Chairman and Chief Executive Officer: “Without support from senior management, don’t even try to implement a climate strategy. It’s absolutely impossible.” The challenge is twofold: maintaining financial performance while taking responsibility for carbon performance. Between 2020 and 2024, the bank increased its investments in renewable energies by 140% and reduced those in fossil fuels by 40%: “It is absolutely imperative that we turn climate constraints into business opportunities.”

Going beyond traditional approaches

Proactive and determined, financial players who are committed to climate finance and its concrete deployment still stress the advantages of being able to rely on development finance institutions (DFIs) such as Proparco. The testimony of **Hawshi Shawa, Chairman of the Bank of Palestine Group**, is very interesting in this respect: “Thanks to the catalytic effect of AFD and Proparco programmes, we have been able to lend more in a difficult context.” The Sunref I & II projects have financed solar farms ranging between 0.5 and 5 MW, and since 2018, more than USD 50 million in green loans have been granted to SMEs to improve their energy efficiency. “This illustrates the scale effect made possible with the right programmes: a risk reduction component, a subsidy component, and above all technical assistance to train our teams, raise customer awareness, and encourage them to adopt these solutions,” he adds.

Beyond that, regardless of their location, all banks support innovation (through venture capital funds, acceleration hubs, etc.) by increasingly encouraging start-ups committed to sustainable development. The aim is to unleash the entrepreneurial dynamism that is often stymied by traditional banking processes, in order to further accelerate the battle against climate change and give concrete impetus to sustainable development.

From promise to plan: building a credible transition

Taking action on climate mitigation requires a clear strategy and a structured plan to rethink a business’s development trajectory and its internal trade-offs. As **Ilaria Balletto, head of the ACT (Assessing Low Carbon Transition) initiative at ADEME (the French Agency for Ecological Transition)** points out, “a transition plan is not a side strategy. It is not a CSR add-on. It is a way for a company to transform its business model to align with a strong 2050 net zero target”. In France, this framework, which is supported by ADEME (French Agency for the Ecological Transition), helps companies assess the feasibility of their climate trajectory by structuring coherent objectives, dedicated resources and verifiable indicators.

The Engie Group has used it to build a plan that is aligned with its goal of achieving carbon neutrality by 2045. As **Adrien Koenig, Head of Structured Finance at Engie** explains, “We use our transition plan to define the key performance indicators (KPIs) for our financing. Today, we have over €10 billion of financing tied to clear emissions targets, with yearly benchmarks.”

In Georgia, TBC Bank has taken a gradual approach. Maka Bochorishvili, Head of CSR at TBC tells us that, “Even though we didn’t know how to measure the emissions of our portfolio, we said let’s something that our customers can understand. So first of all, we set a 30% sustainability target.” To achieve this target, the bank has partnered its most emissions-intensive industrial customers, including helping them to design their products, thanks to a team of engineers integrated into the institution.

In Africa, where emissions avoidance takes precedence over reduction, Helios – a private equity firm focused on Africa – has developed a specific local approach. “We have put together a team to measure and compare emissions according to global standards, adapting them to Africa,” explains **Tavraj Banga, Partner at Helios Investment Partners**. A Nigerian tomato processing plant, which was previously dependent on Chinese imports, was thus able to reorganise its entire supply chain using local suppliers. This strategic repositioning reduced its carbon footprint, secured supplies during the pandemic and enhanced profitability. This is a concrete example of how climate transition can act as an economic lever.

E-mobility: using debt to scale up

Scaling up the electric mobility sector requires the use of debt financing. This is the message conveyed by three representatives of major investors in vehicle decarbonisation in Africa, India and Latin America.

The major shift towards electric mobility and the resulting massive decarbonisation cannot be financed by equity alone. This view is shared by many players in the sector around the world, starting with **Nijhad Jamal, Managing Partner at Equator VC**, a venture capital firm that invests in African tech start-ups. “We need specialist finance to come in and do working capital and inventory finance”, explains Jamal, whose company was one of the first investors in Roam Electric, a pioneering African electric motorcycle company based in Kenya. “We need banks and non-bank financial

institutions to unlock local currency debt for consumer finance [loans, leases with a purchase option, subscriptions, pay-as-you-go, etc.].” To scale up the e-mobility sector, debt must also be used to finance the cost of battery production and the recharging infrastructure, and to provide subsidies and technical assistance for innovation and the development of new markets.

Those investing in the e-mobility sector face numerous challenges. **Felipe Pinto is Managing Partner at Patria**, Latin America’s leading independent asset manager, which has decided to invest in the ‘very solid fundamentals’ of e-mobility, particularly in the market for trucks and vans making urban deliveries in a number of Latin American countries. After a promising launch phase, the question of scaling up arises. You need to “create a new sector, and therefore develop the ecosystem, the value chain and the supply chain. But doing this entirely with your own funds is impossible.”

And yet the potential benefits are considerable: **Souleymane Ba, Partner at Leapfrog Investments**, testifies to the strategic importance of the sector. In India, Leapfrog has invested in Battery Smart, India’s largest provider of self-service batteries for two- and three-wheeled electric vehicles, offering drivers convenient, inexpensive and low-carbon mobility. This is of key importance in a country where carbon emissions from these vehicles comprise up to 30% of total transport emissions.

“Why did we invest in the e-mobility sector?” remarks Souleymane. “Everything we do must first have a positive climate impact. But we also need to ask whether the product actually saves the end customer money? As a shareholder, will you make any money? And the final criterion is the structuring of the transaction: will we be able to exit the investment and get a decent return?” Since it was launched in 2020, Battery Smart has reached approximately 45,000 users through a network of 1,000 battery exchange stations in 30 cities across India, with 120,000 batteries in circulation.

A success story made possible thanks to the support of Leapfrog. However, in other contexts where equity is not enough, raising debt from private sources can be an uphill battle.

Nijhad Jama explains that this is particularly true “in many African markets where banks generate much higher margins by lending to the government rather than to the private sector. The demand is there. The technology is there. Margins are becoming decent. The different players in the value chain are coming together and collaborating. All that’s missing is non-equity capital to hold together the different parts of the model.” Debt is indeed the vector needed to scale up e-mobility.

In Nigeria, Proparco is helping First Bank develop a climate strategy

In 2022, Proparco approved a loan and two years’ worth of technical assistance for First Bank Nigeria to help integrate key climate issues into its strategy and operations. This enabled the Bank to launch a number of parallel initiatives:

- estimation of its (operational and financial) greenhouse gas emissions (GHG);
- analysis of the physical and transition climate risks to which the portfolio is exposed;
- analysis of the major opportunities for financing climate mitigation in the Nigerian market;
- staff training;
- integrating the different climate challenges into its existing procedures and strategies.

Thanks to these efforts, First Bank now has a baseline for its operational and financial emissions on which it can base its decarbonisation objectives. It has also been able to develop staff climate training modules together with a climate risk analysis framework for its operations. The Bank has also been able to use this work to begin reflections concerning the development of green finance products or the role that it can play in the transition of its most emissions-intensive customers.

This pilot programme, involving a number of teams from the Bank, has highlighted the stages required to integrate climate challenges into the organization. It has also shown that it is essential – and quickly very profitable – to do so.



Supported by Banco Promerica, the agricultural cooperative Coopeidia — specialized in sugarcane cultivation — was established in 1982 in the province of Alajuela, Costa Rica.

MICHELLE ESPINACH

Michelle Espinach is Sustainable Bank Manager at Banco Promerica Costa Rica, where she leads the bank's sustainability strategy. She has spearheaded major milestones, including Central America's first sustainable bond issuance, and has led Promerica to become one of the first banks in the country to sign the UN Principles for Responsible Banking and the Net-Zero Banking Alliance. Michelle also contributes to regional sustainability efforts as a member of Grupo Promerica's Technical Sustainability Committee. With over 30 years of experience in banking and development finance institutions (DFIs) relations, she is committed to advancing practical, results-driven solutions in sustainable finance.



Interview with

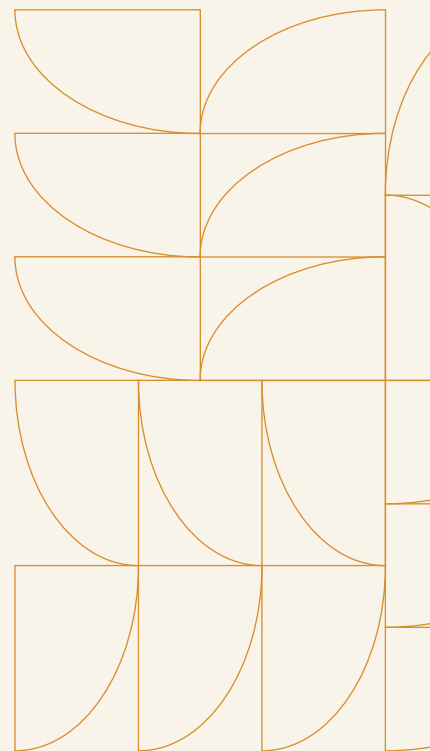
Michelle Espinach, Sustainable Bank Manager, Banco Promerica Costa Rica

For Banco Promerica, green construction is key to a low-carbon future

Banco Promerica Costa Rica is committed to channeling capital toward impactful projects, promoting environmental and social value, while maintaining financial performance. Financing construction projects that meet green certification standards or incorporate energy-efficient technologies and materials is enabling Banco Promerica Costa Rica to directly contribute to reducing emissions and resource use, while future-readying the sector.

How is Banco Promerica Costa Rica integrating sustainability considerations and criteria into its growth strategy?

At Banco Promerica Costa Rica, sustainability is embedded in the core of our business strategy, especially relating to how we intermediate resources. Rather than treating sustainability as a separate initiative, we integrate it in the heart of our financial operations. A key indicator we track is the ratio of our sustainable portfolio to the total portfolio (excluding credit cards), which reflects our commitment to channeling capital toward impactful projects. We define clear annual targets for this ratio and align our growth plans accordingly, ensuring that each business line contributes to advancing sustainability objectives. This approach allows us to steer our portfolio toward sectors and clients that promote environmental and social value, while maintaining financial performance. By linking sustainability to core banking metrics, we are creating a roadmap for long-term, inclusive growth that addresses the evolving needs of our clients and communities.





How does Banco Promerica Costa Rica measure the positive environmental impact of its financial operations?

At Banco Promerica Costa Rica, we measure the positive environmental and social impacts of our sustainable financing by tracking indicators tailored to the use of funds. For example, when financing solar panel installations, we measure the amount of renewable energy generated. In social-impact lending, such as for SMEs, we collect data on the number of jobs supported

Proparco's technical assistance has been instrumental in strengthening our climate risk management capabilities. With this support, we were able to develop a comprehensive heat map of our entire portfolio.

— disaggregated by gender – to understand our contribution to inclusive growth. For example: Parque La Libertad, located in San José and financed by Banco Promerica CR, is a key community hub dedicated to promoting sustainable development, environmental education, and social inclusion. On June 2025, the park inaugurated a project involving the installation of 184 solar panels, aimed at reducing its energy costs and carbon footprint. The initiative is expected to generate annual savings of over \$18,000 while preventing the emission of 45.5 metric tons of CO₂ per year.

What is the contribution of the technical support provided by Proparco, and what are the prospects for the future use and development of the tools created?

Proparco's technical assistance has been instrumental in strengthening our climate risk management capabilities. With this support, we were able to develop a comprehensive heat map of our entire portfolio, using a worst-case climate-change scenario to identify physical and transition risks. This tool has provided critical insights into our exposure and resilience, enabling us to better align our strategy with climate goals. Additionally, the project helped us implement a client-level assessment process, with in-depth analyses of three highly vulnerable

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GRUPO PROMERICA

For over 35 years, Grupo Promerica has promoted a relationship-driven banking model, offering products and services across nine countries: Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, the Dominican Republic, Ecuador, and the Cayman Islands. Banco Promerica Costa Rica is part of Grupo Promerica and has been a pioneer in sustainable finance and innovation, promoting more responsible banking practices and supporting the transition toward a more inclusive and resilient economy.

sectors: agriculture, real estate, and tourism. The heat map and assessment tools, among others, not only enhance our risk oversight, but also guide us in supporting clients through their own climate transitions. Looking ahead, we plan to embed these tools and methodologies in our credit processes and expand their application across more sectors, reinforcing our commitment to proactive and resilient sustainable finance.

