The Lab
Global Innovation Lab for Climate Finance

THE FUND FOR NATURE

INSTRUMENT ANALYSIS
SEPTEMBER 2022

The Lab

Driving Sustainable Investment

The Fund for Nature

LAB INSTRUMENT ANALYSIS

September 2022

DESCRIPTION & GOAL —

The Fund for Nature supplies patient capital to mission-aligned projects. It negotiates fair, bankable offtake agreements for carbon projects, enabling communities and local project implementers to derive greater value from their positive climate impact, and establishing credit history for future projects.

SECTOR —

- Agriculture
- Forestry (reforestation, afforestation, and conservation)
- Blue carbon

FINANCE TARGET —

- First loss capital from donors or foundations
- Development Finance Institutions
- Family Offices
- Commercial Banks with climate commitments

GEOGRAPHY —

For the pilot phase: Africa

In the future: Africa, potentially Latin America and Southeast Asia

The Lab identifies, develops, and launches sustainable finance instruments that can drive billions to a low-carbon economy. The 2022 Lab cycle targets four thematic areas: sustainable food systems, nature-based solutions, zero-carbon buildings, and adaptation, in addition to three geographic regions: Brazil, India, and Southern Africa.

AUTHORS AND ACKNOWLEDGEMENTS

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Sida

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CLIMATE POLICY INITIATIVE

SUMMARY

As corporations continue to make ambitious net zero commitments, they are looking to secure a reliable supply of future carbon credits, leading to soaring demand in the voluntary market. At the same time, there is an undersupply of high-integrity nature-based carbon projects globally. As a result, carbon credits prices are rising, and a premium is being paid for high-quality credits with co-benefits. Nature-based solutions (NbS) are arguably the most scalable, cost-effective source of carbon credits for avoiding and removing greenhouse gas emissions.

Currently, there is a credit gap in financing for nature-based carbon projects which drives developers to cover the up-front development costs through grant funding or pre-selling a portion of credits at a steep discount to corporate buyers or brokers. Information asymmetry between buyers and sellers often leads to disproportionate value capture by intermediaries, reducing the potential revenue-share for the project implementer and local community. Finally, while many climate investors want to gain exposure to NbS, they need vehicles that provide scale, diversification, and risk mitigation to enable them to participate in the market.

The Fund for Nature (TFFN) aims to provide project-level debt and offer investors access to a portfolio of high-integrity nature-based carbon projects. To back the loan, TFFN is structuring and will open-source a Simple Agreement for Future Offtake (SAFO), which will serve as a bankable document to enable the sector to scale and achieve more equitable terms for local partners, including a higher carbon price.

Assessed against the Lab criteria, The Fund for Nature is:

- **Innovative:** TFFN is the only instrument providing project-level debt to nature-based carbon projects in Africa to reduce dependency on steeply discounted pre-sales of credits. The SAFO also reduces transaction costs and increases transparency.
- **Financially Sustainable:** The main sources of capital are commercial investors; the concessional tranche is only envisioned for the pilot fund for proof of concept and funding the technical assistance facility.
- **Catalytic:** The pilot fund is envisioned to be approximately USD 50-70 million. Once proven, the potential for scale is very high, with the voluntary carbon markets estimated to reach USD 5-50 billion by 2030.
- **Actionable:** CrossBoundary has developed a strong indicative pipeline and has market-tested the solutions with developers and offtakers. CrossBoundary has previously developed similar instruments for energy access solutions.

After Lab endorsement, CrossBoundary will continue to develop the project pipeline, engage offtakers, and seek funding for the pilot fund and the technical assistance (TA) facility. They will work with DLA Piper, who is providing pro bono legal support, and CrossBoundary's internal counsel to develop the SAFO and other key structuring documents and agreements.

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CONTEXT

Corporations' voluntary, science-based climate commitments have soared in the past few years yet demand for high-quality credits is outstripping supply.

Corporations' voluntary, science-based climate commitments have soared in the past few years.[1] Voluntary carbon markets are a key element of companies' strategies to meet their ambitious targets, driving the expected growth of this market from USD 1 billion in 2021 to upwards of USD 50 billion by 2030.[2] Within the voluntary market, credits from nature-based solutions (NbS) are highly valued due to their scalability, cost-effectiveness, and potential to offer additional benefits to the communities and the ecosystems hosting them.

Despite constituting more than one-third of the climate solutions needed, NbS receive only about 2% of climate finance globally – far less than low-carbon energy and transportation, which represent the vast majority of climate finance flows today.[3] Although historically NbS have been funded mainly by governments and philanthropic organizations, the global carbon market presents an enormous opportunity to channel private capital into natural climate solutions.

Currently, demand for high-quality credits is outstripping supply. Implementing carbon projects involves a complex system of stakeholders and registration processes, and developers face additional challenges common to emerging and frontier markets, where most projects are based.

There are also important equity and justice considerations. Accessing voluntary carbon markets and securing financing for projects on fair terms require a high degree of expertise in the intricacies of the market and processes. As a result, there is often disproportionate value capture from the intermediaries and buyers who can better navigate these systems. This dynamic is especially acute when the only available capital sources are corporate buyers and brokers willing to provide up-front financing in the form of pre-payment for carbon credits. In this situation, **interests are not aligned because the financier is looking to secure credits at the lowest possible price, while the project is looking to achieve the highest possible price.**

At the same time, private investors with sustainability mandates (foundations, family offices, Development Financial Institutions (DFIs), impact investors, commercial investors, and institutional investors, among others) are increasingly interested in nature as an asset class. However, they need mechanisms that allow them to participate in deals and overcome challenges such as:

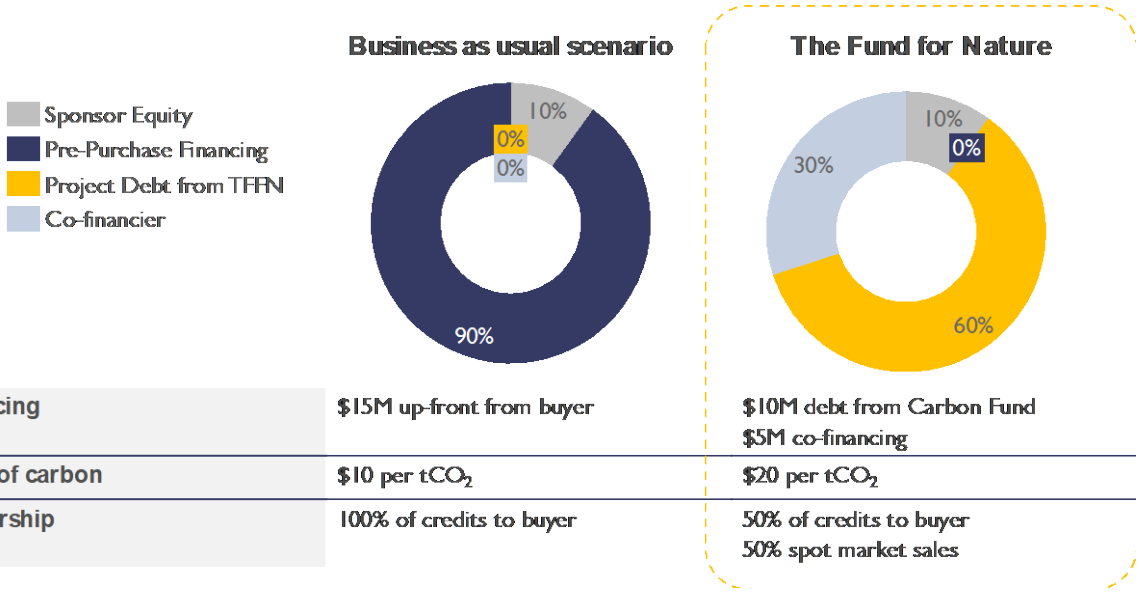
- High perceived project risk and potential for reputational risk, which is especially true in frontier and emerging markets where the majority of NbS project potential exist
- Cost and complexity to source high-integrity projects
- Pricing volatility in the voluntary carbon markets

[1] BloombergNEF data reflects that by end of May 2022, nearly 3,000 companies have committed to set a science-based target and over 1,350 of these companies have had their targets approved.
[2] McKinsey Sustainability, 2021. A blueprint for scaling voluntary carbon markets to meet the climate challenge. https://www.mckinsey.com/business-functions/sustainability/our-insights/a-blueprint-for-scaling-voluntary-carbon-markets-to-meet-the-climate-challenge
[3] CPI, 2019. Global Landscape of Climate Finance 2019. Climate Policy Initiative, London. https://climatepolicyinitiative.org/publication/ global-climate-finance-2019/

- Lack of aggregation of projects requiring offtakers and buyers – many of whom are new to the market – to vet projects and conduct due diligence into the integrity of the project and alignment with international standards/SDGs

The Fund for Nature (TFFN) aims to level the playing field for communities, local implementers, and developers while increasing the supply of high-quality carbon credits through a debt fund that provides project-level debt backed by standardized, bankable offtake agreements. Market-priced debt financing will provide much needed capital to project developers and allow them to sell their carbon credits at a higher future price, achieving scale and increasing the economic benefit to local actors. Figure 1 provides an illustrative comparison of business as usual to TFFN.

