



Towards Large-Scale Commercial Investment in African Forestry

A Study for the Climate Investment Funds Evaluation & Learning Initiative
(Public Version)

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Alternative Investment Models for Commercial Forestry in Africa



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Foreword

This report was prepared by Acacia Sustainable Business Advisors for the African Development Bank and World Wide Fund for Nature-Kenya, with financial support provided by the Climate Investment Funds Evaluation & Learning Initiative. The authors are Martin Poulsen, Mads Aspren, and Zach Bloomfield. Many stakeholders provided excellent insight into the study, for which the authors are grateful; they are equally grateful to the African Development Bank's team for support, especially from Gareth Phillips, Leandro Azevedo, and Matthew Harris.

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Acronyms

ABM	Adaptation Benefit Mechanism
AfDB	African Development Bank
AFR100	African Forest Landscape Restoration Initiative
AFIC	African Forestry Investment Conference
APSD	African Plantations for Sustainable Development (forestry company)
ATFC	Africa Tree Farming Company (forestry company)
BECCS	Bioenergy with carbon capture and storage
CAP	Criterion Africa Partners (forestry investor)
CDC	Commonwealth Development Corporation (DFI)
CDR	Carbon Dioxide Removal
CIF	Climate Investment Funds
CLT	Cross-Laminated Timber
CO ₂	Carbon dioxide
DBSA	Development Bank of Southern Africa (DFI)
DEG	<i>Deutsche Investitions- und Entwicklungsgesellschaft</i> (German DFI)
DFI	Development Finance Institution
DFR	Draft Final Report (this report)
DRC	Democratic Republic of the Congo
EADB	East Africa Development Bank
EIB	European Investment Bank
EOI	Expression of Interest
ESG	Environmental, Social and Governance
FIP	Forest Investment Program
FLR	Forest landscape restoration
FMO	Dutch Development Bank
FSC	Forest Stewardship Council
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gas (equivalent)
GSFF	Global Solidarity Forest Fund (forestry investor)
ha	hectare
HNWI	High Net Worth Individual
IDC	International Development Corporation (DFI)
IFC	International Finance Corporation
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standards Organization
IWC	International Woodland Company
KVTC	Kilombero Valley Teak Company (forestry company)
LPA	Limited Partnership Agreement
MAI	Mean Annual Increment
MDB	Multilateral Development Bank
MozFIP	Mozambique Forest Investment Project
NDF	Nordic Development Fund
NFC	New Forest Company
NGO	Non-Governmental Organization
NGP	New Generation Plantations
NICFI	Norway's International Climate and Forest Initiative
REDD+	Reducing emissions from deforestation and forest degradation
RFP	Request for Proposal
RFR	Revise Final Report
SCF	Strategic Climate Fund
SDG(s)	Sustainable Development Goal(s)
SMEs	Small and medium-sized enterprises
SPGS	Sawlog Production Grant Scheme
SPV	Special purpose vehicle
TA	Technical assistance
tCO ₂ -eq	Tonnes of carbon dioxide equivalent
TIMO	Timber Investment Management Organization
TNC	The Nature Conservancy
TOR	Terms of Reference
UPM	UPM Forest Company
USD	United States Dollars
WWF	World Wide Fund for Nature (or <i>World Wildlife Fund in US/Canada</i>))

Executive Summary

The overall purpose of the study is to assist the African Development Bank (AfDB) and World Wide Fund for Nature (WWF) Kenya in evaluating and designing alternative private funding models for commercial forestry in Africa with a view to ultimately establishing, or aiding the establishment of, a specialized investment vehicle for commercial forestry plantations. The study has been undertaken at the instigation of the AfDB and WWF Kenya, funded through the Climate Investment Funds (CIF) Evaluation and Learning (E&L) Initiative, against a backdrop in which investment in sustainable forestry on the African continent has effectively stalled in the past five years, following sluggish growth over the past two decades. The gap between the potential of forestry as a productive sector on the continent and the small size of the industry today remains substantial. Early movers achieved some success, but barriers to successful execution were substantial, and their success has not resulted in continued growth in investment in the sector.

The AfDB recognizes the economic and development potential of a thriving large-scale forestry industry on the continent. WWF Kenya represents a substantial body of civil society that supports sustainable forest management at a landscape level. Furthermore, the CIF has already invested substantial resources to catalyse investment in the sector, which has taken on further importance due to the recent focus on its strong link with climate change mitigation and adaptation. This assignment and the recommendations of this report seek to establish a basis for action to develop a large-scale, dynamic African forestry industry. This work complements the ongoing work of the CIF as a way to encourage transformative investments with the private sector in the African forestry sector.

Work Undertaken: the study builds on a sector-wide consultation exercise, including industry participants ranging from investors, industrial players, and Non-Governmental Organizations (NGOs) through to forestry fund managers. Three key case studies on blended finance in the forestry sector were examined, all three of which demonstrated the continued need for and expected value addition of a blended finance approach in the sector. This study also included a detailed market assessment that mapped out the existing forestry players and the potential for the establishment of new forestry plantations. A review of the constraints on developing forestry businesses has also been conducted. To further enrich and triangulate inputs to the study, the team also participated in three forestry industry events and consulted with a broad range of personal contacts in the sector.

Case Analyses: a detailed examination of recent blended finance transactions supported by the CIF complemented the general market analysis. Specifically, the analysis of Forest Investment Program (FIP) investments in Ghana and Mozambique demonstrated the effectiveness of blended finance in the context of catalysing forestry investments in Africa through carefully tailored use of concessional resources. These cases represent two of Africa's three best known active commercial afforestation projects. Continued support from concessional financiers for blending could have a transformational impact on the sector.