Does Promerica plan on expanding its portfolio of green loans over the coming five years?

Yes, expanding our green loan portfolio is a central pillar of Banco Promerica Costa Rica's strategy over the next five years. Achieving our decarbonization targets depends directly on our ability to scale up green lending. To meet this ambition, we are focused on three key actions: developing innovative financial products tailored to green sectors, strengthening internal capacity – particularly among our loan officers – and actively working to transition our broader portfolio toward low-carbon activities. This includes identifying opportunities with existing clients and attracting new ones aligned with our own and existing clients' sustainable practices.

How does the strengthening of the green construction portfolio align with Promerica CR's broader low-carbon transition objective?

Strengthening our green construction portfolio is a key step in advancing Banco Promerica Costa Rica's low-carbon transition strategy. Real estate and residential mortgages represent 25% of our portfolio – and our national emissions – so promoting sustainable construction practices is essential to achieving climate goals. By financing projects that meet green certification standards or incorporate energy-efficient technologies and materials, we are directly contributing to reducing emissions and resource use. At the same time, we are supporting our clients – developers, SMEs in the value chain, and homeowners – in their future-ready practices.

“Five keys” for developing a decarbonization strategy

From Michelle Espinach

1

Prioritize key portfolios

Focus first on the most important and climate-vulnerable sectors for your organization.

2

Develop sector-specific tools

Tailor assessment tools to the unique risks and opportunities of each priority sector.

3

Integrate climate screening

Add a few key questions to evaluate client readiness and exposure across the rest of the portfolio.

4

Train front-line teams

Equip loan officers and analysts with the knowledge to identify risks and opportunities – they are your eyes on the ground.

5

Embed in decision-making

Ensure climate insights are part of credit risk assessments from the start.

RE&UP, circular technology serving climate mitigation

In Gaziantep, in south-eastern Turkey, SANKO Group is revolutionising the field of textile recycling. Its subsidiary RE&UP – which has partnered with a French company for its production machinery – combines cutting-edge technology, industrial performance and significant environmental benefits to mitigate the impact of an industry that has traditionally been a big environmental polluter. This project has received €70 million in strategic funding from Proparco.

Amidst the huge bales of textile waste being fed into state-of-the-art robotic production lines, a quiet revolution is taking place, far from the fashion catwalks. At RE&UP's industrial-scale facility in Gaziantep, a new generation of textile recycling is being shaped by SANKO Group, a global leader in industrial innovation. Here, bold ecological ambition meets cutting-edge technology to transform waste into high-value raw materials and rewrite the rules of circular fashion.



Faced with the overriding imperative of mitigating the effects of climate change and growing pressure on natural resources, the textile industry needs to reinvent itself. This is of the utmost urgency in the age of disposable fashion, in an industry responsible for around 10% of global CO₂ emissions, where only 1% of the 100 million tonnes of textile waste are recycled worldwide.

Waste avoided... and even reintroduced into production

It is against this background that SANKO, through its subsidiary RE&UP, has developed innovative processes to transform textile waste – even complex or poor-quality waste – into Next-Gen fibres that may be repurposed within the textile industry. In 2024, this project received a €70 million loan from Proparco to support green innovation and combat carbon emissions in the textile sector, thereby actively contributing to climate change mitigation.

As Andreas Dorner, General Manager of RE&UP explains, “We provide a solution that

not only reduces the environmental impact by avoiding landfill and waste incineration, but also feeds textile waste back into production, contributing to a global vision of an evolving circular economy for the fashion industry.”

At last - low-end textiles recycled using a “truly unique” process

The exclusive recycling technology developed by RE&UP can process large volumes of textile waste, including the complex cotton-polyester combinations often found in today’s garments. Mahmut Bayram, industrial engineer at SANKO adds that “Our technology can recycle both cotton and polyester rich textiles, even when these are mixed together. With the technical expertise of French company Andritz Laroche (*see article on p. 45*), this unique industrial process comprises several different phases.

The first step involves sorting, cutting and opening the fibres. The physical separation of the different components then allows the solid and unwanted fabric to be removed; this material is then moistened to preserve the fibres’ initial qualities. Lastly, thanks to an innovative chemical-free bleaching process, cotton and polyester are separated to obtain Next-Gen cotton and Next-Gen polyester with virgin like quality and performance.

Mahmut Bayram goes on to explain that “Until now, it had been impossible for the recycling industry to process coloured or mixed clothing. The uniqueness of our innovation makes it possible to decolourise the fibres and separate cotton from polyester while preserving the quality. We produce a recycled fibre that is

virtually like new and ready to be used by the textile industry without any loss of quality.”

Özde Demirturk, Director of Sustainable Finance at SANKO Group highlights the uniqueness of the process: “It’s a world first. The RE&UP process guarantees the long-term sustainability of cotton and polyester by giving value back to thousands of tonnes of waste that were previously considered non-recyclable.” Moreover, this waste ends up as piles of harmful old clothes on beaches and coastlines, for example in certain West African countries.

Greenhouse gas emissions, water, energy: a spectacular reduction

The results achieved using RE&UP technology are indisputably delivering significant reductions in water usage and CO₂ emissions, when compared to conventional virgin fiber production. This is accompanied by a massive reduction in energy consumption, thanks in particular to the installation of 33.5 megawatts of photovoltaic panels at RE&UP’s industrial sites.

Proparco helped finance the new (mostly cotton) textile recycling plant in Gaziantep, an essential step that will help to achieve the Group’s 200,000-tonne mechanical recycling capacity target by the end of 2026. The aim is then to reach 1 million tonnes a year by 2030, thanks to international expansions (*see the interview with the General manager of RE&UP on p. 44*). This development is based on an integrated business model, covering not just textile recycling, but the recovery of plastic waste (PET), the construction of innovative ultrafiltration plants to reduce the water footprint, and a proactive raw material traceability strategy.

The key role played by Proparco and French industrial expertise

Proparco played a key role in helping RE&UP to scale up its operations by structuring a €70 million financing facility, backed by €45 million worth of sub-participation from Agence française

Proparco played a key role in helping RE&UP to scale up its operations by structuring a €70 million financing facility, backed by €45 million worth of sub-participation from Agence française de développement.

de développement. Designed with favourable terms, including maturities tailored to the scale of the investments, the facility supports RE&UP in rolling out its technology and expanding its industrial footprint. This ambitious and technically advanced partnership between Proparco and SANKO stands out for its strong alignment with both environmental and industrial goals. It also supports the French SME Andritz Laroche, a strategic industrial partner of RE&UP.

Beyond the benefits observed in terms of mitigation, the Proparco / RE&UP partnership also has significant social benefits as it should create more than 200 jobs every year over the next five years, paying salaries above the legal minimum. The project also enhances gender equality by increasing the proportion of women in operational jobs. Thanks to its commitments, RE&UP has obtained the 2X Challenge label, an international programme designed to channel capital towards private sector initiatives that benefit women.

Towards a circular and sustainable textile industry

Thanks to this project, the SANKO Group is shaping a new industrial vision. One that combines technological innovation with environmental responsibility. Built on strong international cooperation between France and Turkey, both industrially and financially, RE&UP serves as a full-scale testbed for a low-carbon textile economy. It offers a tangible, scalable solution to addressing the root causes of climate change.



Özde Demirturk
Director of Sustainable
Finance, SANKO Group

The RE&UP process guarantees the long-term sustainability of cotton and polyester by giving value back to thousands of tonnes of waste that were previously considered non-recyclable.

Interview with

Andreas Dorner, General Manager of RE&UP

“Our goal: to create a global network of circular textile recycling hubs”



Andreas Dorner
General Managing of RE&UP

RE&UP's General Manager, Andreas Dorner, discusses the technical challenges encountered, the expansion strategy of Sanko Group's subsidiary, and the key role of the partnership with Proparco.

What were the main challenges you faced when developing the RE&UP project?

One of the biggest challenges was building a truly circular process, capable of tackling the realities of textile waste: complex combinations, contamination and a lack of standardised inputs. At the same time, the regulatory landscape was (and still is) evolving rapidly, so aligning our technology with both current and future regulations required a forward-looking approach from the get-go.

How did you overcome or work around those obstacles?

Our in-house R&D and engineering teams have been absolutely essential in every step in the project's development, from piloting new processes to scaling them up. Quality dialogue with external stakeholders – brands, regulators and certification bodies – has also been key. That combination of in-house technical expertise and external engagement has allowed us to move quickly.

Is your technology easily replicable?

Our technology is designed to be modular and scalable so it can be adapted to local environments, both in terms of raw material inputs and infrastructure. We're already in discussions with potential partners in different markets and we see strong potential for deployment alongside local players who understand regional textile channels and collection systems.

What are your future development plans?

Our next step is international expansion – we consider France to be our first location outside of Turkey. We're also continuing to enhance the efficiency of our processes and extend the range of materials we can handle – especially complex combinations. Our long-term goal is clear: to create a global network of circular textile recycling hubs that can transform local waste into local resources.

How has Proparco's loan helped RE&UP to scale up its business model?

Proparco's loan has enabled us to press ahead with our business roadmap, lay the groundwork for new infrastructure and invest in the systems needed to process higher volumes of textile waste, without compromising quality or sustainability. This kind of catalytic funding helps bridge the gap between innovation and impact, allowing us to move faster while at the same time maintaining our environmental integrity.

Our technology is designed to be modular and scalable so it can be adapted to local environments, both in terms of raw material inputs and infrastructure.

Andritz Laroche, innovation à la française

French-based company Andritz Laroche is a major player in fibre processing, recycling technologies for textiles and non-wovens (i.e., materials obtained by assembling textile fibres without weaving or knitting). The business was founded in 1926 in Cours-la-Ville, between the French cities of Lyon and Mâcon, and is renowned for its expertise in designing machines and complete lines for mechanical recycling of textiles, particularly based around the use of shredding.

Laroche has been part of the Austrian Andritz Group since 2021 and has a technical centre in the Rhône region. This state-of-the-art facility is used to test technical solutions and validate them on production lines, a major advantage when developing innovative textile recycling projects.

It is this expertise and capacity for innovation that enabled Andritz Laroche to partner with Turkish textile giant Sanko when this group launched its new recycling technology company RE&UP in 2023. In total, Sanko has ordered five mechanical recycling lines from Laroche.

Expertise that drives innovation in the textile industry

As Andreas Dorner, General Manager of RE&UP explains, “To truly push boundaries, you need to partner with companies that also have expertise in their specialist areas. Andritz Laroche has expertise in sustainable textile recycling process engineering and it has achieved excellent results. We knew that by joining forces, we could contribute to a major change in the sector.”

The challenge with this project was to ensure that the technology deployed was perfectly adapted to RE&UP's needs and that the machine configuration process ran smoothly once it was delivered to the customer.

Ultra-adaptation to customer requirements

Francis Elias Junker, sector sales director at Andritz Laroche adds that “We sell a project, not just a machine. Once the machine has been delivered, we install it, observe how it operates on site and adapt it in detail so that it does exactly what it was sold to do. Every production line is a unique project. Indeed, we produce a lot of equipment at our home site in Cours-la-Ville, the legacy of a century of industrial craftsmanship.”

By way of conclusion, Andreas Dorner explains that “We are using Andritz Laroche's technology to meet this challenge together. As we continue to develop RE&UP around the world, we are counting on Andritz Laroche for additional support so that we can meet the needs of our customers on a global scale.”

Following successful deployment of the pilot plant in Turkey, RE&UP consumer goods recycling hubs will be created in Europe, Asia and America, thereby scaling up the comprehensive solutions available for textile recycling and circularity in this industry worldwide.



Laroche has a 2,000 m² technical centre in the Rhône region equipped with the company's latest technologies.

#3 Financing adaptation in the face of climate risk



Mobilisation of resources for adaptation is entering a crucial phase.