Figure 1: *Business as usual vs The Fund for Nature (illustrative)*



	Business as usual scenario	The Fund for Nature
Financing	$15M up-front from buyer	$10M debt from Carbon Fund $5M co-financing
Price of carbon	$10 per tCO_2	$20 per tCO_2
Ownership	100% of credits to buyer	50% of credits to buyer 50% spot market sales

TFFN will be managed by CrossBoundary, an investment firm with extensive advisory and asset management experience in emerging and frontier markets. CrossBoundary has prior experience structuring investment vehicles and blended finance mechanisms. CrossBoundary Energy (CBE) exited its first blended finance facility at a 15% net IRR to investors, and has since raised a further $80M in equity for its commercial & industrial renewable energy business from ARCH ARPF and Norfund. It also structured the first project financing facility for mini-grids in Africa, CrossBoundary Energy Access (CBEA), which committed USD 14 million through the first fund and recently closed an additional USD 25 million.

On their advisory platform, CrossBoundary has facilitated investments across Africa, the Caribbean, Central, and Southeast Asia, Eastern Europe, and the Middle East, with ticket sizes ranging from USD 500K-150M. CrossBoundary's Natural Capital Advisory practice focuses on unlocking private capital for nature-based solutions that contribute to climate change mitigation and adaptation and address biodiversity loss. In the agribusiness, aquaculture, and forestry sectors specifically, they have advised on over 80 transactions in 19 countries, including nature-based carbon projects and enterprises.

CONCEPT

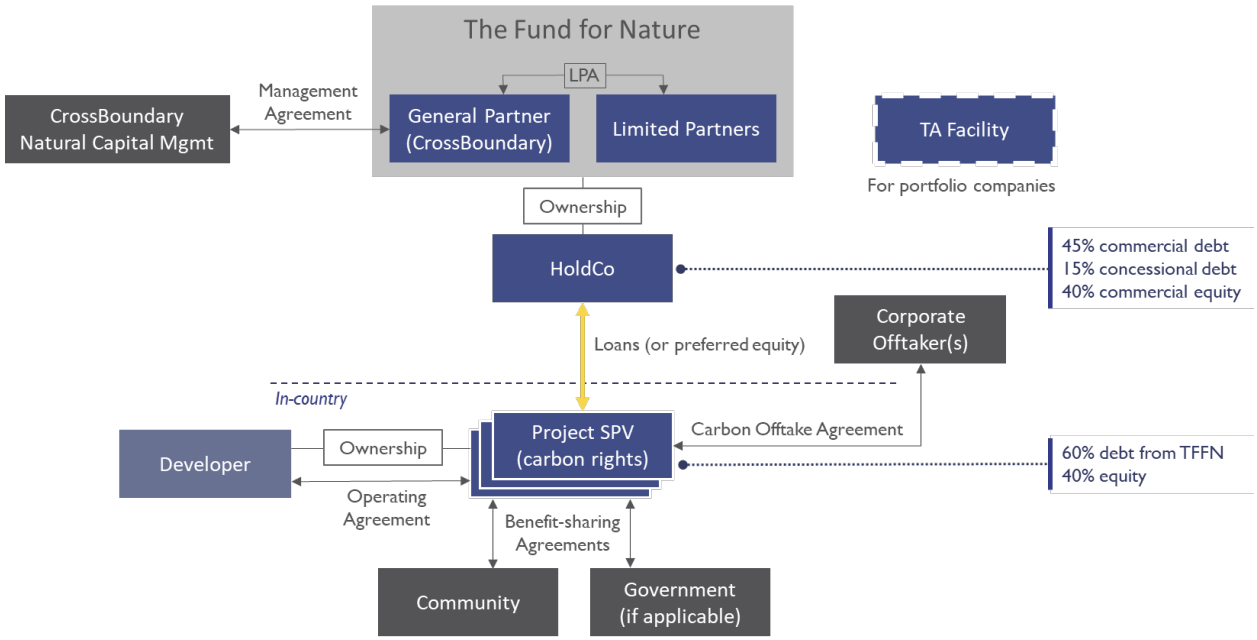
1. INSTRUMENT MECHANICS

Debt financing and standardized, transparent agreement for nature-based carbon projects will increase economic and social benefits to communities while expanding high-quality carbon credit supply to meet market demand.

CrossBoundary will manage the equity investors in The Fund for Nature in a simple General Partner/Limited Partner (GP/LP) structure, which will capitalize a Holding Company (HoldCo). This HoldCo will raise debt capital from lenders to be on-lent to project SPVs, which can be based in or outside of the country depending on existing developer operations and local regulatory / tax regimes. The HoldCo will have first rights to repayment from carbon credit sales revenues[4]. A grant-funded technical assistance vehicle will provide targeted support services to developers and communities to mitigate project and execution risks and ensure strong monitoring and verification of results.

The following figure outlines the current hypothesis for the fund structure. The actual design will be determined by the structure required by investors and the jurisdictions of the underlying projects:

Figure 2: *Instrument Mechanics*



Step-by-step mechanics

1. The Fund for Nature and HoldCo will be capitalized by lenders and equity investors at a target 60:40 debt to equity ratio. CrossBoundary will serve as the General Partner and manage the fund through a Management Agreement with a new Natural Capital Management entity.

[4] Given the year-to-year lumpiness of NbS carbon projects, there will be the option to convert cash interest payments to Payment in Kind (PIK) interest in years where projected cash flow is minimal (exact covenant TBD).

2. Each project will be held in a special purpose vehicle (SPV), through which it will receive non-recourse project financing (disbursed on a milestone basis) backed by the SAFO, with other security to be determined (e.g., step-in rights, pledge on bank account where project developer receives payment for carbon credits under SAFO).
3. The developer would have an operating agreement with the project SPV.
4. The project SPV will sign offtake agreements with corporate buyers or brokers and receive carbon credit payments.
5. Each project will have in place benefits sharing agreements with local communities and governments (where applicable).

Key stakeholders

- **General Partner**: CrossBoundary will be the General Partner and manager of the fund.
- **Limited Partners**: The Limited Partners (LPs) are the investors in the fund. CrossBoundary targets a 60:40 debt to equity ratio, with a blended finance structure in the pilot fund.[5] LPs in the pilot fund are expected to be a mix of concessional and commercial investors. They include foundations, family offices, impact investors, DFIs, institutional investors, and other commercial investors, with ticket sizes in the USD2-30M range.
- **Developers**: CrossBoundary is actively developing partnerships with project developers and implementers in its target markets. These include both local, single-project developers as well as larger developers with regional and global portfolios.
- **Corporate Offtakers**: The fund will aim to attract offtakers whose values are aligned with high-integrity projects and who are willing to pay a higher price reflecting the quality (see Appendix 1 on demand-side integrity). Using the SAFO will allow the participation of corporates without large balance sheets for up-front project financing, as well as those who do not have large in-house carbon teams and therefore require a simpler way to secure future supply of credits.
- **Communities and Governments**: The local communities and governments (where applicable) will share the benefits of the carbon credits' sales. Through offtake agreements that better align incentives and achieve a higher carbon price, TFFN will increase the size of the pie, enabling projects to sell credits later in the development process and, in doing so, increase the upside sharing among participants.

The geographic focus of the pilot fund is Sub-Saharan Africa. The current shortlist of target countries includes the Democratic Republic of the Congo (DRC), Ghana, Kenya, Mozambique, Sierra Leone, and Zambia. The list will be finalized at later stages and is primarily informed by the strength of the project pipeline, the regulatory environment for carbon and foreign investment generally, as well as the potential political risk.

Given the fund's focus on NbS, agriculture, forestry, and other land use (AFOLU) projects will be targeted, particularly removal projects in afforestation, reforestation, and revegetation (ARR). Avoidance projects, including reducing emissions from deforestation and forest degradation (REDD+) projects, will also be included as a secondary focus.

[5] The 60:40 debt-to-equity ratio reflects the existence of a concessional subordinated debt tranche (~15%) that will allow the fund to offer commercial returns to equity investors.

2. INNOVATION

The instrument is a unique financial structure coupled with transparent, standardized agreements to increase the supply of high-integrity nature-based carbon projects.

TFFN aims to increase the supply of high-quality nature-based carbon projects to meet the growing demand from corporate offtakers while increasing the economic benefit to project implementers and local communities. CrossBoundary will achieve this through its project finance structure and standardized offtake agreements, as detailed in section 2.2.

2.1 BARRIERS ADDRESSED

The proponent seeks to overcome several barriers to developing nature-based carbon projects in developing the instrument highlighted in the table below:

Table 1: *Barriers and Solutions*

Barrier	Description	Solutions
1. Lack of access to low-cost capital for developers	Project developers must put up significant equity and/or sell future credits at steep discounts to develop projects.	TFFN provides market-rate debt for project developers, reducing the upfront equity required, allowing developers to sell their credits when the project has been further de-risked and can command higher prices from buyers.
2. Investors looking for larger deals, making smaller projects difficult to fund	Investors have indicated that they prefer to invest in projects that are larger than the average project size. Additionally, high fixed project validation and monitoring and verification costs put a lower bound on project size.	Project aggregation allows investors to come in at the fund or project level. TFFN will use a portfolio approach allowing LPs to invest larger amounts at the fund level, leverage CrossBoundary due diligence, and benefit from geographic diversification.
3. High transaction costs due to bespoke terms and structures	Each project requires its own due diligence, structure, and legal documents, which increase the time and cost to develop.	TFFN seeks to develop standardized, open-sourced documents, including a simple agreement for future offtake (SAFO), to increase transparency and reduce transaction costs.
4. Lack of developer/ implementer capacity and information asymmetry	Project developers and local implementers may lack experience managing carbon projects (execution risk) and knowledge of carbon markets to understand processes and pricing dynamics (reduced benefits sharing).	A TA facility accessible to projects will help increase execution capacity, while upfront financing and support from TFFN will give developers greater ability to command high prices and structure strong benefit-sharing agreements with local stakeholders.