The private sector has a key role to play in building climate resilience, provided it fully integrates adaptation into its business and risk management strategy. By channelling investment into sustainable infrastructure, robust supply chains and resilient technologies, businesses can not only reduce their own exposure, but also contribute to the stability of the regions in which they operate. Private financing then becomes a lever for innovation: resilience-linked bonds, parametric insurance, blended finance and public-private partnerships all make it possible to transfer and pool risks. However, avoiding the risk of poor adaptation – i.e. solutions that exacerbate vulnerabilities in the long term – requires concerted approaches, combining private capital with public risk-sharing and risk-reduction mechanisms.

Financing adaptation: anticipating risks to create value

To be truly effective, the private sector's contribution must be based on fairness and a long-term approach. This implies a pricing of risk that reflects the real costs of exposure without penalising the most vulnerable entities and populations, as well as a shared governance of resilience between businesses, governments and communities.

By integrating adaptation into strategic planning, product design and operational management, the private sector can turn climate constraints into competitive advantages. In doing so, it not only protects its assets, but also becomes a key player in collective resilience, contributing to an economy that can absorb shocks and bounce back in the face of future climate uncertainties.

Half a million people were recently affected by torrential rains in Punjab, India's breadbasket. Entire villages were wiped from the map in a just minute.

Purvi Bhavsar, Co-founder, Pahal Financial Services

Climate risks: a reality for infrastructure

Climate change poses a direct threat to infrastructure. In Uganda, Serengeti Energy, an independent power producer operating in nine sub-Saharan African countries, experienced two major floods in 2023, resulting in over €4 million worth of damage to its two hydroelectric power plants located on the Nyamwamba River. As **Marian Grabowski, Head of commercial operations** explains, "When a project is in the development phase these risks sound relatively abstract but in practice, they completely mess with your returns and financial models."

In India, "one of the countries most threatened by climate change," **Purvi Bhavsar, Co-founder of Pahal Financial Services (India)**, discusses the damage caused in several places on the subcontinent. "Half a million people were recently affected by torrential rains in Punjab, India's breadbasket. Entire villages were wiped from the map in a just minute." In Mauritius, the effects of global warming are also already very tangible, explains **Thierry Hébraud, CEO of Mauritius Commercial Bank (MCB)**: rising sea levels (4.7 mm a year since 1987), floods, cyclones, drought and heat waves. "Last year, one of my staff had to climb out of his car window to escape a flood," he says. The consequence of this climate change for the island is accelerated erosion of the beaches in a country that depends on tourism and financial services for half of its GDP. Mauritius' investment needs are enormous: USD 6.5 billion by 2030, including USD 4.5 billion for climate adaptation. Thierry Hébraud notes that "65% cannot be mobilised without international support."

On the other side of the Atlantic in Brazil, in 2024, the Rio Grande do Sul region experienced its worst flooding in 80 years. Vinci Compass, an alternative asset manager, saw 10% of the pylons along a 200 km transmission line that it owns and operates collapse. **José Guilherme Souza, Associate director at Vinci Compass**, recounts that "Several power utility assets were affected for a number of operators and some of our towers were completely destroyed." Insurance covered 90% of the losses, but «our premium more than doubled the following year, and fewer and fewer insurers are willing to insure assets in these types of regions."

Solutions and challenges for increased resilience

Faced with these disasters, it is not just a matter of repairing, but of anticipating. **Marian Grabowski of Serengeti Energy** explains that, "We received very good support from Proparco when we signed the technical assistance agreement last year, just to gain a better understanding of the key drivers here in Uganda." One of the first conclusions of the study conducted following the floods shows that a major fire in 2012 at an altitude of 4,000 metres in the Rwenzori Mountains led to a massive influx of sediment. At this altitude, forest regeneration takes years.

Serengeti Energy is therefore exploring adaptation solutions: closer monitoring of sediment, sensors to automatically shut down power stations, and repositioning of blocks of rock. The conclusion is clear: "uncertainties related to risks must be factored in when selecting a site, and operating teams must be trained to manage them", insists Marian Grabowski. But data quality remains a challenge in Africa, where "sometimes there is only one weather station which has maybe 50 years worth of data, but it's also not necessarily located directly where your asset is located. With climate change, historical weather data no longer provides reliable forecasts."

In India, the economic potential of adaptation is 'enormous,' according to Purvi Bhavsar, particularly in three sectors: agriculture (which still provides a livelihood for 60% of the Indian population), infrastructure and health. She adds that, "In agriculture alone, the investment requirement for adaptation will reach USD 200 billion by 2030 – particularly in agritech and weathertech, to provide real-time weather

With climate change, historical weather data no longer provides reliable forecasts.

Marian Grabowski, Head of commercial operations, Serengeti Energy

information to farmers. And to reach the most vulnerable people, community microfinance is the preferred solution: 99% of our customers are women, who are the most exposed and vulnerable section of the population. The efforts and investments required in this particular segment are therefore much greater."

In Brazil, Vinci Compass has opted to design new pylons with raised foundations and it has created the Vinci Climate Change Fund dedicated to sustainable 'greenfield' infrastructure (in other words, those built from scratch). José Guilherme Souza recounts that "With the help of our investors and certain European development finance institutions, we have developed a climate framework to help us assess and rate risk prior to any investment." This framework generates ESG action plans and monitoring indicators. He adds that, "The aim is to conduct better informed negotiations with banks, insurers and contractual counterparties around ESG risks."

Proparco actively encourages this type of anticipation, which can make assets more attractive to buyers, lenders, governments and regulators. Meridiam's rehabilitation of the Transgabonese road illustrates this approach. **Mete Saracoglu, Director of Operations for Africa at Meridiam** believes that "this is the ideal situation – where you are designing a new greenfield infrastructure and have to incorporate physical risks that can occur through climate change." Thanks to a detailed risk assessment, the project incorporated a reinforced drainage system, materials adapted to heat variations and raised sections.

In total, these adjustments represented an additional cost of USD 20 million on a USD 400 million project, or about 5%. But, as Mete Saracoglu points out, "thanks to the intervention of AFD and Proparco, this additional cost was financed by a climate loan on very competitive terms. These additional costs are therefore amortised over the term of the concession, which reduces the risks. It remains to be seen how this will translate in practice over the next 30 years."

Demystifying climate adaptation finance: measuring, tracking, replicating

Banks can integrate transition-related physical risks into lending procedures and portfolio committees. This is the solution chosen by Standard Bank, Africa's largest banking group, with a presence in 21 countries. As **Maureen Harrington, Vice-President of Standard Bank** explains, "We've embedded climate and physical transition risk indicators into our environmental and social policies. But the key is to help our customers respond to risks with credible transition plans."

Standard Bank recognises this massive funding gap – "only 5% of adaptation needs are covered" – and it sees "95% opportunity". The institution has set itself concrete targets: 2.3 billion rand (approximately USD 135 million) has already been lent to 845 farmers to support smart agriculture. Maureen Harrington explains this integrated approach: "We help farmers to earn carbon credits for what they're doing to mitigate their risks and we've set up a carbon trading desk." She also advocates for a stronger role for donors: "We can accept country risk, but how can we mitigate – or who is willing to pay for or bear – the risk associated with growing trees? Donors and public institutions need to come up with solutions for the risks that banks cannot yet absorb."

With the help of our investors and certain European development finance institutions, we have developed a climate framework to help us assess and rate risk prior to any investment.

José Guilherme Souza, Associate director, Vinci Compass

As **Paul Smith, Consultant with the UNEP Finance Initiative (UNEP FI)** notes, "Many private actors are already financing climate resilience without knowing it." He believes this invisibility makes it difficult to identify best practices and assess their scope: "The problem is, if we don't know how to track the flows, how can we identify case studies and, more specifically, how can we replicate them? The UNEP FI, via its working group on adapting the Principles for Responsible Banking, has therefore developed operational guidelines to help banks integrate resilience into their portfolios, focusing on the most vulnerable sectors such as agriculture and real estate. The aim is to "get from risk to value". According to Paul Smith, there are two distinct levers: "resilience of", i.e. protecting existing assets, and "resilience through", which involves financing solutions that enable other players to adapt (irrigation, early warning systems, etc.). He stresses that: "First movers in this field are also those that learn fastest. And this should be a circular process, so start small, but aim high."

Thierry Hébraud contends that when it comes to adaptation, the private sector can be very proactive. "It is the private sector that keeps Africa's economies going. MCB is already present at the heart of the solution by financing agriculture, infrastructure and water management. But Africa only accounts for 4% of emissions despite having 20% of the world's population. It must not be abandoned faced with a crisis it did not create."

Many private actors are already financing climate resilience without knowing it.

Paul Smith, Consultant with the UNEP Finance Initiative (UNEP FI)

Adaptation as sustainable growth driver

Adèle Cadario, Global Lead for Infrastructure and Nature-Based Solutions at the Global Centre on Adaptation, warns that, "The greatest risk is not taking future climate conditions into consideration when you design your project." Out in the field, there are growing numbers of examples of the real cost of inaction and the benefits of resilience. Last year in São Paulo, Brazil, torrential rains brought 25 transport lines to a standstill and plunged entire neighbourhoods into darkness. As **Karina Whalley, Head of Public Sector at AXA Climate**, explains, "We have found that without adaptation measures, by 2050, all of these risks could reduce the net value of assets by 26% in a worst-case scenario. With adaptation, this loss can be reduced to 4%, factoring in the cost of adaptation measures."

Adaptation begins by assessing risks and understanding vulnerabilities based on location, type of assets and activities, and then continues with adjusting existing financial products to meet identified adaptation needs. Adèle Cadario believes that, "It's not just about seeing how the project will impact the environment, but also how future climate conditions and the environment will, in turn, impact assets and their operations." In her view, this approach may require "a higher initial capital outlay – sometimes 10 to 20 per cent higher – but it

secures assets and prevents damage from future climate events." It can even generate value.

This equation is being proven on a large scale in India with Sahyadri Farms, a limited liability company controlled by a cooperative that brings together over 50,000 farmers in the state of Maharashtra (see report on page 57). This company, which is supported by Proparco, has made resilience the core of its model by integrating solutions such as resistant seeds, smart irrigation, waste management and the use of renewable energies, etc. In just a few years, Sahyadri has become a flagship of the Indian economy, with agricultural revenues up 60%, margins doubled and a leading position in exports in spite of extreme climate change. Aside from economic results, smallholder farmers have gained autonomy, income and access to finance, while strengthening their ability to cope with climate hazards.

For Adèle Cadario, the lesson is clear: "Reaching the most vulnerable communities – those already most affected by climate change – is an integral part of the adaptation agenda. This requires financial institutions and intermediaries to deploy specific solutions capable of reaching these most vulnerable people. This is where adaptation and financial inclusion meet."



Interview with

Jean Boissinot, Head of the “Research and Risk Analysis” Directorate at the ACPR

Adapting to climate change: an economic and financial imperative

Faced with the worsening physical impacts of climate change, adaptation is gradually becoming an economic and financial priority. Long perceived as a renunciation of mitigation, it is now becoming indispensable, including for central banks and supervisors.

Why has adaptation become a priority in recent years?

Ten years ago, Mark Carney¹ gave a now famous speech on the ‘tragedy of the horizon’: the tragedy of climate change was that its impact was relatively invisible at the time because it lay beyond the horizon of decision-makers.

At the same time, and up until recently, there was also a reluctance to talk about adaptation. Emphasising the need to prepare our economies

There can be no adaptation without climate stability, and no climate stability without a ‘net zero’ situation.

and societies for climate change was seen as carrying the risk of giving up on fairly ambitious climate action. This reluctance is not entirely unfounded, especially since adaptation is not an alternative to mitigation: there can be no adaptation without climate stability, and no climate stability without a ‘net zero’ situation.

Ten years on, unfortunately but inevitably, the impacts of climate change have become very real, with new records and disasters week in, week out. Globally, the average annual cost of climate damage has increased by more than

JEAN BOISSINOT

Jean Boissinot is an economist and senior public official. He is currently Head of the Research and Risk Analysis Directorate at the *Autorité de contrôle prudentiel et de résolution* (ACPR – Prudential Supervision and Resolution Authority). He was previously Deputy Director, General Financial Stability at the Bank of France (2021-2024) and Secretary General of NGFS (Network for Greening the Financial System, a collaborative network of central banks and supervisory authorities around climate and environmental issues). Before joining the Banque de France in 2018, Jean held various positions at the French Treasury, HM Treasury, INSEE and the OECD.



¹ Mark Carney is an economist, banker and senior civil servant. He is the current Prime Minister of Canada and former Governor of the Bank of England (from 2013 to 2020).

However, before being a question of financing, adaptation is about what to adapt to and why to adapt.

FOCUS ACPR

The *Autorité de contrôle prudentiel et de résolution* (ACPR – Prudential Supervision and Resolution Authority), is charged with authorising and supervising banking and insurance institutions with a view to protecting their customers' interests and safeguarding the stability of the financial system. The ACPR is an administrative authority whose independence in the exercise of its duties and financial autonomy are established by the French Monetary and Financial Code.

NGFS

The Network for Greening the Financial System (NGFS) brings together 170 institutions (central banks and supervisors as well as related financial institutions) from 119 different jurisdictions. It aims to facilitate the integration of climate issues into all central bank activities (monetary policy, financial stability, supervision, etc.). The Banque de France hosts the network's permanent secretariat, which also hosts staff from NGFS members.

30% between the 2005-2015 decade and the 2015-2025 decade. Everyone is affected, but certain less developed economies are on the front line.

These more severe and frequent impacts make the need for adaptation even more urgent. Adaptation – more than mitigation – is perceived as a cost that raises questions about who will bear the burden.

Nevertheless, is adaptation not something that is quite far removed from the mandate of central banks and prudential supervisors?

The financing of adaptation is obviously more of a fiscal issue (even though some projects may be undertaken and financed by private actors). One may claim that adaptation is not a matter for a central bank or a prudential supervisor and this objection was raised by some when the NGFS began working on the subject in 2023. However, before being a question of financing, adaptation is about what to adapt to and why to adapt. The aim is to limit the impacts of climate change. From a macroeconomic and financial perspective, these impacts can be highly material. The damage caused by flooding in Slovenia in 2023 had a direct cost representing over 15% of GDP. Beyond the cost of the damage, these events also have a lasting impact on economic activity: we estimate that the floods in Emilia-Romagna in 2023 reduced economic activity by 5% for more than six months. Impacts of this type are obviously unavoidable in a central bank's macroeconomic analysis or a supervisor's risk assessment. As several recent NGFS reports have clearly shown, physical risks are something that central banks and supervisors must factor into the framework and scope of their mandate (and not despite or beyond this, as certain commentators sometimes claim).

How are emerging and developing countries more directly affected by the physical effects of climate change?

Since 2021, the NGFS has received a large number of applications from institutions in emerging and developing economies. In our discussions with them, it became clear that one key motivating factor for joining the network was their experience of accelerating climate change. These events receive less attention than other climate events because their monetary cost is less spectacular, but they are no less dramatic. The cost of flood damage in Central and West Africa in September 2014 amounted to a few hundred million pounds at worst, but affected more than 4 million people, including 1.5 million displaced persons. For often informal economies with very low insurance coverage and a high dependence on the agricultural sector, climate change has a direct and disproportionate impact on economic activity and household incomes. Moreover, rapid and spontaneous rather than planned urban development makes some cities highly vulnerable to extreme weather events.

The subject of insurance is often linked to that of uninsurability. Has this area been the subject of specific work or reflection?

The NGFS's work on physical risks and adaptation draws particularly on certain members who are responsible for supervising insurance organisations. More generally, the IAIS (the Basel Committee's insurance counterpart) is also active in these areas. Climate change presents a specific challenge to the insurance sector, which can provide a response to societal management of physical risks, but also finds itself confronted with situations where insurance becomes impossible given the increasing frequency and severity of climate hazards.

This phenomenon is particularly visible in the United States, where insurance premiums in the most exposed counties have increased by more than 20% between 2020 and 2023 (twice as fast as the average) and now amount to tens of thousands of dollars per year. Indeed, these rate increases are not even enough, and many insurers have announced that they are withdrawing from certain regions. While this

situation is extreme (developments in France and Europe are much less dramatic), it is obvious that the insurability of climate risks can no longer be taken for granted.

Nevertheless, the work of the NGFS suggests that the development of insurance in emerging and developing economies remains a relevant objective and provides a better understanding of how the organisation of the insurance market can help preserve the insurability of climate risks. It has also illustrated the value of certain approaches (e.g. parametric insurance) in making insurance more effective and developing it more rapidly in jurisdictions where coverage is low. However, it has also highlighted the fact that insurance cannot ignore the dramatic increase in risk, and that adaptation is an essential dimension of preserving insurability.

Climate change presents a specific challenge to the insurance sector, which can provide a response to societal management of physical risks.

In India, vineyards faced with climate change

In the Indian state of Maharashtra, the Sahyadri Farms (a farmer collective owned company) – supported by Proparco – has managed to build a network of 50,000 smallholder farmers and become the country's largest exporter of fresh grapes and other crops. It harnesses technological innovation and agricultural research to provide access to varieties that are more resistant to climate change.

Located in the rural district of Nashik – a five-hour drive from Mumbai, India's economic hub – the headquarters of Sahyadri Farms is an impressive sight. With its “neat roads lined with flower beds”, as described by Le Figaro French newspaper which visited the site in late 2022, this campus employing more than 6,000 people, set amidst vineyards and fruit plantations, is an impressive site for visitors.

Less than 15 years ago, there was nothing around here but fields and a few cultivated patches. Then, in 2011, a handful of farmers – around ten initially – got together to create Sahyadri Farms, a big project run solely by... smallholder producers.

A bold and winning strategy. Sahyadri Farms is currently India's biggest exporter of fresh grapes¹ and processed fruit (such as tomatoes, mangoes, sweet corns and cashew nuts). Some over 50,000 farmers – spread over 50 kilometres – supply Sahyadri Farms with fresh produce, while 21,500 are directly owned by the organisation.

A complete ecosystem, from field to table

“Last year, we produced and processed more than 250,000 tonnes of fresh produce, both for export and the domestic market. We're targeting 300,000 tonnes this year”, explained in 2023 Santosh Deoram Watpade, the cooperative's Chief Financial Officer. Sahyadri Farms partners its farmers, from crop selection to farming practices, including the inputs they use and how they harvest and sell their produce. The company is now fully tech-enabled and integrated into the value chain of 8 horticulture crops, from pre-harvest and post-harvest (i.e., sorting/packing/processing of fruit and vegetables), to distributing to consumers in both the Indian and international markets (B2B and B2C).

Sahyadri Farms is India's

No.1
exporter
of fresh grapes

Over
50,000
smallholders
keep the
cooperative supplied

21,500
of these farmers
are shareholders in
Sahyadri Farms

See
Our video report on
Sahyadri Farms



¹ Famous for its vineyards, the Nashik region is home to Sula Vineyards, a leading producer of Indian wine.



Less than

1

hectare

Over 95% of the farmers who work for Sahyadri Farms or are associated with the cooperative are smallholders growing less than one hectare of vines or other crops.

Objective: zero net emissions

In 2022, Proparco co-invested in Sahyadri Farms, alongside Incofin Investment Management, FMO and Korys, for a total amount of 310 crore rupees (almost €35 million) and again in 2024 with an investment of 390 crore rupees (approximately 40 million euros). “This investment will bolster our export markets for all of our crops and increase our capacity”, explains Santosh Deoram Watpade. The investment has also enabled the cooperative to finance its new biogas plant, with a capacity of 1.6 megawatts of electricity based on a process of fermentation of organic matter. “Our aim with this new plant is to achieve carbon neutrality (i.e., zero net emissions),” adds Rupesh Khiste, Head of R&D and Projects at Sahyadri Farms.

For Sachin Kadam, union is strength

“Here, every voice counts”. On the path down to his 12 hectares of vines, just below his house, Sachin Kadam is adamant: “One farmer, one vote. That’s the principle behind the Sahyadri Farms project”. This farmer, who specialises in growing fresh grapes, joined the cooperative a few years ago. “All of the farmer-members together decided on the major focuses and strategic choices for guiding the future of the cooperative. That’s what constitutes the strength of this project.”

The benefits for his farm have been quite spectacular: Sachin has increased the areas under

vines five-fold and now exports 80% of production to Asia and Europe. He has also benefited from technological progress that he could never have accessed on his own. “The agricultural expertise of Sahyadri Farms teams and their innovative approaches have revolutionised my practices,” he readily admits. “Before, I had to battle the bad weather that was ravaging my crops.” Since then, Sachin has grown Thompson



Vilas Shinde
Founder and CEO
of Sahyadri Farms

For a long time, enterprise in rural India – where 60% of the population lives – was non-existent. But over the last ten years or so, the situation has changed: attitudes are evolving and projects are proliferating although access to capital remains a major obstacle.



18%

of GDP

India is the world’s second largest agricultural producer. Agriculture employs over 40% of the working population and accounts for 18% of the country’s gross domestic product.

grapes - a hardier, seedless variety from California - upgraded his vines and received regular support from agricultural engineers.

This cooperative-based system means that the farmers involved in the venture - most of whom grow less than one hectare - receive regular, predictable incomes. This is vital, given that 80% of people living below the poverty line in India are small farmers². “The Sahyadri Farms project protects its members. We can estimate our income in advance, invest and even expand”, explains Sachin, who recently had a new house built, as well as a greenhouse that allows him to dry some of his grapes and other crops (especially tomatoes).



² Source: International Fund for Agricultural Development (IFAD) - India (ifad.org)

🗣️ Interview with

Santosh Deoram Watpade, Chief Financial Officer (CFO)
of Sahyadri Farms

Sahyadri Farms, trailblazes with agricultural business and finance model

Farmer-owned Sahyadri Farms is building a resilient, profitable, and climate-aligned horticulture model. This entails leadership and collaborative planning, structuring and board monitoring.

How does Sahyadri Farms and the cooperative, its holding shareholder, integrate environmental criteria into its investment decisions?

Sahyadri Farms integrates environmental sustainability across its entire value chain pre-to post-harvest, impacting over 30,000 farmers, including 21,500 shareholder farmers. Its agronomy team works with farmers to promote climate-smart practices through soil testing, bio-inputs, certified nurseries, and resilient crop varieties. These services are extended beyond shareholders via Farmer Facilitation Centres, alongside access to irrigation systems, satellite advisories, and green finance.

In post-harvest operations, we invest in solar power plants, micro-processing units, extraction facilities, and circular economy initiatives to maximize resource efficiency and minimize waste. All major investment decisions are reviewed and

SANTOSH DEORAM WATPADE

Santosh Deoram Watpade, CFO of Sahyadri Farms, is a seasoned finance leader with over 16 years of expertise in corporate finance, taxation, treasury, ERP implementation, and strategic business planning. At Sahyadri, he secured a €15 million loan from FMO, and has led corporate restructuring. He has successfully raised 310 crores (around €35 million) in Series A funding and another 390 crores (around €44 million) in Series B funding, making Sahyadri the first farmer-owned entity in India to secure major foreign direct investment rounds. Recently he was honoured with ET CFO's Emerging CFO of the Year, from The Economic Times CFO Awards, for his trailblazing contributions to agri-finance innovation.



Our agronomy team works with farmers to promote climate-smart practices through soil testing, bio-inputs, certified nurseries, and resilient crop varieties.

approved by the respective boards of Sahyadri Farms Post Harvest Care Limited and Sahyadri Farmers Producer Company Limited, which comprise both institutional and farmer representatives. These boards ensure that every investment aligns with both environmental impact specifications and long-term business value. Our mission is to build a resilient, profitable, and climate-aligned horticulture model, fully owned and driven by farmers.

What tools or indicators do you use to measure the climate impact of your new projects?

Sahyadri Farms has developed a structured approach to monitoring and evaluating the climate impacts of its projects. This process is controlled by the ESG team, which is led by me and supported by a dedicated team of three professionals. We operate under a formal Integrated Management System (IMS) Policy, which guides the collection and analysis of environmental data.

Our measurement framework combines digital tools with on-the-ground physical observations to monitor resource efficiency, carbon footprint, water usage, and waste reduction. These data points are systematically tracked and contribute to our internal sustainability dashboards.