2.2 INNOVATION

TFFN is the first instrument in the market seeking to provide mission-aligned project finance debt to carbon projects on commercial terms, with a focus on climate equity.

The Fund for Nature is a first-of-its-kind debt fund for nature-based carbon projects, enabling project developers to secure better prices and terms for carbon sales. This leads to higher revenues for the project, and more of that revenue staying with the implementer and local communities. This results in more sustainable projects that increase communities' capacity to adapt to the effects of climate change, improve biodiversity, and reduce vulnerability through other ecosystem services such as reduced soil erosion and maintenance of hydrological cycles for agriculture.

The instrument is addressing the barriers mentioned in section 2.1 by bringing innovation to the market in three main ways:

1. **Better terms for project developers through the provision of debt instead of up-front financing from carbon credit buyers:** The fund will provide an alternative to up-front financing offered by brokers and offtakers who seek to secure a high quantity of credits at low prices to compensate for risk.
2. **Pioneering standardized SAFOs to reduce transaction costs:** The fund will launch an open-sourced Simple Agreement for Future Offtake (SAFO), bringing transparency and standardization to the market while serving as collateral for debt. By providing a template document for structuring the transaction and negotiating terms, SAFOs can help grow the size of the market by reducing transaction costs. CrossBoundary is working with its counsel to ensure the SAFO will align with the standardized emissions reduction purchase agreements (ERPAs) that the International Emissions Trading Association (IETA) provides and is currently updating.
3. **Aggregation of projects at the fund level**: The fund will give investors access to a diversified project portfolio. This will reduce transaction costs for offtakers and investors, leveraging CrossBoundary's due diligence on these projects.
4. **Increased benefits sharing:** By funding projects with patient capital, developers will be able to determine when and to whom they sell their credits, enabling them to obtain a higher price per credit. This will increase the size of the pie (revenue pool) available to be shared with communities. Ensuring a transparent lending and credit sales process will give communities and local proponents equal access to the economic information on the project, leveling the playing field. While each project will be unique in terms of the exact terms for benefits sharing, CrossBoundary will ensure that communities are deeply involved, prioritized, and fairly compensated from the earliest stages of engagement. The benefit to communities will include revenue-sharing from carbon credit sales as well as direct benefits (such as infrastructure improvement, training, or addressing specific needs) and employment opportunities. Benefits-sharing is a key component of supply-side integrity, outlined in greater detail in Annex 1.

Comparison to similar instruments: While offtake agreements with corporates are still the dominant form of financing in the market, a growing number of funds have been raised to invest in natural capital. However, there are notable differences to TFFN, including:

- **Type of funding provided:** Based on Lab research, TFFN is the first instrument in the market to provide mission-aligned project finance debt on commercial terms to nature-based carbon projects in Africa.
- **Size:** The intention is to focus on middle-market carbon projects ranging between USD 2-20 million, whereas some other investors look at larger carbon projects between USD 20-100 million.
- **Incentive alignment:** Corporates, carbon funds, and brokers are looking to buy at lower prices, leaving less upside for the communities and reducing rather than maximizing project revenue. TFFN is looking to achieve the highest possible fair price for carbon credits.
- **Carbon expertise:** Non-carbon-specific impact investors are interested in nature-based businesses but often refrain from funding projects for which significant revenues are from carbon credit sales.
- **Carbon credits:** Some funds seek to deliver returns in the form of carbon credits, whereas this fund focuses on financial returns.

Some of the existing financing instruments and CrossBoundary's differentiated positioning include the following:

Table 2: *Comparable instruments*

Similar Instruments	Description	TFFN Differentiation
Climate Asset Management Carbon Credit Fund (HSBC, Pollination)	USD 2B fund for natural capital, projects; returns carbon credits to corporate LPs	• Not targeting corporate LPs • Financial returns, not credits
Vertree (Hartree Partners and Wildlife Works)	USD 2B fund to create 20M voluntary carbon credits per year over 30 years	• Not looking to own or fully develop projects • Financial returns, not credits
Forest Carbon Partners (New Forests)	Works with landowners to create projects financed through timber sales and carbon credits. Focused on California's compliance market	• Not looking to own projects • Focused on emerging markets • Voluntary carbon market sales
Land Degradation Neutrality Fund (UNCCD, Mirova)	USD 200M fund for long-term financing for sustainable land use projects, mostly in sustainable agriculture and forestry	• Focused on carbon projects

The motivation for designing TFFN was driven by conversations with project developers and implementers who could not access up-front financing without giving away a significant portion of their ownership and/or carbon credits before a single tree was planted. Their feedback has consistently confirmed the thesis of their need for debt financing.

2.3 CHALLENGES TO INSTRUMENT SUCCESS

Difficulty in keeping consistent cashflow during the early years of the project lifecycle. ARR projects incur high up-front costs, and the sale of credits does not begin until years 3-5; in contrast, REDD+ projects require less initial investment and can generate and sell credits sooner. Typically, credits are verified every 2-3 years, and they can be sold either through

pre-purchase agreements (pre-determined price and volume through offtake agreements) or on the spot market (the market price is usually higher for high-quality credits with co-benefits).[6] Given that the sale of credits for ARR projects does not usually begin until years 3-5, financing debt during this period becomes more difficult. The fund is currently allowing for a 3-year grace period with payment in kind (PIK) interest as projects are established and begin generating cash flows. Starting in Year 4, projects will begin repaying principal and the accrued interest. Even after projects begin to generate carbon credits, projects will have the option to convert cash interest to PIK interest in years where cash flow is tight due to limited carbon credit production (exact covenant to be determined). At the fund level, CrossBoundary will smooth the cash flow from project debt payments by blending ARR projects with REDD+ projects, as well as staggering projects. Moreover, the fund will also explore alternative sources of revenue such as from agriculture, eco-tourism, and the sale of timber, which could be significant depending on the characteristics of each project.[7]

There is medium- to long-term uncertainty around the pricing of NbS carbon credits. There is also uncertainty around buyers' preferences, specifically, if they will remain willing to pay a premium for NbS credits with strong co-benefits for biodiversity and livelihoods. Through conversations with developers and offtakers, The Lab established that there is a high probability that certain offtakers will pay a premium for high-quality projects that meet higher standards for benefits sharing and co-benefits, such that the instrument can assume some premium to market prices. Nonetheless, CrossBoundary is mitigating this risk and taking an iterative approach to building the SAFO with acceptable terms to all stakeholders. Corporate commitments and standards will also continue to strengthen corporate incentives to buy high-quality credits. This is already happening through the Science-Based Targets Initiative, Integrity Council for Voluntary Carbon Markets, and others with which TFFN will align (see Annex 1 on demand-side integrity).[8]

Pipeline development is a challenge as there are a limited number of highly experienced project developers, and projects are geographically dispersed. CrossBoundary has been engaged in extensive conversations with project developers to identify a preliminary pipeline of projects and is engaging in discussions to partner with developers with existing development portfolios. Additionally, CrossBoundary will leverage its presence on the ground in target markets and collaborate with programs that are funding early-stage project development to build a pipeline.

There are medium- to long-term uncertainties in market development, including Article 6 implementation risk.[9] Voluntary carbon markets may experience volatility and differentiated approaches at country level in the long run. Some countries have chosen to nationalize the benefits of climate change action that improved land management provides, such as generation of carbon credits (e.g. Indonesia, Vietnam, Ecuador, PNG, and others). However, this risk varies across markets, and so CrossBoundary has engaged a regulatory consultant to assess this risk at the country level and use it as one of the four main criteria to evaluate target countries. Geographic diversity of the fund's investments is another

[6] Co-benefits include additional positive effects on biodiversity and the health of the ecosystem, as well as ensuring a measurable improvement in the quality of life of societies that inhabit the land and its surroundings.
[7] For purposes of the instrument analysis, alternative revenue sources in the model are de minimis to ensure the projects are bankable on their removal or avoidance merits alone.
[8] SBTI Corporate Net-Zero Standard. 2021. https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf
[8] ICVCM, 2022. Benchmarking for Voluntary Carbon Markets. https://icvcm.org/about-the-integrity-council/
[9] World Bank Group, 2022. What You Need to Know About Article 6 of the Paris Agreement. https://www.worldbank.org/en/news/feature/2022/05/17/what-you-need-to-know-about-article-6-of-the-paris-agreement#:~:text=Under%20Article%206%2C%20emission%20reductions,emission%20reductions%20are%20not%20overestimated

important aspect of our risk mitigation plan, along with aligning the tenor of loans with the tenor of offtake contracts.

Lastly, climate change could put nature-based solutions at greater risk (e.g., fire, floods). Therefore, ensuring that climate risk analysis and mitigation is incorporated into the project design will be critical. This risk is minimized at the portfolio level through geographic diversification and through carbon credit buffer pools which are standard protocol. An additional line item has been included in the fund's annual budget to provide for contingencies; it may be used to purchase insurance when competitive products are available in the market.

Table 3: *Challenges to instrument success and mitigation strategies*

Challenge	Mitigation Strategies
1. Irregularity in cash flow	✓ Blending REDD+ projects with ARR projects (especially in early years) ✓ Staggering projects and exploring alternative revenue sources
2. Medium/long-term pricing uncertainty for carbon credits	✓ Structuring deals with leading developers and off-lakers who offer/demand high integrity credits at a premium on strong terms ✓ Structuring robust and bankable offtake contracts
3. Limited pipeline of high-quality NbS projects - "chicken and egg"	✓ Ability to access high-quality projects through mission-aligned capital ✓ Collaboration with programs funding early-stage project development ✓ Leveraging CrossBoundary's global country-based investment teams
4. Medium/long-term uncertainties on market development, including Article 6 implementation risk	✓ Aligning loan tenor with offtake contracts ✓ Engaging regulatory consultants and governments to shape policy ✓ Geographic diversity of pipeline
5. Risk of Natural Disasters	✓ Climate risk analysis and mitigation incorporated into project design

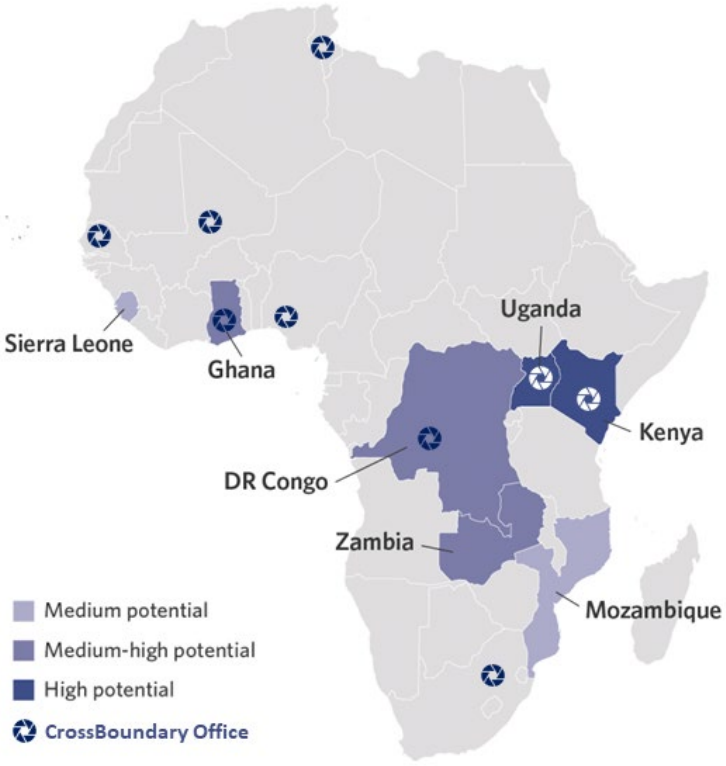
MARKET TEST AND BEYOND

3. IMPLEMENTATION PATHWAY AND REPLICATION

An initial pilot transaction in Africa is envisioned during 2023, which will be rolled up into the pilot fund by Q4 2023.

The geographic focus of the pilot transactions is Sub-Saharan Africa. Given the focus on NbS, the primary target would be the AFOLU sector with an emphasis on removal projects in afforestation, reforestation, and revegetation (ARR). There will be a secondary focus on avoidance projects related to REDD+ activities. The current shortlist of target countries includes the Democratic Republic of the Congo (DRC), Ghana, Kenya, Mozambique, Sierra Leone, and Zambia.

Prioritization and selection of these countries incorporate assessments across four key areas:



1. **Carbon market precedence:** This assessment looks across all major registries, both voluntary and compliance, to assess the current utility of carbon trading. Results have implications for the feasibility of project development from legal and technical standpoints. Other precedence attributes, such as volume and types of projects registered or delivering credits indicate operational ability within the country. This area also investigates country preparedness and infrastructure to support carbon trading, including participation in readiness programs such as UN-REDD or the Forest Carbon for Partnership Facility, good standing regarding UNFCCC reporting, and any systems for safeguards, monitoring, and evaluation, or carbon pricing tools.
2. **Regulatory environment:** This assessment conducts diligence on legislation, policies, and public declarations for intended actions on climate change and activities related to NbS projects. Alignment of fund activities to these contexts has a significant consequence on the likelihood of success and reduced risk of unforeseen challenges over the project lifetime. Intended use of trading mechanisms such as Article 6 under the Paris Agreement or stances on voluntary carbon market operation is also considered. This assessment area further covers land rights, land use and carbon ownership, business and financial systems, and stability of the political and social environment.
3. **Mitigation potential:** This assessment investigates the potential scale of impact that ARR and REDD+ activities may achieve in the country. This assessment looks not only at the type and extent to which the environment can support the growth of land-based carbon pools but also assesses the drivers which have historically degraded or are currently threatening them. The reality between what is theoretically possible and what the project would have to address through its intervention keeps helping to target priority areas where mitigations can be cost-effective and scalable.
4. **CrossBoundary coverage:** This assessment is specific to the capacity of CrossBoundary to facilitate and manage and includes the existing project pipeline in the country and the existence of CrossBoundary offices, local teams, and partnerships or networks.

CrossBoundary's initial market analysis based on the above criteria is included in Annex 2.

Stakeholder engagement: With the support of the Lab and by leveraging CrossBoundary's strong networks in the development finance community, a variety of stakeholders, from

offtakers to project developers and lenders, have been engaged so far. The conversations with offtakers include large tech and B2C companies and other corporates. The project developers that have thus far been engaged are mostly Africa-focused, and interest in the instrument has been very high. Finally, at least three large financial institutions[10] have been engaged and validated the instrument hypothesis. Through the Lab, DLA Piper is providing pro-bono legal support in structuring the instrument. Also, through the Lab, CrossBoundary has engaged the International Emissions and Trading Association (IETA) to identify where the SAFO can add value alongside IETA's own standardized Emissions Reduction Purchase Agreements (ERPAs).

Pipeline development: CrossBoundary is in advanced conversations with several strong project developers, including a global project developer and technology company with 6 active projects in Africa totaling USD 150 million with 30-50 million tCO2 potential. Projects span tropical forest restoration, sustainable forestry, a community-owned wildlife conservancy, and mangroves restoration.

Pilot structuring and rollout: The first pilot transaction is expected to be complete in 2023, which would be rolled up into the pilot fund as it achieves first close. In the lead-up to the pilot fund's first close, intermediate milestones, including finalizing fund structure, signing of LP agreements with investors, and acceptance of commitments, will need to be met. The incorporation of the fund is expected to happen around Q3-Q4 2023, when the formal launch of the pilot fund is announced. Once the proof-of-concept phase is complete, CrossBoundary will look to scale up the instrument, raising a larger debt fund in 3-5 years. A SAFO template will be published in Q4 of 2022 and launched for piloting. Finally, public capital will be largely phased out after the pilot fund but may continue to play a role in supporting the technical assistance Facility during scale-up. A detailed timeline is included in Annex 3.

4. FINANCIAL IMPACT AND SUSTAINABILITY

4.1 QUANTITATIVE MODELING

The Lab Secretariat, with input from CrossBoundary, developed fund and project-level models to test the sensitivity of the base case assumptions. The model contains two project prototypes: removal-focused Afforestation, Reforestation and Revegetation (ARR) projects, and avoidance-focused Reducing Emissions from Deforestation and Forest Degradation (REDD+)projects . The fund model level can roll up the economics of any number of the project prototype models into the debt fund in any fund year. This functionality was introduced to include the option to smooth project cash flows for debt repayment at the *fund level. The major base case assumptions for the fund and project models include[11]:*

Table 4: *Project and fund level assumptions[12]*

Assumption	Unit	Fund Level	ARR project	REDD+ project
Interest rate	%	6-8%	12-14%	12-14%

[10] As of August 2022. Additional institutions are being engaged on an on-going basis.
[11] Ranges provided to maintain confidentiality
[12] Base case assumptions developed by The Lab in July 2022. CrossBoundary continues to stress test assumptions with potential investors, as well as optimize the blended finance structure and sculpted repayment mechanisms to further improve returns.

Assumption	Unit	Fund Level	ARR project	REDD+ project
Tenor	Years	15	10	10
Leverage	%	50%[13]	60%	60%
Average project size	Hectare		8-10,000	80-100,000
Sequestration/ha	Ton CO2 (peak)[14]		80-100	8-10
Offtake credit price[15]	USD/credit		USD10-25	USD10-20
Escalation rate	%		4-7%	4-7%
Development cost/ha	USD/ha		USD2,000	USD200

Using these assumptions and factoring in a 3% management fee for the general partner, the USD 70-100 million pilot fund yields a return of 12-15%, while the underlying ARR and REDD+ projects show a return of 20-35%.

The Lab ran sensitivities on each of the variables above to determine the change for each variable that would yield a 0% return (breakeven) on the respective project or fund. This analysis showed that the model is sufficiently robust to withstand significant changes (50%+ change) to individual key variables such as carbon credit price trajectory, development costs, and fund and project-level leverage and interest rates before the structure becomes uneconomical.

The Lab then ran two downside scenarios, changing the assumptions in the table above by -10% and -20%[16]. As the table shows, the project-level models are most sensitive, with a 20% change of all variables making the project uneconomic. In reality, it is unlikely that all key variables would move together, so the -20% scenario is quite pessimistic but highlights that when a number of variables change negatively from the base case, the economics are quickly impacted. CrossBoundary is actively engaged in discussions with both developers and offtakers to fine tune their assumptions for the pilot fund to narrow their ranges on assumptions.