We also publish an Annual ESG Report, which transparently outlines the environmental and social impacts of our operations, including climate-related performance. In addition, several third-party assessments are periodically conducted by agencies appointed by our investors. These further validate and inform our climate impact strategy. Looking ahead, we are strengthening our digital systems to enable real-time monitoring and traceable climate impact credits across all new projects.

What strategic partnerships are you considering to support sustainable agricultural practices in your supply chain?

Sahyadri Farms strongly believes that strategic partnerships are key to enabling sustainable agricultural practices across our supply chain. As a cooperative-led model, we actively collaborate with organizations that support higher yields, better quality, reduced input costs, and improved market access for our farmers. We are working with Hindustan Unilever Foundation to implement soil regenerative practices with 3,000 farmers, and with EnviroAlgae to establish a microbiology-based processing unit for soil and crop health. Climate risk assessments are conducted in partnership with Axa Climate (see also the interview with Romain Cocault, from Axa Climate p. 63), while PwC supports us in carbon footprint analysis and climate neutrality planning.

We operate under a formal Integrated Management System (IMS) Policy, which guides the collection and analysis of environmental data.

We have partnered with leading global breeders for access to climate-resilient varieties and are collaborating with both domestic and international agricultural universities on research. With GIZ, we are piloting agro-photovoltaic systems to integrate solar energy in farming. Additionally, we work with Fairtrade, Global GAP, and the British Retail Consortium (BRC) to ensure traceability, certification, and premium market access for our farmer community.

Innovating to adapt to climate change

In the village of Kone – over an hour’s drive from the district of Nashik – Bashkar Vishnu Kamble, a member of Sahyadri Farms, grows almost 10 hectares of Thompson vines, a variety long renowned for its ability to cope with bad weather.

But with climate change – which in these latitudes takes the form of a violent rainy season and a scorching summer – Bashkar has to adapt. Landslides, floods, heatwaves,

Landslides, floods, heatwaves, cyclones, droughts and dust storms... The Indian subcontinent is one of the world’s most disaster-prone regions.

cyclones, droughts and dust storms... The Indian subcontinent is one of the world’s most disaster-prone regions. In an attempt to cope with these natural disasters and anticipate better crop yields, Bashkar has planted two hectares of a new red grape variety, ARD36.

“It’s a crisp, sweet table grape that copes especially well with extreme weather conditions and is also very popular in export markets”, explains Pankaj Nathe, who heads up the agronomic research team at Sahyadri Farms. At the heart of the Cooperative’s campus, this agricultural engineer has developed this new-generation vine on around one hectare of land, as well as other red and white grape varieties, which he monitors like a saucepan that can boil over any time. “We test them here in real conditions. Every day, we track the development of the grapes and their resistance to rain, heatwaves, disease and so on. This is vital if we are to anticipate the effects of climate change and explore new markets.”

To help with soil regeneration, Bashkar will also be planting hedges at Kone. “Rising temperatures are disrupting climate conditions and upsetting the natural balance”, notes the farmer. “We all need to do our bit.”

Bashkar Vishnu Kamble, farmer and member of Sahyadri Farms



 Interview with
Romain Cocault, Head of the AXA Climate
Agri-Transition Team

AXA Climate: modelling climate risks, adapting crops

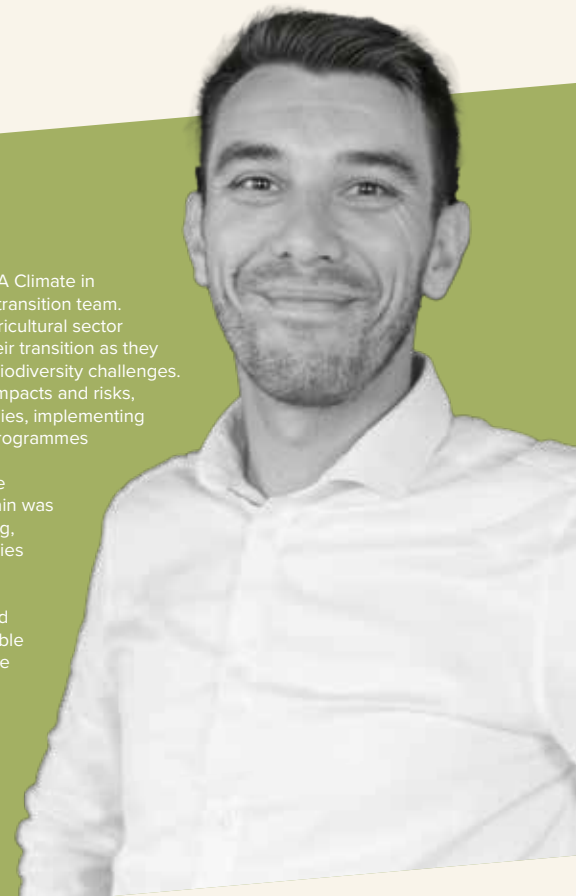
AXA Climate has used its modelling tools and agronomic expertise to identify the impacts of climate change on crops at Sahyadri Farms and propose ways of adapting.

What methodology did you use to assess climate impacts on grape and tomato crops in the region concerned?

In order to model climate impacts on these two crops in the Nashik region, AXA Climate teams combined agronomic with climate modelling expertise. First we conducted an analysis of the climate needs and sensitivities of the varieties used by Sahyadri, enabling us to select the most relevant metrics and thresholds for each variety studied. This selection, developed in the lab based on agronomic research and AXA Climate expertise, was subsequently discussed, finessed and validated by Sahyadri’s teams. We then fed this data into climate modelling applications developed by AXA Climate scientific teams. These are based on the latest generation of international climate models (CMIP6) and can be used to forecast each agronomic indicator for 2030 and 2050 based on two IPCC scenarios (SSP2-4.5 and SSP5-8.5).

ROMAIN COCAULT

Romain Cocault joined AXA Climate in 2022 to head up the Agri-transition team. He provides support to agricultural sector players by accelerating their transition as they grapple with climate and biodiversity challenges. This involves quantifying impacts and risks, developing climate strategies, implementing regenerative agriculture programmes and developing transition insurance solutions. Before joining AXA Climate, Romain was a manager at Ernst & Young, where he advised companies in the retail, agri-food and luxury products sectors on devising, implementing and reporting on their sustainable development strategies. He has also worked on these issues within large groups, including Carrefour, IKEA and Danone.



Sahyadri has already begun to work on the study's recommendations, particularly in terms of variety selection, and 95% of plots will switch to more resistant varieties by 2027.

What are the main climate threats identified for these two crops in the short, medium and long term?

The study highlighted the main impacts of climate change on these sectors in the Nashik region. The risks associated with heavy rainfall will increase: climate change will cause the monsoon season to become shorter and more intense and to move to later in the year, posing a risk during the flowering season. The risk of flooding will therefore increase. Conversely, the risk of drought will be greater during the dry season, which will impact crops. Lastly, increased humidity and higher temperatures will make the development of mildew more likely.

FOCUS AXA CLIMATE

AXA Climate, a subsidiary of AXA Group specialising in climate change adaptation and transition, operates in the public sector and in agri-food, industry and finance providing parametric insurance solutions, consulting services, online training and a range of digital climate forecasting tools. AXA Climate uses science and data to help businesses and public sector players to deal with major environmental challenges, enabling them to adopt concrete adaptation and mitigation strategies specific to their regions and realities.

How are these risks likely to affect crop yields, quality and profitability for smallholder producers affiliated to Sahyadri?

First, yields will be affected, to a greater or lesser degree depending on the resistance of the varieties used by Sahyadri. Fruit quality will also be affected, particularly due to more intense heatwaves. Lastly, climate change will also impact producers and their work through reduced access to fields due to flooding, the worrying effects of heat stress on producers' health, etc.

Does the study include specific adaptation recommendations for Sahyadri Farms?

Yes, several adaptation recommendations were drawn up in liaison with Sahyadri teams. Three key measures were prioritised. Selecting the best varieties is essential. This had already been initiated by Sahyadri and the use of the most resistant varieties was identified as a priority measure. It is also important to deploy farming practices that enhance resilience, prioritising less tillage and the use of cover crops. Lastly, precision irrigation systems need to be deployed.

How do you assess Sahyadri's current capacity to implement these recommendations?

Sahyadri has already begun to work on the study's recommendations, particularly in terms of variety selection, and 95% of plots will switch to more resistant varieties by 2027. The cooperative has also begun to deploy drip irrigation systems on most of its plots (95%).



Key findings of the AXA Climate study at Sahyadri Farms



Key takeaways

- Climate risk is **already impacting production**, and this risk will only increase between now and 2050.
- **The main risks** will be tied to changes in monsoon patterns, drought and temperatures, impacting yields and quality.
- Sahyadri Farms has already implemented **adaptation practices**.



Points to be monitored

- Deployment of these practices will be **key to Sahyadri Farms' resilience** (variety selection, precision irrigation systems and adaptation of farming practices).
- Aside from risks to crops, climate change will also impact **the organisation of production** (access in the event of flooding) and **producer health** (heat stress).
- **Risk sharing through financing practices** and **the provision of technical support** will be essential components in facilitating the transition for farmers.

Interview with

Rachael Antwi, Group Head of Sustainability at Ecobank

Where climate risk meets opportunity: how Ecobank is financing Africa's future

Most banks treat climate as a problem to manage. Ecobank treats it as intelligence to leverage. Across 35 African markets, the banking giant is embedding climate data into every credit decision, sovereign assessment, and investment choice—not to tick compliance boxes, but to identify where capital can work hardest. The result is a new breed of banking: one that profits from resilience, scales with sustainability, and turns Africa's climate vulnerabilities into competitive advantages.

How is Ecobank embedding sustainability and climate strategy in its core business model?

We're fundamentally reframing sustainability—moving it from a compliance checkbox to a strategic driver of how we assess risk and deploy capital across Africa. This isn't about layering climate considerations on top of traditional banking; we're redesigning how banking operates. We're embedding climate risks in every credit, sectoral, and sovereign assessment we make. Our lending decisions actively reflect these risks, ensuring capital flows toward more resilient sectors and projects. We're architecting Group-wide systems and strategies underpinned by climate pathways, supported by technology that enables delivery at scale.

Our digital infrastructure allows us to screen climate transactions and conduct risk assessments automatically, while providing science-based training and developing climate-adjusted

financial products. But sustainability isn't just being embedded in our frameworks—it's being woven into daily decision-making across all levels of the organization.

Beyond our internal operations, we're playing a regional leadership role across West and Central Africa, supporting large-scale climate finance transactions, and mobilizing blended capital aligned with Africa's development goals. Ultimately, we're rewiring how financial systems operate in Africa—with climate driving both smarter risk management and creating entirely new sources of value.

How has Ecobank integrated this reframing of sustainability and climate strategy into its corporate governance, including engaging teams?

The key is that climate factors aren't isolated within the Sustainability function—they're integrated into credit, risk, and business decisions across our pan-African network. This represents a fundamental shift in how African banks operate. We've hardwired climate accountability directly into our governance structure, starting at the top. Our Board's Committee for Sustainability meets quarterly with formal oversight of climate risk and sustainability strategy, reviewing structured reports on portfolio exposures, sustainability-linked targets, and regulatory compliance metrics.

At the executive level, climate responsibilities are mainstreamed across all functions—not siloed within sustainability. We've developed a comprehensive suite of Group-wide policies, including our updated Climate Strategy and Exclusion Framework, that clearly define ownership, decision rights, and escalation pathways. We've directly linked these frameworks to operational processes: 100% of our transactions above \$5 million now undergo climate screening, while credit committees and lending decisions systematically incorporate climate risk assessments. We track performance through specific KPIs—including climate risk screening ratios, green portfolio targets, and transition finance volumes—with real-time visibility through central dashboards that senior management reviews monthly.

100% of our transactions above \$5 million now undergo climate screening, while credit committees and lending decisions systematically incorporate climate risk assessments.

This has unleashed our ability to reduce approval times for green transactions by 30% while mobilizing climate-aligned capital faster and structuring more resilient transactions throughout our African operations.

What concrete methods does Ecobank deploy to identify, assess, and mitigate climate risks in its portfolio and operations?

We've built a multi-tiered risk assessment framework that distinguishes between physical and transition risk drivers across our entire portfolio. This starts at origination with transaction screening, includes sector-specific environmental and social risk scoring, and integrates into our evolving risk models.