Table 5: *Sensitivity analysis*

Case	Fund level returns (IRR)	ARR returns	REDD+ returns
Base Case	11-15%	20-25%	30-35%
-10% from Base Case	8-10%	10-12%	18-20%
-20% from Base Case	5-7%	1-3%	4-6%

[13] A concessional subordinated tranche is under consideration to optimize leverage, return, and risk profiles. Current analysis only shows the senior tranche at commercial rates.
[14] Sequestration rates for afforestation projects increase over time as forests grow. The figures here show the peak rates of sequestration. The model reflects the variability over time.
[15] This is the estimated price for offtakers entering into a long-term agreement (i.e., SAFO), and not the spot market price. The model estimates contracting up to 75% of credit through a SAFO and selling the remainder in the spot market.
[16] "-10%" and "-20%" mean making each assumption worse. In the case of expenses, the assumptions were increased (higher costs) by 10% or 20%.

4.2 PRIVATE FINANCE MOBILIZATION AND REPLICATION POTENTIAL

The Fund for Nature will begin implementation through a single pilot transaction that will then be rolled into a pilot fund. Table 6 below presents conservative estimates of the approximate scale of the pilot transaction, pilot fund, and at-scale fund, as well as leverage within the transaction and in unlocking corporate funding for projects. Private capital mobilization will occur in two ways:

1. **Private capital catalyzed through the transaction** – this is based on an initial assumption that the fund will cover 60% of the capital requirements of the project, with the remaining 40% comprising other private capital mobilized into the investment
2. **Private capital catalyzed through carbon credit purchase** – this is the amount of private capital (primarily from corporations) unlocked in the form of carbon credit purchase which would not be possible without up-front funding for the project. This analysis also includes a counterfactual of lower prices achieved under a business-as-usual scenario

Table 6: *Illustrative private capital mobilization figures*

Phase	Size	Private capital catalyzed in the transaction	Private capital catalyzed through carbon purchase	Private capital catalyzed through higher carbon price	Private capital catalyzed through project scale
Rationale	**Avg ticket size x Number of deals**	**60% leverage**	**Avg 1M tons per project at USD30/ton**	**Increase in carbon funding vs. counterfactual of USD10/ton**	**After initial investment, projects can fund 3x expansion**
Pilot transaction	USD5M	USD3.3M	USD15M	USD10M	USD45M
Pilot vehicle	USD50M (USD10M x 5)	USD33.3M	USD150M	USD100M	USD450M
At-scale vehicle	USD100M (USD10M x 10)	USD66.7M	USD300M	USD200M	USD900M

Once scaled, the USD 100 million Fund for Nature aims to catalyze USD 900 million of commercial capital (including carbon credit payments) for ARR and REDD+ projects in Africa.

5. ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACT

The Fund for Nature will have a wide-ranging impact beyond carbon removal to co-benefits that will reduce vulnerability of local communities to the effects of climate change and make them more resilient

The Fund for Nature will contribute to four different sustainable development goals (SDGs):

Table 7: *SDG Impact*

SDG	TFFN Impact	SDG	TFFN Impact
	Projects will provide local jobs and also greater revenue sharing for local communities.		The instrument's main focus. TFFN will finance projects specifically generating verified carbon credits.[17]
	Blue carbon projects such as mangrove restoration will directly benefit marine ecosystems.		Restoration and REDD+ projects will improve or maintain biodiversity and mitigate the effects of climate change.

While the exact environmental and socio-economic impact of TFFN will be highly dependent on each project's location, size, and scope, some estimated impacts at the fund level are included below.

Table 8: *Impact indicators for Fund*

Indicator	Fund (Estimated)
GHG emissions avoidance/removal	• 2t CO2 per hectare per year for avoided emissions, over 30-50 years • 10t CO2 per hectare per year for removal, over 30-50 years[18] • Target for fund's portfolio of projects to sequester a total of 500 thousand tCO2 per year, by year 5
Number of hectares of natural habitat restored/preserved	• Target to initiate restoration of 50,000 ha of land in 5 years
Number of beneficiaries disaggregated by gender	• Estimated 500+ per project
Number of new jobs created disaggregated by gender and age	• Expected targets include 50% share of women employed

5.1 ENVIRONMENTAL IMPACT

The Fund for Nature will finance nature-based carbon removal and avoidance projects in emerging and frontier markets with significant co-benefits for biodiversity and livelihoods. These projects are expected to contribute to countries' Nationally Determined Contributions (NDCs) and National Adaptation Plans as well as increase food security and a host of other adaptation benefits.

Climate mitigation: The fund will finance projects that remove carbon from the environment (through afforestation and reforestation) and lead to the avoidance of emissions by financing REDD+ projects. All credits will be verified by an independent international body such as Verra or Gold Standard (see Annex 1).

[17] Projects will be verified by an independent international entity such as Verra or Gold Standard.
[18] Projects will also account for permanence, leakage, and additionality of emissions removal and reduction through factoring into estimates or eligibility of projects.

Climate adaptation: Projects financed through the fund will reduce local populations' vulnerability through a more equitable distribution of capital and increase climate resilience through climate-smart practices. The vulnerability and food insecurity of local populations will be reduced by the planting of trees, which improves soil fertility and reduces erosion from strong rains and winds. These impacts can improve water management in flood or drought-prone areas. For example, trees increase soil moisture retention by shading soils and reducing evaporation while retaining rainwater in their biomass. Local populations' resilience to climate change's effects can be improved through better land use management and enabling decisions for long-term sustainability.

5.2 SOCIAL AND ECONOMIC IMPACT

Gender: Women face a greater burden from climate change than men as they rely more on natural resources for food, water, and collecting firewood. Climate change also increases the risk of disease due to extreme heat in women more so than men due to the nature of their occupations. Nature-based solutions have the potential to break this negative cycle by empowering women, especially as they are often also more motivated to conserve the environment they steward. Therefore, the fund will take a gender-sensitive lens to project selection by prioritizing projects that ensure women are fairly represented and benefit from project design, implementation, monitoring, and evaluation, providing employment and capacity building (e.g., in forest management and data collection and sharing).

Job creation and community benefit sharing: The fund will improve community livelihoods and provide high-quality employment by enabling the development of nature-based carbon projects. In the design and implementation of the fund, demonstration of community benefits, such as through Climate, Community & Biodiversity (CCB) standards verification and benefit-sharing agreements, will be criteria for projects to be funded (see Annex 1). Operationally, the fund will include a technical assistance (TA) facility to support capacity building for project management, implementation, and monitoring, where the beneficiaries of these trainings will be tracked. The number of jobs created will be disaggregated by gender and age.

NEXT STEPS

After Lab endorsement, CrossBoundary will continue to develop the project pipeline, engage offtakers, and seek funding for the pilot fund and the technical assistance (TA) facility. They will work with DLA Piper, who is providing pro bono legal support, and CrossBoundary's internal counsel to develop the SAFO and other key structuring documents and agreements.

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ANNEXES

ANNEX 1

PROTOCOLS AND GUIDELINES TO ASSURE QUAILTY OF CREDITS IN SUPPLY- AND DEMAND-SIDE MARKET ACTIVITIES

i. Quality in Certification

Project activities will lead to the generation of carbon credits which will likely contribute to the achievement of mitigation targets, for example host country NDCs or corporate net zero targets. Therefore, it is important to have a strong degree of assurance that the mitigation results reported are equivalent to actual atmospheric changes.

Carbon standards chosen by the Fund will need to demonstrate that carbon credits are real, verified and additional while properly addressing leakage, non-permanence and double counting risks, and measurement uncertainties. Monitoring and reporting must be transparent, and there should be independent verification of results by a qualified third-party. Activities should be aligned with national accounting and reporting as far as possible, comply with any applicable REDD+ nesting rules and arrangements, and there must be no double-counting of units.

Additional quality assurance should be in place for Avoided Deforestation (AD) crediting activities at the project-scale. This is due to the specific risks to additionality that are presented by AD activities at the project scale – specifically, the risk of inflated historical baselines. For AD, nested projects have increased accounting integrity and have potential for greater climate impact

Projects supported by the fund must also report on the co-benefits of project activities beyond mitigation outcomes and be certified through appropriate standards' programming. The fund currently considers the Voluntary Carbon Standard (VCS administered by Verra), Gold Standard, and Plan Vivo to be within scope but does not restrict future application of new or improved standards for reporting on co-benefits.

Projects issuing VCS credits must also be co-certified by Verra's Climate, Community, and Biodiversity (CCB) standard. CCB is an additional level of reporting that aims to capture and assess multiple levels of project impact beyond carbon mitigation. CCB certification ensures that projects:

1. Identify all stakeholders and ensure their full and effective participation
2. Recognize and respect customary and statutory rights
3. Obtain free, prior and informed consent (FPIC)
4. Assess and monitor direct and indirect costs, benefits and risks
5. Identify and maintain high conservation values
6. Demonstrate net positive climate, community and biodiversity benefits

Projects under Gold Standard are required to report on Sustainable Development Goals as part of any nature-based issuance of credits. This reporting, referred to as the safeguarding principles, requires projects to report not only on actual outcomes but potential future environmental and social impacts including impacts to water resources, soil health, food security, livestock wellbeing, and biodiversity protection.

There are additional requirements on community engagement, benefit-sharing, and grievance processes which the fund will work to ensure are followed and audited.

The Plan Vivo Standard similarly requires reporting of livelihood and other environmental impacts in order to issue credits. Owing to the fact that Plan Vivo specializes in smallholder and community owned lands, this additional reporting focuses on participatory engagement of communities, transparency provisions, and emphases on positive livelihood and socioeconomic outcomes. Beyond climate mitigation, the Plan Vivo Standard can be adapted to support certified reporting on watershed, biodiversity and conservation, and food security improvements.

These additional reporting and certification provisions mandated by the fund will provide an additional level of quality assurance both to the project and to the credits that they generate. It further enables the monitoring and reporting of benefits related to over sustainable development goals under the Paris Agreement and beyond.

ii. Quality in Reporting

Projects supported by the fund should adhere to the prevailing guidance for credit-level integrity standards laid out by the Integrity Council for the Voluntary Carbon Market (ICVCM). This includes complete and transparent reporting on the ICVCM's Core Carbon Principles (CCPs) criteria and use of their Assessment Framework to ensure quality and accountability throughout the lifetime of the project.

The CCPs outlay ten high-level tenets each of which includes standardized guidance for assessments, monitoring, and evaluation – known as the Assessment Framework.

Source: ICVCM

The Assessment Framework operationalizes the CCPs by providing universally applicable criteria and decision-making tools designed to cover all carbon credit types. Use of the CCPs and Assessment Framework further assures that the credit-issuing standards used in a project are of highest integrity and provide uniform reporting and traceability in the market for both the supply and demand sides of the activity.

iii. Quality in Credit Use

In the process of identifying partners for projects, the fund will also require assurances on quality of the credit's intended use. The sale of carbon credits should align with the principles of use outlined by the Science-Based Targets initiative(SBTi) and the Voluntary Carbon Market Initiative's Claims Code of Practice. Ensuring that the use of credits on the demand side is aligned with best practices and is complimentary to a comprehensive climate action plan by the user of the credit ensures project quality as well. By applying these principles, the fund mitigates risk of greenwashing and inadvertently enabling business-as-usual activities from entities that wish to source credits from fund-supported projects.

The guidance for carbon credit offset use outlays recommendations for high levels of traceability of trades and an order of operations for the retirement and subsequent claim of credits. This implies credits should be retired with as few transactions as possible between project credit issuance and the retiring entity. It also forces retiring entities to have expert-reviewed sustainability plans in place which identify specific emissions for which the offset will be claimed against. This ensure credits are not being misused at any stage between credit creation and retirement.

Source: VCMI

iv. Quality Control and Country-level Alignment

Though there are requirements and guidelines implied by other aspects of the fund's protocols for quality assurance, it further recommends oversight and third-party verification of all monitoring and reporting for projects and credit-level integrity. As evidenced by the rise of rating and assessment agencies for carbon market activities, there is benefit from additional, independent checks on quality throughout.

In addition, the fund will work to involve country-level target setting into the design and decision process of project interventions. This ensures that national and subnational governments can both participatorily align with projects and progress towards climate action targets and sustainable development priorities. The fund will also work to ensure readiness for project compliance under potential future use of Article 6 to authorize governments to trade and sell credits under UN mechanisms. This significantly de-risks long-term project activities.

Fund-supported projects should therefore make every effort to make information freely available across all project activities from initial design phase to completion. This supports the auditability of projects and transparency of impact. To that end, the fund aims to align with the International Emissions Trading Alliance's (IETA's) guidance on the use of carbon trading to support development goals, the Voluntary Carbon Market Global Dialogue's (VCM-GD's) guidance on government and stakeholder relations, the GIIN IRIS+ Standards for characterizing and reporting impacts, and should show alignment of project activities with host country's sustainable development and climate action goals.

v. Additional Context and Future Work

The guidance and frameworks referenced above serve as foundational reference points to operationalize the fund's approach to ensuring quality across stakeholder groups and phases of projects. The fund recognizes and seeks opportunities to go beyond these current recommendations as well as adapt to future quality standards as they develop.

Furthermore, this annex on quality assurance recognizes that key performance indices of quality must be tailored to individual project in recognition of their highly contextualized operations. Protocols for this tailoring, though outlaid in some of the referenced guidance, will require a stakeholder identification practices, participatory inclusion in project design and implementation, free-prior and informed consent, co-development of benefit sharing and grievance mechanisms, and consideration of local and national level development goals. This process, adapted from existing guidance, will ensure project-level and project-specific protocols for implementation, management, and reporting. Quality can thereby be monitored and verified not just from external standards but also from internal project-level stakeholders.

To ensure these standards of fund quality, the selection process for partners is likewise subjected to rigorous vetting. Through prioritization of countries and projects, the fund will conduct due diligence on project partners regarding evidence of past ability to deliver outcomes, reputation and good-standing in legal systems and with community, operational capacity, and alignment with the quality standard required by the fund. This screening and prioritization process will ensure capable, mission-aligned partners and projects across fund activities.

Work towards operationalizing these quality protocols is central to the next stages of fund development. As part of this future work, the fund intends to consult with experts and project stakeholders to continuously improve current use of these protocols before first investment and throughout the lifetime of the fund. The actualized version of these protocols will therefore require the engagement of initial potential projects. Through this engagement, the protocols will be tailored to and leveraged for the specific country, stakeholders, and project activities as projects are identified and assessed for fund support.

ANNEX 2

MARKET ANALYSIS

CrossBoundary developed the following analysis to identify target markets. The analysis below is a comparison between countries, not an absolute assessment. (1 = medium, 3 = high)

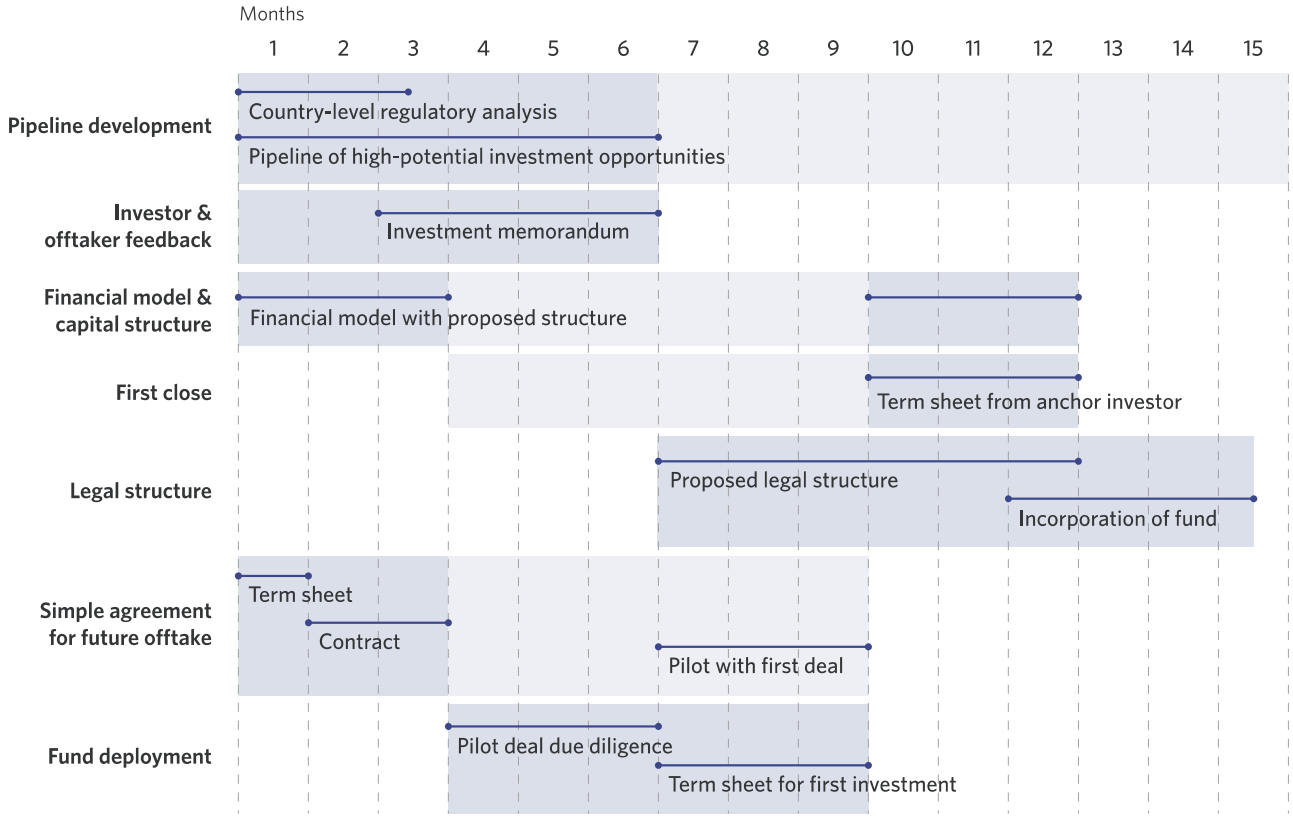
Table 1: Market analysis

Factor	Criteria covered	Sierra Leone	Kenya	Zambia	DRC	Mozambique	Ghana	Uganda
Overall assessment		Medium-High	High	Medium	Medium	Medium-High	Medium-High	High
Climate targets	*Climate targets are clear and note specific restoration and land use pathways with accompanying policies.*	3	3	2	2	4	3	3
Business and Finance Environment	*High contract enforceability, investment protection measures, stable political systems, and ability to operate business and conduct transactions.*	2	4	4	1	2	3	3
Emissions trading readiness	*UN and partnership processes complete or are within UN guidance, carbon pricing tools available, national inventories complete with monitoring systems in place.*	1	3	3	2	1	3	4
Carbon rights	*Clearly defined rights to carbon on-land or can be inferred with precedence, specific legal mechanisms exist to prove these rights, carbon trading is permissible and able to be conducted between private entities.*	2	3	3	3	2	2	3
Tenure and land ownership laws	*Clear tenure types, transferable, can be aggregated, and verifiable ownership. Grievance and certification processes in place.*	2	3	2	2	2	2	3
Precedence	*There are examples of projects which issued and retired credits through NBS activities. Evidence that carbon market projects have previously been registered and delivered credits to market.*	3	4	3	3	2	2	4
Stances	*Clear intention regarding the operation of VCMs from the federal and local levels with accompanying*	3	3	3	3	3	3	3