RACHAEL ANTWI

Rachael Antwi is Group Head of Sustainability at Ecobank, where she leads sustainability strategy, sustainable finance governance, and environmental and social risk oversight across 34 African countries. She advises the Board, Group CEO, Executive Management, and country teams on sustainability strategy and related matters, and has positioned Ecobank as a leader in West and Central Africa and gateway for climate finance. A chartered scientist and chartered environmentalist, she holds a Master of Science degree from the University of Oxford and is currently pursuing an Executive MBA at Oxford. She also serves as Regional Chair for West Africa at the International Capital Market Association (ICMA) and is a recognised leader in Africa.





FOCUS ECOBANK

Ecobank is committed to promoting economic development and financial integration across sub-Saharan Africa. The first Ecobank affiliate opened in Togo in October 1985. Today, Ecobank stands as the leading private pan-African banking group, with an unrivalled presence in 34 African countries, as well as in France, the UK, the UAE, and China. As of 2024, the Group reported total assets of \$27.9 billion and total equity of \$1.79 billion. Ecobank is listed on the stock exchanges in Lagos, Accra, and Abidjan (BRVM).

Climate scenario analyses are being incorporated into our sovereign and sector risk models. We're running early stress tests—1.5°C and 4°C scenarios—for energy and agri-finance in West and Central Africa to identify vulnerabilities around fuel subsidy reforms, carbon pricing, and drought cycles.

Our climate risk dashboards and heatmaps allow risk managers and business teams to visualize exposure and track early warning indicators in real-time. For mitigation, we're linking transactions to sustainability outcomes that reflect borrower-level climate exposure. Recent deals in Ghana, for example, include pricing incentives for emissions reductions and gender outcomes—aligning financial risk with impact metrics. This integrated approach enables us to proactively manage emerging risks and reduce credit losses, thus expanding our sustainable finance portfolio.

What innovative tools or approaches are you using to overcome challenges in implementing the climate action plan?

We're leveraging digital innovation to create operational efficiencies from climate intelligence. At the core is our proprietary ECO Framework for Climate Alignment (EFCA), which integrates climate vulnerability data into our risk models with comprehensive scenario analyses.

Our transaction screening is now fully automated with embedded climate parameters, while our climate-adjusted pricing models are being developed to simulate credit risk under different scenarios, demonstrating the clear value of early climate action to clients.

We're also co-developing climate-linked insurance and finance products for agriculture and other vulnerable sectors, using granular climate risk data to inform design.

Looking ahead, we're deploying AI-driven tools for climate scenario modeling and automated disclosure across our operations. These innovations are accelerating our shift from commitment to execution, improving credit quality, de-risking portfolios, and expanding access to climate-aligned finance.

Ecobank received from Proparco and other DFIs a sustainability-linked loan, a first for the region. Is this offering consolidating the bank's climate objectives within its strategy, and are benefits being seen?

Absolutely. In 2023, we closed the first sustainability-linked loan for a financial institution in sub-Saharan Africa—a €200 million transaction that's proven to be both a financial and institutional game-changer.

The deal, arranged by Proparco and a consortium of DFIs, directly ties our interest rate margins to independently verified climate KPIs. But equally important is the accompanying technical assistance program that's helping us embed climate governance reforms across the entire bank.

The structure has created concrete accountability. We've committed to publishing a comprehensive Group-wide Climate Disclosure Report covering green lending, carbon-intensive exposures, and physical climate risk assessments. We're also finalizing our full Climate Strategy, including financed emissions targets, decarbonization pathways for high-emitting sectors, and an exclusion policy for thermal coal.

The benefits are already visible. This framework has reinforced client trust, deepened our engagement with both sovereigns and corporates, and positioned us to significantly expand climate-aligned lending. Perhaps most importantly, it's created a replicable model for other African banks—showing how performance-linked finance can drive real institutional reform tailored to our continent's banking context

The Harambee Way — Ecobank's climate roadmap

The Harambee Way is Ecobank's climate philosophy — our commitment to delivering a just, inclusive, and science-aligned transition across the African continent. It brings together three core pillars: climate risk integration, climate finance mobilization, and sustainability stewardship. "The Harambee Way is how we approach climate — not just as a risk to manage or capital to deploy, but as a shared journey, explains Rachael Antwi.

"We're embedding transition into the architecture of African banking — from sovereign risk to loan structuring — powered by our ECO Framework for Climate Alignment."

Harambee, a Swahili word meaning "all pull together", symbolises unity, collective effort, and progress. It holds deep cultural significance across East Africa, particularly in Kenya, and reflects Ecobank's identity as a pan-African institution.

What other specific initiatives or products is Ecobank developing to significantly increase its climate-related financing?

We're moving beyond policy to implementation with our Sustainable Finance Framework, which directly links climate objectives—emissions reduction, renewable energy—with our lending and investment decisions. Our most notable initiative is in Ghana, where our Green Climate Fund accreditation enabled us to launch the Accelerating Solar Action Programme (ASAP)—a

\$31 million financing facility for photovoltaic systems. We're targeting households, agricultural cooperatives, and SMEs, expanding access to clean energy while supporting job creation, local solar value chains, and climate resilience.

What makes ASAP significant is that it's delivering at scale where many clean energy transitions stall at the planning stage. We're accelerating diagnostics across our network to identify similar scalable opportunities in markets where national policies and sectoral demand align with our sustainable finance strategy.

Ecobank's five-step climate action plan

- 1

Set the ambition

Define clear, time-bound climate goals, aligned with international frameworks (e.g. Paris Agreement, NGFS, SBTi).
- 2

Build the intelligence base

Establish climate data systems – financed emissions baselines, scenario analyses, and physical risk mapping – across sovereign, corporate, and retail portfolios.
- 3

Integrate into governance and risk

Embed climate into credit, enterprise risk, and capital allocation frameworks. Ensure accountability at Board, Executive Committee, and operational levels.
- 4

Mobilise climate-aligned capital

Develop sustainable finance instruments, internal taxonomies, and incentive mechanisms to shift financing toward low-carbon and climate-resilient sectors.
- 5

Track, report, and adapt

Implement systems for climate-related disclosure (e.g. Task Force on Climate Related Financial Disclosures, IFRS S2), impact measurement, and feedback loops to refine strategy and meet stakeholder expectations.

Proparco's partnership has been transformational—it's helped us turn climate ambition into concrete action. Their technical assistance has enabled us to develop a comprehensive Group-wide Climate Strategy, enhance our credit risk assessment tools, and integrate climate considerations directly into our product design and investment decisions.

These initiatives fulfill our ESG obligations while opening new revenue channels in decentralized energy systems, SME finance, and resilience-focused lending. By aligning our balance sheet with climate outcomes, we're improving our competitiveness while building Africa's green finance ecosystem.

How does the technical assistance provided by Proparco and its consultants help strengthen your internal capacities and accelerate climate actions?

Proparco's partnership has been transformational—it's helped us turn climate ambition into concrete action. Their technical assistance has enabled us to develop a comprehensive Group-wide Climate Strategy, enhance our credit risk assessment tools, and integrate climate considerations directly into our product design and investment decisions.

The training and expertise they've provided has been particularly valuable. Our teams across our network now have the skills to properly assess environmental risks and identify emerging green finance opportunities—capabilities that simply didn't exist at this scale before.

The multiplier effect is clear: these internal gains are enabling us to originate green transactions at scale, align our capital flows with national and regional climate objectives, and help shape Africa's broader climate finance landscape. What started as technical support has become institutional transformation, positioning Ecobank to lead capital mobilization for an inclusive climate transition.

Are there challenges in recruiting individuals with sustainability and climate-related skills?

Absolutely. Africa has a critical shortage of climate professionals who combine academic training with practical experience. For Ecobank, this is especially challenging given our need for multilingual specialists across 34 markets in English, French, and Portuguese-speaking countries.

Demand has intensified as climate becomes central to business strategy while the talent pipeline remains thin. We need professionals

who can navigate diverse regulatory environments and deliver sophisticated sustainability solutions at scale.

So, we've adopted a decentralized approach, building capability internally through secondments, mentorships, technical training, and real-time learning via live transactions with business units and development finance institutions. All key staff are trained in climate risk and finance to ensure consistent application of our policies. While the external talent shortage remains a significant challenge, we're not waiting for the market to catch up—we're investing in our people to build the expertise we need.



In Sub-Saharan Africa, the ARAF fund is strengthening **the climate resilience of smallholder farmers**

Financed by several partners and development finance institutions – including Proparco, *via* AFD Group's FISEA+ facility –, the ARAF fund targets the issues of food security and climate change. It invests in start-ups offering innovative solutions to improve the conditions and climate resilience of smallholder farmers in East and West Africa.

See
Our video report
on the ARAF
fund



Tamer El-Raghy's assessment is clear. "Climate change is wreaking havoc here," warns from Nairobi the Managing Director of the equity fund ARAF (Acumen Resilient Agriculture Fund) which operates in several African countries affected by climate change. Intense floods followed by long periods of drought which degrade cultivated areas... "These disruptions weigh especially on the most vulnerable – women, children – and small-scale farmers who have very few means to protect and boost their crops." This high exposure to these climate events consequently makes the performance of the agriculture sector in Kenya – and everywhere else in Sub-Saharan Africa – highly unstable, points out this expert who graduated from universities in Cairo and New York. "Indeed, over half of the people living in poverty are smallholder farmers. Yet they provide 80% of the food consumed in the region." This illustrates how climate change, which hundreds of thousands of African farmers are facing, weakens local economies and exacerbates food security.

30% of beneficiaries below the poverty line

To address this situation, the ARAF fund, which was launched in 2020 by Acumen Capital-Partners – a subsidiary of Acumen, an organization specialized in supporting social enterprises in Africa –, invests in local start-ups

offering innovative solutions to smallholder farmers. The objective is to build an ecosystem that will give farmers in East and West Africa the means to increase their incomes and improve their living conditions and resilience to climate change. This adaptation requires diversifying crops (corn, vegetables, etc.), improving irrigation and facilitating access to the most climate-resistant seeds and species. "We're currently investing in 13 start-ups!" says Tamer El-Raghy. "We target smallholder farmers where >30% of whom live below the poverty line.² Through its action, ARAF seeks to reduce poverty, strengthen climate resilience and demonstrate the impact of investment in resilient agriculture." ARAF is supported by the Green Climate Fund (GCF)³ – see interview p. 78 – and is financed with \$58 million from several partners and development finance institutions, including Proparco which took a \$5 million stake in 2021, through FISEA+, the AFD Group's facility implemented by Proparco under the Choose Africa initiative.

Several crops every year

On the ground, the ARAF teams regularly measure the impacts⁴ on the living standards of farmers and their work. "The activities of the start-ups we're supporting have directly impacted more than 2 million farmers in East and West Africa; 90% of which reported an increase in their income and an improvement in their quality of life," says the fund's MD. The



Tamer El-Raghy
Managing Director of the
Acumen Resilient Agriculture
Fund (ARAF)

Intense floods followed by long periods of drought which degrade cultivated areas are disruptions that weigh especially on the most vulnerable – women, children – and small-scale farmers who have very few means to protect and boost their crops.

¹ In December 2024, the portfolio of the ARAF fund was composed of 13 start-ups with operations in East and West Africa.

² The World Bank sets the poverty line at \$3.20 per day in middle- and low-income countries.

³ The Green Climate Fund has contributed \$23 million to ARAF via a first loss guarantee facility.

⁴ These impacts are evaluated on the basis of interviews carried out by a third party.



Kenyan start-up SunCulture, which supplies solar irrigation systems to its clients (see article p. 76), estimates that on average there has been > 100% increase in the disposable income of the farmers who benefit from its innovations.

This is the case of Josephine Waweru, a farmer specialized in coffee growing. She is based in Kirinyaga County, in central Kenya, and has installed a solar pump system supplied by SunCulture. "I used to use a really expensive and polluting gasoline system. I've also been able to diversify my crops to cope better with the risks related to climate change," says the farmer. This observation is also shared by Jamleck Gichovi Karuri, who is based in another region in Kenya badly affected by the prolonged droughts. Thanks to a solar water pump system supplied by SunCulture, this breeder and farmer can now feed her livestock and harvest several crops every year.

Technological advances for the benefit of agriculture

"With climate change, rainfall in Sub-Saharan Africa has declined by over 100 mm a year since the mid-1970s," says Samir Ibrahim, cofounder of SunCulture. As a result, Africa, which has 65% of the world's uncultivated arable land, has an annual food imports bill of \$35 billion. Yet with the technological advances in agriculture, the continent would be able to feed its population without the slightest problem. "For this to happen, these advances must focus in priority on helping smallholder farmers who are the most vulnerable to climate change," says Tamer El-Raghy. "It's both a need and an emergency."

The objective of ARAF is to build an ecosystem that will give farmers in East and West Africa the means to increase their incomes and improve their living conditions and resilience to climate change.

FOCUS ARAF

ARAF (Acumen Resilient Agriculture Fund) is a \$58 million investment fund managed by Acumen, an American NGO specialized in supporting social enterprises offering goods and services to disadvantaged people. Acumen has been in operation for 25 years and has invested over \$137 million in 139 social enterprises which have served some 263 million beneficiaries. With the ARAF fund, Acumen targets the issues of food security and climate change, which are vital to African development.

Adapting to climate change: how 4 African start-ups go about it

Farmerline, FarmWorks, SunCulture and East Africa Foods. These agricultural start-ups, which are financed by the ARAF fund, use technological innovation to help smallholder farmers adapt to climate change. All their managers agree that there is an emergency. “For farmers in Kenya, climate change is no longer a future threat—it’s a daily disruption”, says Yi Li, CEO and cofunder of FarmWorks, a Kenyan start-up whose objective is to create a network of medium-sized farms (10 to 40 hectares) based on a rational farming model which improves adaptation to climate change.

“Our response is grounded in pragmatism: we’re building a climate-resilient supply chain, giving farmers direct income, and helping over 3,000 smallholders to boost their yields while rebuilding soil health. Adaptation isn’t optional. It’s the only path to economic stability and food security”.

The agri-tech Farmerline operates in Côte d’Ivoire and Ghana. It was set up in 2013 and supplies agricultural inputs adapted to climate change, as well as training services tailored to the needs of local farmers. “A report of 60 Decibels states that farmers in the South are on the front line of the climate crisis. 70% are faced with a myriad of climate risks, such as the lack or unpredictability of rainfall, extreme heat, flooding and the increase in parasites or agricultural diseases,” says Alloysius Attah, cofounder of Farmerline.

For Samir Ibrahim, cofounder of SunCulture, making African farmers resilient to climate change necessarily requires improving access to water. “96% of cultivated land in Africa is watered with rainwater and is not irrigated. The situation is getting worse and causing sharp declines in yields.” The Kenyan start-up, which also operates in Côte d’Ivoire, Ethiopia, Togo and Uganda, offers solutions using off-grid solar technology. This provides a reliable access to water, irrigation, lighting and mobile phone charging.



Samir Ibrahim
Cofounder of
SunCulture

96% of cultivated land in Africa is watered with rainwater and is not irrigated. The situation is getting worse and causing sharp declines in yields.

“We support the climate resilience of smallholder farmers. We also improve their food security and increase their economic empowerment.”

For Elia Timotheo, founder & CEO of East Africa Foods, “technology is how we scale impact without compromising on efficiency or quality.” By aggregating real-time and projected orders from over 9,000 retailers, restaurants, and institutions across East Africa, this startup accurately predicts demand and aligns it with harvests pre-booked just a day in advance from a network of more than 27,000 smallholder farmers. “At East Africa Foods, we’re not just moving foods”, says Elia Timotheo. “We’re building a smarter, more inclusive supply chain that connects thousands of smallholder farmers to reliable markets, and ensures urban retailers get fresh produce on time, every time”.



The impact of the ARAF fund on farmer well-being



90%
reported **increased**
income



92%
improved **way of farming**



67%
reported first time **access of**
company’s products



89%
reported **increased**
yields



91%
reported **improved**
quality of life

Source: ARAF fund (2025)

Interview with

Kavita Sinha, Director of the Private Sector Facility at the Green Climate Fund

How Green Climate Fund is using ARAF funding to tackle climate change

What is Green Climate Fund's (GCF) global strategy?

It aligns with the Fund's "50by30" vision, which will enable the GCF to manage USD 50 billion by 2030, and empower it to catalyse climate action for developing countries. Its Readiness Programme will empower developing countries to translate their Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs) and Long-term Climate Strategies (LTS) into climate investments and programming. The Fund will mobilise the private sector to unlock the financial flows needed for climate action. Further, it will

improve access to finance for the communities who need it most. To protect the most vulnerable, adaptation and resilience needs will be addressed immediately, by expanding climate information and providing early warning systems.

How does GCF support the ARAF fund?

In 2018, GCF provided a catalytic anchor investment of USD 23 million to ARAF I – a fund with a target size of USD 50 million – by de-risking investment through a first-loss capital. As the world's first agriculture fund focused on climate adaptation, ARAF I attracted strong investor interest, closing oversubscribed by USD 8 million above its original target – demonstrating investor appetite for climate adaptation and agriculture-focused investment themes and the risk mitigation enabled by GCF's participation. GCF provided USD 3 million in grant funding towards a USD 6 million technical assistance facility, to help investees build climate resilience. The grant has raised awareness, steer crop choices in line with climate forecast, and promote adaptation tools, techniques, and income stream diversification. To date, ARAF 1 has impacted 11 million beneficiaries, including 2.2 million smallholder farmers and 8.8 million lives – approximately half of whom live below the poverty line.

Building on the strong track record and investor interest generated by ARAF I, GCF is deepening its partnership with Acumen by anchoring the new successor fund with a USD 30 million equity investment, towards a USD 120 million target fund. GCF is also contributing USD 4 million in grant funding for a

USD 12 million technical assistance facility to support investees and smallholder farmers. Through this new partnership, GCF is supporting Acumen's expansion across East, West and North Africa – unlocking even greater impact by helping more smallholder farmers adapt to climate change and build sustainable, resilient livelihoods, ultimately aiming to improve the lives of 20 million people.

How do you measure the impacts of the projects supported by the ARAF fund?

Annual performance reports detail the project's overall implementation progress, including performance against GCF investment criteria, financial information, project logic framework targets, indicators, environmental and social safeguards (ESS), indigenous peoples, and gender project considerations. The reports also provide information on challenges encountered and mitigation actions taken. The ARAF has an impact at three levels: lives impacted, farmer well-being and, climate resilience. ARAF reports annually against core indicators in line with GCF's results management framework. At the impact level, ARAF reports on the number of the Fund's direct and indirect beneficiaries (disaggregated by gender). At the outcome level, GCF measures increases in: the generation and use of climate information in decision-making; additional adaptive capacity and reduced exposure to climate risks; awareness of climate threats and risk reduction processes; resilience and enhanced livelihoods of the most vulnerable people, communities and regions; resilience of health and well-being, and food and water security.

The Green Climate Fund is supporting the expansion of the ARAF fund across East, West and North Africa – unlocking even greater impact by helping more smallholder farmers adapt to climate change and build sustainable, resilient livelihoods, ultimately aiming to improve the lives of 20 million people.

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GREEN CLIMATE FUND

The Green Climate Fund (GCF) is the world's largest multilateral climate fund. As the financing mechanism of the United Nations Framework Convention on Climate Change (UNFCCC) and a critical element of the Paris Agreement, GCF's mission is to support developing countries in raising and realising their climate ambitions toward low-emission, climate-resilient pathways. As at June 2025, GCF had committed over USD 16.7 billion in funding to 297 projects in 133 developing countries.

KAVITA SINHA

Kavita Sinha is director of the Private Sector Facility at the Green Climate Fund. Previously, she was with the European Climate Foundation (ECF), where she was Programme Director for Energy Transition in Asia, becoming the interim director for the Southeast Asia Energy Transition Partnership. Before this, she held leadership roles in multiple sectors, including cofounding startups in clean energy and infrastructure services. She worked for almost 10 years with the U.S. Agency for International Development's climate impact program. Kavita has an MBA from Rutgers Business School, an honours degree in Chemical Engineering, and graduate studies in energy systems from leading engineering schools in India.



📖 An article by

Fernando J. Díaz López, Executive Director of the S&O Climate & Earth Center of HEC Paris

How emerging countries innovations can scale climate resilience for all

A new paradigm of global development has emerged – the climate resilience transition – requiring climate resilient solutions. While DFI and DAA are supporting these, they may not fully capture the market opportunities that climate resilience represents. Hence, the considerable opportunity for private action remains largely underexplored, and its transformational power is poorly understood. Yet, despite the challenges (economic and regulatory), the emerging countries is stepping to the fore.

Floods, heatwaves, storms, droughts, forest fires – the daily news constantly reminds us that the climate has changed. Greenhouse emissions continue to rise, with devastating socio-economic consequences. Societies and economies need to adapt decisively and fast – and many solutions for mitigation and recovery are readily available.

Amid the climate turmoil, a new paradigm of global development has emerged – the climate

resilience transition. For the past decade, International Development Finance institutions (DFIs) and Development Aid Agencies (DAAs) have been called upon to play a key role in the mainstreaming of solutions for climate mitigation and adaptation.

When discussing climate resilient solutions, we refer to new technologies, products, services and business models used to anticipate, absorb, adapt and transform systems related to climate impacts (risks, hazards, vulnerability). To the surprise of many, a considerable number of these are emerging across Africa, Latin America and the Caribbean, the Middle East and South-East Asia.

Climate resilience for development portfolios: supporting emerging countries solutions

In recent years, DFIs and DAAs have been proactively launching climate resilience for development initiatives, in an attempt to manage the climate challenge. Across the globe, many international actors are implementing climate adaptation and climate risk projects at different scales – e.g. providing funding, financing (including blended finance) and guarantee financial mechanisms. Thematically, these programmes address

issues related to adaptation planning, disaster response, nature-based solutions, reduction of inequalities, capacity building, infrastructure development, among others. Examples of the above include the UK PACT, the AFD's AdaptAction, FMO's Dutch Fund for Climate and Development – to name but a few. DFIs and DAAs are also catalysing private investments and creating market opportunities for emerging countries innovations in climate adaptation and resilience. For instance, the InterAmerican Development Bank has launched CLIMA – a performance-based, financial mechanism that rewards borrower countries when nature and climate KPIs/objectives are met (with a 5% rebate). Proparco has also implemented similar Sustainability-linked Loan initiatives. For example, it has led a group of DFIs in a historic loan to EcoBank that is linked to two major climate commitments and diverse criteria of sustainability performance (see the interview with Rachael Antwi, Group Head of Sustainability at Ecobank, page 66).

However, despite their manifold and tangible benefits in increasing climate preparedness, traditional climate resilience development programmes are likely to lag in standard mechanisms of technology transfer. Moreover, they may not be able to fully capture the market opportunities that climate resilience represents.

The climate adaptation finance gap is smaller than the resilience market opportunity

As noted in a previous article in *Private Sector & Development*, Proparco's magazine, there is a real climate resilience market opportunity¹. The Climate Policy Initiative (CPI) has estimated that USD, 6,7 trillion in annual climate finance will be needed during 2024-2030. An additional 7 trillion will be needed annually in the period 2031-2050 (about USD 14 trillion by 2050). However, and understandably so, a vast amount of the finance available is spent on climate mitigation and decarbonisation (mainly renewable energy projects). According to CPI estimates, less than 5% of climate finance is spent on adaptation and resilience. Moreover, the adaptation finance gap is estimated to be around USD 320-400 billion per year by 2035 (about USD 3.2 - USD 4.2 trillion)^{2 3}.

Because of the existence of dual gaps in climate finance (general and adaptation finance), it is possible to talk about a considerable market for climate resilience solutions. Specialised market firms suggest USD estimates of 10-100 bn by 2030 (e.g. by *Fortune Insider*, *SNS insider*). A recent study by the investment firm Tailwind suggested that the market for climate adaptation and resilience solutions is in the order of 1.4 trillion a year. According to this source, the global demand in USD for adaptation and resilience solutions in 2023 was 737 bn from governments, 647 bn from consumers, and 58 bn from corporates (both in the global north and south). A vast percentage of this demand is set for agriculture, food and forestry (491 bn), water sanitation (387 bn), infrastructure (213 bn) and cities and settlements (160 bn).