Factor	Criteria covered	Sierra Leone	Kenya	Zambia	DRC	Mozambique	Ghana	Uganda
	policies and laws. Includes Article 6 if relevant.							
CrossBoundary Advantage	*Present long-term staff, offices, projects, or trusted partner groups. Project pipeline under way.*	2	4	2	3	2	3	3
Potential Scale of Impact	*Historical land uses and drivers of land use change, regional ecologies and potential scale those ecosystems (e.g. maximum biomass storage or size of current pools), trends in deforestation, condition of land, scale of potential projects (area of lands suitable for project activities).*	2	3	4	4	4	2	3

ANNEX 3

Figure 1: Implementation pathway



ANNEX 4

VOLUNTARY CARBON MARKETS PRIMER

- Carbon offsets are an important part of the climate transition to mitigate emissions from **hard-to-abate sectors** and where reductions remain extremely costly. Science-based targets to stay within 1.5 degrees Celsius warming above pre-industrial temperatures still stipulate that offsets only mitigate remaining 5-10% of emissions after avoidance and reduction.
- Carbon offsets are governed by **compliance** (e.g., EU Emissions Trading Schemes) or **voluntary markets** (e.g., for corporate commitments) and contribute towards achievement of **Nationally Determined Contributions (NDCs).**

Figure 2: Compliance Market

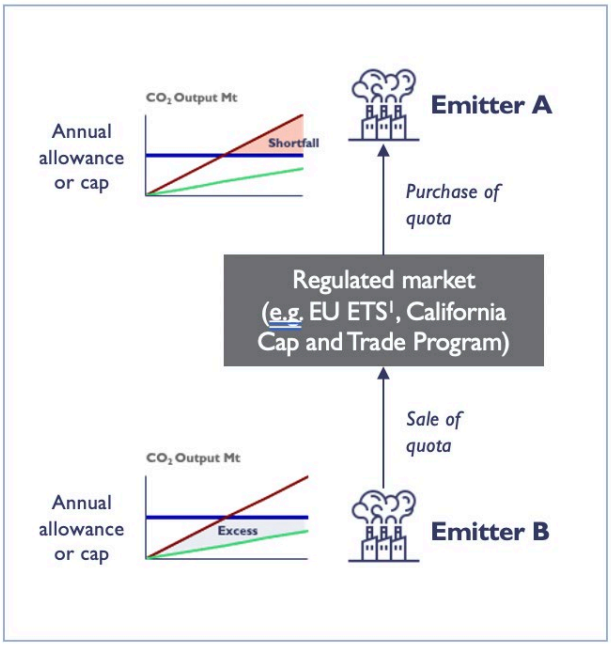
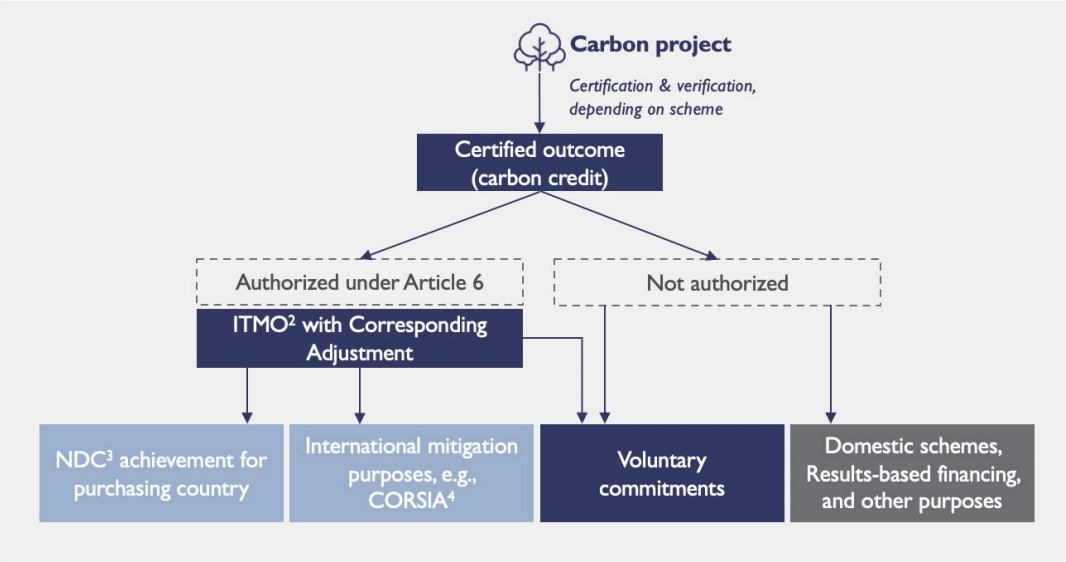


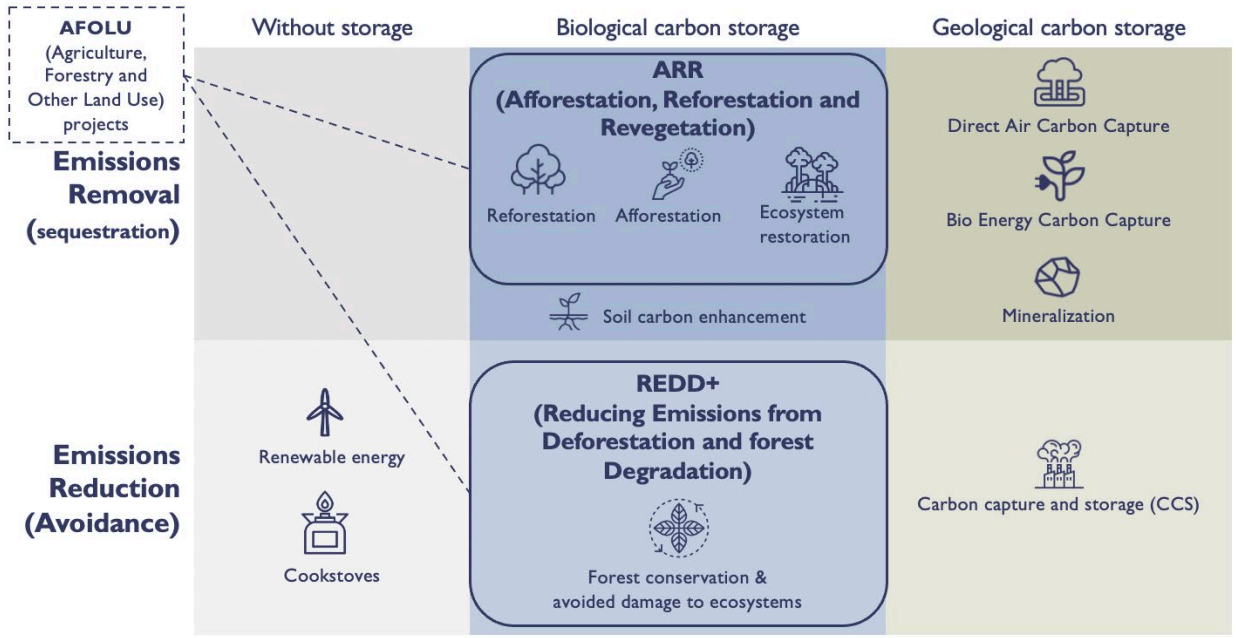
Figure 3: Voluntary market[19]



[19] Source: Perspectives Climate Research gGmbH. Note: 1) Emissions Trading Schemes; 2) Internationally Transferred Mitigation Outcomes, mechanism for international emissions trading stipulated in Articles 6.2 and 6.4; 3) Nationally Determined

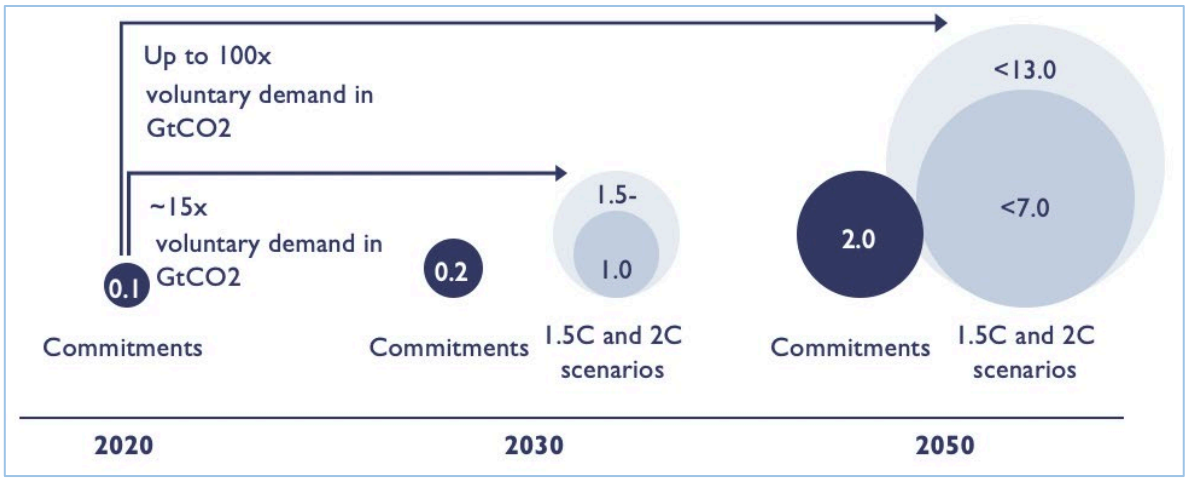
- **Nature-based carbon projects** offset emissions through either **avoidance or removal** – REDD+ (Reducing Emissions from Deforestation and forest Degradation) and ARR (Afforestation, Reforestation and Revegetation) are common project types for avoidance and removal respectively.