The Global Adaptation Commission (GAC) forecast that annual investments in USD in adaptation measures of 1.8 trillion globally from 2020 to 2030 could generate 7.1 trillion in total net benefits (from early warning systems, climate-resilient infrastructure, improved dryland agriculture, mangrove protection, and water resource resilience). The World Resources

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¹ Trabacchi, C. *DFIs' key role in climate-change resilience* | AFD - Proparco. Private Sector & Development#43, 2025

² UNEP, Adaptation Gap Report 2024: Come hell and high water – As fires and floods hit the poor hardest, it is time for the world to step up adaptation actions. . 2024, United Nations Environment Programme: Nairobi.

³ Watkiss, P. and K. England, Adaptation finance and the private sector: opportunities and challenges for developing countries. 2025, Zurich Climate Resilience Alliance.: London. p. 72

Institute (WRI) recently estimated that every 1 USD of investment in climate adaptation (agriculture, water, health and infrastructure) translates into 10.5 USD of added value (benefit) over 10 years. This means that in USD terms, 133 bn of investments could generate 1.4 trillion⁴.

The evidence suggests that investing in climate adaptation makes good economic sense; hence, there is a business case for climate resilience solutions. However, not all solutions are visible to global investors (e.g. insufficient datasets, indicators, etc). Because of this, the current scope and depth of private action in climate resilience remains largely underexplored^{5 6}, and its transformational power is poorly understood.

The transformational power of climate resilience solutions from the emerging countries

In April 2024, devastating flash flooding affected the city of Nairobi, Kenya. According to the Kenya Red Cross, this extreme climate event resulted in over 290 people dead, numerous businesses, and many hectares of land and households affected (over half displaced). UNDP estimated its effects in USD at 671 million of

losses and 783 million in damages. It could have been worse had a series of climate resilience solutions not been timely implemented. These measures included early warning systems and SMS alerts, digital crowdsourcing and crisis mapping platforms, community-based local response networks (combined with on-the ground support by the Red Cross Society, Islamic Relief, and other organisations), and pre-emptive use of nature-based solutions (around the Mau Forest Complex and the Aberdare Range).

On October 29, 2024, one of the most devastating climate events in Europe took place in the Valencia region of Spain. According to the Valencian Institute of Economic Research, the 'DANA' flash floodings resulted in the deaths of 228 people, the displacement of thousands of people and hectares of land affected. Economic losses in EUR were estimated to be in the order of 12-50 billion. While the City of Valencia also relied on an early warning system, SMS messages, on-the ground support (Civil Protection and Military Emergency Units), it did not effectively rely on crowdsourcing platforms such as Ushahidi (developed in Kenya and used during the Nairobi floodings). Another interesting element was the use of European satellites and on-the ground sensors in Nairobi, originally instated as part of the Horizon Europe project TWIGA. In Valencia, part of the recovery plan now includes a strong focus on nature restoration. This comparison serves to illustrate how emerging countries innovations can make a difference – including in combination with climate resilience solutions from the global north

There are a growing number of emerging countries climate resilience innovations that are being successfully exported to the Global North. A remarkable example is **Ushahidi**. This social enterprise was created in 2008 as an open-source digital platform to monitor post-electoral violence in Kenya. It has since evolved into a series of interconnected digital services and platforms, providing real-time, crowd-sourced data that generates situational awareness maps used for rapid emergency responses in extreme climate events. Examples of other events where this technology has been used include Japan's earthquake and tsunami

(2011), Atlanta's snowstorm (2014), and the Pakistan floodings (2022). Headquartered in the USA and Kenya, it is a long-term partner of UNDP across many international projects – having acquired global recognition. Ushahidi has received funding from UK Aid, US Aid, the Omidiyar Network (USA) and others; it has many international public and private clients (public authorities, newspapers, NGOs). Its latest project, Gearbox! has been funded by the Lemelson Foundation and is supported by MIT. Gearbox! is a 10,000 m² open-innovation ecosystem facility for design and rapid prototyping. Outside Africa, additional examples of emerging countries innovations in international markets include India-based Cropin (AI for regenerative agriculture), Saudi Arabia's Sadeem Technology (flood and traffic information smart system) and Mexico's Gravalock (permeable floor / street systems) – all with clients in Europe, the USA and Canada.

Additional examples are Jokalante, a Senegalese social enterprise offering an early warning system and local-language radio support for fishermen and farmers, and Rada360, a Tanzanian precision agriculture solutions venture, combining precision irrigation sensors, satellite-based crop monitoring, and soil testing. It remains to be seen, though, whether their local ecosystems will give them the conditions to upscale.

Many other climate resilience solutions have similar potential for a wider applicability. The specialised data platform NetZero Insights reports close to 5200 startup companies active in the climate adaptation and resilience space (climate risks, climate monitoring, environmental disaster management, water, nature-based solutions, resilience agriculture). These companies – approximately 40% of which are located in the emerging countries – have leveraged USD 29 bn of venture capital funding (pre-seed, seed, early stage, late-stage VC).

Climate resilience ecosystems in the emerging countries, the missing piece

As shown by the above examples, innovative climate resilience solutions can be adopted (diffused, transferred, exported) following regular market dynamics – regardless of where they originated. However, new solutions, ventures and business models are more likely to emerge in well-structured and functioning innovation ecosystems. In weaker or less mature ecosystems, governments (and their implementing bodies) must intervene to correct market and systemic failures – especially when economic and regulatory forces do not reward novel solutions (more commonly present in the emerging countries). An ecosystem-based approach to supporting climate resilience hubs of innovation and experimentation might be the missing piece to mainstream climate solutions.

A variety of climate innovation for development programmes are emerging to identify emerging countries innovators, strengthen local ecosystems, remove barriers to scaling, and promote systemic innovation, experimentation, and learning⁷. One example is UNDP, which leads the global adaptation innovation marketplace (AIM) and the Adaptation Fund Climate Innovation Accelerator (AFCIA). Another is UNIDO, which is executing a GEF-funded programme that includes a Community of Practice on Micro, Small and Medium-sized Enterprises (MSMEs) Incubation and Acceleration. DFI and DAA are also partnering with intermediary and academic organisations to achieve similar missions.

Academic institutions are also supporting climate resilience in the emerging countries. For example, the HEC Paris Challenge+ Africa programme is supporting innovators in Dakar and Abidjan – with the support of the French Ministry of Foreign Affairs. This programme focuses on *strategy, investment readiness, business models and business planning*, supporting ventures such as Jokalante, Limawa, and Soltima, among others.

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CLIMATE & EARTH CENTER OF HEC PARIS

The Climate & Earth Center of HEC Paris (top-ranked European Business School), established in 2021, generates knowledge and tools to help businesses address climate change and biodiversity impacts. It focuses on decarbonization, circularity, and climate resilience strategies for business transformation. Through its three pillars—Think, Teach, and Act—it equips decision-makers with expertise, educates future leaders, and drives collective action among stakeholders to create sustainable business models and meet today's environmental challenges.

⁴ Brandon, C., et al., Strengthening the investment case for climate adaptation: A triple dividend approach., in WRI Working Paper. 2025, World Resources Institute: Washington.

⁵ Lacambra, C., et al., Private Markets for Climate Resilience: Global Report. 2020.

⁶ Collins, L., The Unavoidable Opportunity: Investing in the Growing Market for Climate Resilience Solutions, in Discussion Paper. . 2024, Global Adaptation & Resilience Investment Working Group: New York. p. 25.

⁷ IDIA, Strengthening Innovation Ecosystems. 2021, The International Development Innovation Alliance (IDIA) and the Ecosystem Strengthening Working Group: Washington, DC. p. 59.

Private Sector & Development

THE MAGAZINE

Private Sector & Development (PS&D) is Proparco's magazine that compares the views of experts on issues relating to the role the private sector plays in the development of emerging countries.

The magazine calls on the expertise of development players in these geographical areas, especially private sector decision-makers, donors, international organizations, NGOs, as well as academics and experts from development research institutes.

Each issue of the PS&D magazine focuses on a theme. Since its launch in 2009, *Private Sector & Development* has become a reference publication on the role of the private sector.

THE ONLINE MAGAZINE

The PS&D online magazine gathers the contributions published in the magazine, as well as video interviews with development players produced at Proparco by the team responsible for the editorial coordination of the magazine.

proparco.fr/en/private-sector-development-magazine



SP&D #43 STRATEGIC PLAYERS IN CHANGING TIMES

European Development Finance institutions (EDFIs) are facing an uncertain geostrategic context that challenges their priorities, activity and modus operandi. This issue highlights the levers for action of this strategic players, who invest over €12 billion a year in the private sector in emerging countries.



PS&D #42 ACCESS TO WATER AND SANITATION, THE PRIVATE SECTOR AT THE SOURCE

A major issue at a time when more than 2.2 billion people worldwide still do not have access to safe drinking water in their homes and 3.5 billion people lack adequate sanitation.



PS&D #41 ACTING IN FRAGILE CONTEXTS : FINANCING, PARTNERSHIPS, INNOVATION

If no action is taken, fragile countries will account for 80% of the world's poverty by 2030. Faced with these challenges, the importance of the private sector's role in boosting economic resilience, access to employment and essential services, is more and more widely recognised.



PS&D #40 SUSTAINABLE CITIES: HOW PRIVATE SECTOR PLAYERS ARE GEARING UP

By 2050, almost 70% of the population of developing countries will be living in cities. This issue, published in December 2023, presents several examples of how sustainable urban projects are designed and rolled out.



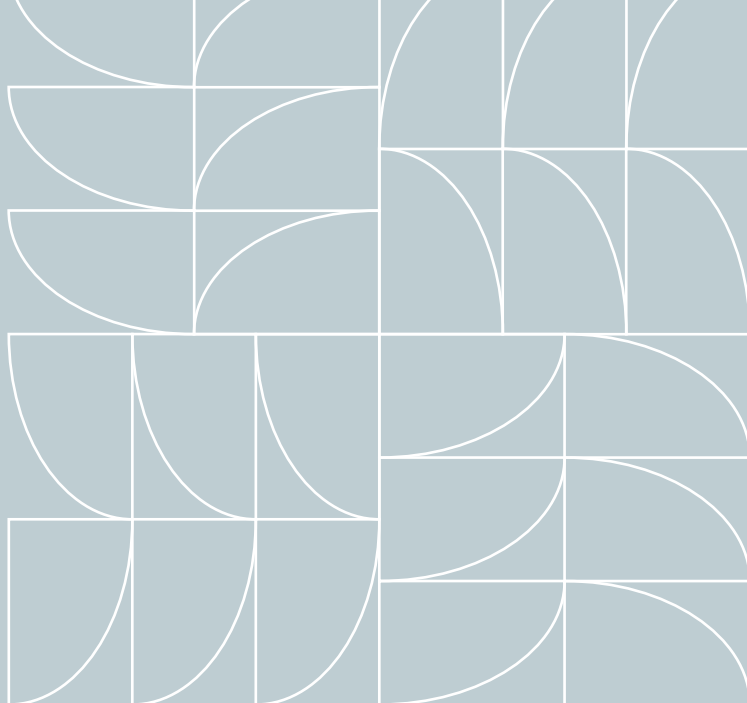
PS&D #39 FOOD SECURITY: THE CONTRIBUTION OF THE PRIVATE SECTOR

To mark World Food Day on 16th October 2023, the 39th issue was devoted to food security. It provides a collective reflection on the subject and highlights the need to get the private sector more involved in safeguarding food security across the globe.



PS&D #38 CLIMATE CHANGE ADAPTATION: HOW THE PRIVATE SECTOR IS SCALING UP

To mark COP27 held in November 2022, the 38th issue of *Private Sector & Development* magazine is dedicated to climate change adaptation and presents the drivers for action of Development Finance Institutions and the private sector faced with the challenges of the climate crisis.



Private Sector & Development

Private Sector & Development (PS&D) is a publication that provides analyses of the mechanisms through which the private sector can support the development of emerging countries. Each issue compares the views of experts in different fields, from academia to the private sector, development institutions and civil society.

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