Figure 4: Nature-based carbon projects create offsets either through avoidance or removal[20]



- **Standards** such as Verra and Gold Standard verify carbon offset projects and issue credits that can be purchased on the voluntary carbon market
- The voluntary carbon market has been growing rapidly at **>30% CAGR** over the past 5 years by credit retirement volume and exceeded **USD1BN in value in 2021**. It is expected to continue growing, driven by corporate pledges and new regulations

Figure 5: The Task Force for Scaling Voluntary Carbon Markets estimates that voluntary carbon markets need to grow by >15x by 2030, and up to 100x by 2050[21]

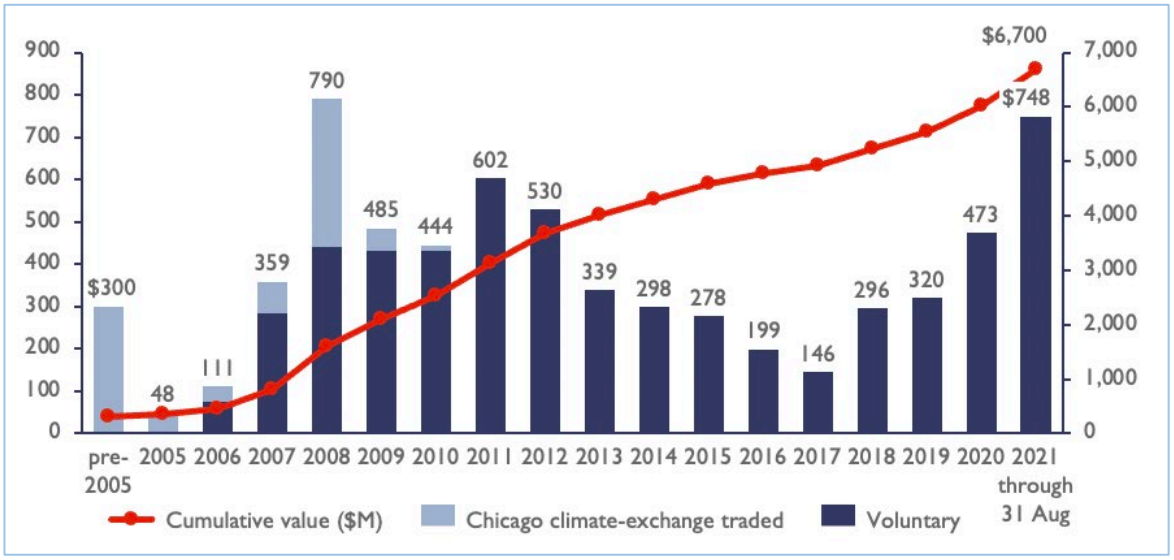


Contribution; 4) Carbon Offsetting and Reduction Scheme for International Aviation, UN scheme to offset any rise in international aviation emissions above 2020 levels

[20] Source: Adapted from Respira International

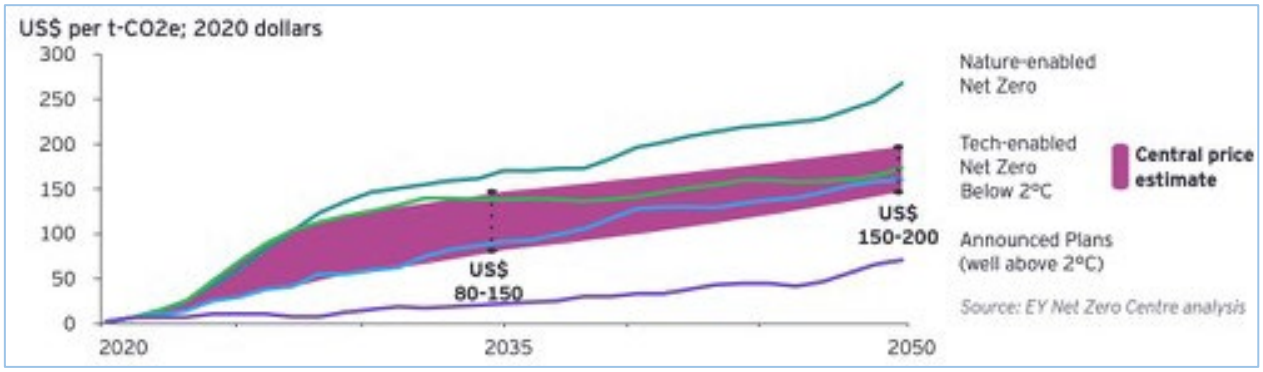
[21] Source: Ecosystem Marketplace, Task Force for Scaling Voluntary Carbon Markets, January 2021

Figure 6: Since 2017, the volume and value of voluntary carbon markets has grown substantially year-over-year, driven by new corporate pledges in 2020-2021[22]



- Carbon projects are already being developed in **Africa**, but they remain nascent compared with other regions despite the vastness of Africa's natural capital, holding ~10% of recently registered global Agriculture, Forestry and Other Land Use projects
- Carbon is **not yet a commodity**, with prices for removals ranging from USD16-45 and avoidance from USD10-13, and prices are greatly affected by perception of quality and additional co-benefits – recently **blue carbon credits** are in particularly high demand
- Several potential pathways exist for market development, but future carbon offset prices are expected to increase to around **USD100/t CO_2 by 2050**, if not by 2030, due to a rising demand and constrained supply of high-quality carbon projects

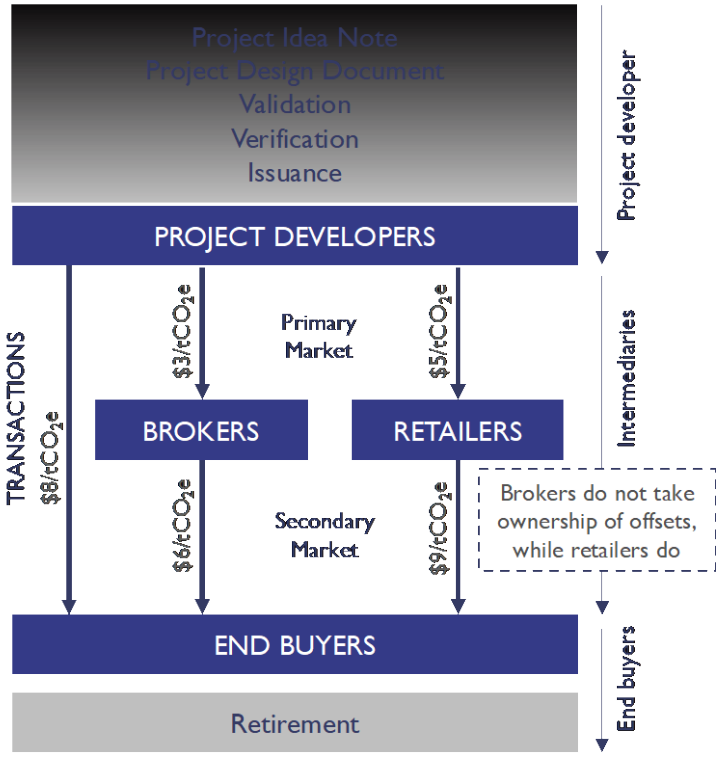
Figure 7: Offset credit price outlook, 2020-2050[23]



- Carbon credits can be sold upfront through **forward contracts** or on the **spot market**, typically intermediated by brokers or retailers. Forward sales typically come with upfront financing and flexibility in structuring but require careful negotiation of pricing between developer and offtaker interests; spot-market sales allow for sales at market price but only after project development and credit issuance

[22] Source: Ecosystem Marketplace, Task Force for Scaling Voluntary Carbon Markets, January 2021
[23] Source: https://assets.ey.com/content/dam/ey-sites/ey-com/en_au/topics/sustainability/ey-net-zero-centre-carbon-offset-publication-20220530.pdf

Figure 8: Voluntary carbon offset market structure (prices for 2019)[24]



- **Article 6** defines criteria and authorization mechanisms for national governments to determine the final use of credits. Voluntary carbon market credits that meet the criteria of Article 6.2 can be traded as **ITMOs for bilateral or multilateral emissions reductions and removals.** Government have a key role in private projects sales to the voluntary carbon market both in permitting **project development and determining implementation of Article 6**

[24] Graphic is adapted from Ecosystem Marketplace