Market History and Trends: the "world" of African forestry has changed. A decade ago, generating returns in the forestry sector in Africa was very challenging, as shown by the recent trend for restructured Development Finance Institution (DFI) loans and the views of

forestry companies and investors. The global financial crisis also led to sources of capital drying up for such “frontier” investments. However, a number of sector players that were interviewed identified positive trends and are now optimistic about the opportunity to make meaningful returns. This is, in part, due to i) the possibility of piggy-backing on (sometimes failed) first plantings that enhanced silviculture knowledge, skills and sector-specific infrastructure (nurseries, tree-breeding programs, wood-processing industries, etc.), and ii) the existence of more shovel-ready projects, compared to only a decade ago. This leads to the possibility of planting at significantly lower costs. Active foresters estimated that the all-in planting cost of the 125,000 ha of commercial afforestation in Africa (since 2000) was USD 4,000-6,000 per hectare (ha). However, building on lessons learned and leveraging existing infrastructure, skills and assets could reduce establishment costs by up to 50%, according to these same foresters.

Significant investments have been made into the forestry industry in Africa since the early 2000s. Major lessons have been learnt, critical infrastructure has been put in place and several projects have been made shovel-ready at significant cost. The original investments have generated unconvincing returns, which seems to have made investors shy away from the sector. Key risks and market barriers have negatively impacted many of the last decade’s transactions. However, new investors (especially those offered enhanced risk mitigation through blended finance) would be able to capitalize on the lessons learnt and the existence of enhanced infrastructure to establish new, better quality forest plantations at around half the cost of ten years ago. In addition, increasing local demand for wood products indicates that these investors would have a high potential to sell much of the wood produced into local markets.

Current Potential: the study identified almost 500,000 hectares of land that can be transformed into productive forestry in a total landscape area of one million ha across Sub-Saharan Africa. Total investment required to develop the identified available area would be at least USD 1 billion. For context, South Africa has a total of 1.3 million ha of forest plantations and Uruguay, the world’s most recently developed forestry country, has one million ha. Current and planned investment vehicles for Africa may only lead to the planting of 10-20% of the land available for afforestation.

The opportunities for commercial afforestation in Africa are concentrated in 12 countries. The most appealing market opportunity is in expansion (i.e. brownfield) afforestation projects that would benefit from lessons learned, silvicultural developments, existing seedling nurseries, physical infrastructure and human resources. In many cases, there are viable planting opportunities on the periphery of established plantations, enabling additional planting with lower overall costs (and risks) than greenfield alternatives. Considering the attractive growing conditions and comparatively high local market prices, Africa may be positioned to have the most profitable afforestation potential worldwide.

Fund Positioning: the work undertaken has illustrated the existence of investment opportunities, the importance of unblocking the flow of capital to African forestry and the overall magnitude of the task. A small-scale approach comparable to existing funds in the market would not be transformational, as the struggles of some recent efforts to raise capital for African forestry have illustrated. To be transformational, a new Fund needs to

bring something new to the table in terms of both structure and scale. The recommendations of this report identify the following key elements of a proposed Fund that could break the deadlock:

- i. **Enhanced Risk Offering**
- ii. **Size & Structure**
- iii. **Ideal Investment Profile**
- iv. **Indicative Portfolio**
- v. **Operational Quality**
- vi. **Sustainable Forest Management**
- vii. **Partnerships**

- › Junior Tranche Investors
- › DFI Leadership
- › African Governments
- › Industrial Companies
- › Global Forestry Companies
- › NGOs
- › Wider AfDB Services

viii. **Market Potential**

Climate Change Effects: the pathways for limiting global warming outlined by the Intergovernmental Panel on Climate Change (IPCC), combined with the potential for afforestation in Africa suggest there is an urgent need to kick-start sustainable forestry plantation projects as a means to mitigate climate change in Africa. The Fund can play a critical role in this process; fully capitalized and invested in 100,000 ha of plantation, the Fund would offset around two million tonnes of carbon dioxide equivalent (tCO₂-eq) per year once plantation establishment is completed and annual replanting of harvested areas is ensured [see Table 11]. This would establish a stable, long-term carbon sink of around 12 million tCO₂-eq; over a single planting cycle, total cumulative sequestration could exceed 27 million tCO₂-eq. The Fund's assets and activities should also have substantial adaptation benefits through increasing local resilience, improving soil conditions and reducing desertification.

Contribution to the Sustainable Development Goals (SDGs): The Fund offers all investors, (including public sector investors and donors) an opportunity to invest in both adaptation and mitigation aspects and contribute positively towards achieving the SDGs. Investment into the junior equity tranche, for example, may be justified on the basis of the contribution that landscape-scale sustainable forests can make to reducing the vulnerability of communities and economies to climate change. The creation of long-term employment opportunities, diversification of resources, enhanced natural capital (water, biodiversity, non-timber forest products etc.) and the improvement in quality of life associated with these benefits (particularly for women and children) can all contribute to improved resilience and address a number of the SDGs. The Fund will contribute to the achievement of the SDGs, most notably Goals 7, 8, 9, 12, 13 and 15 and thereby provide efficient adaptation of climate change.

Employment & Gender Impacts: The Fund's investment projects will take place within wider landscapes, where some areas are dedicated to commercial activities, and other areas could be dedicated to natural restoration, conservation, smallholder agriculture and other uses (in line with current practices of most African forestry companies). This approach will generate a wide range of co-benefits, including increased biodiversity and significant new employment in rural areas, especially for women. Additional indirect gender and rural development outcomes have been illustrated in African forestry's track record and would also be expected from the Fund's investments. For example, plantations can offer a good environment for agricultural activities. Much biomass is generated, which also has value, and the processing facilities offer employment opportunities.

Operationalizing the Fund: This study provides the backdrop for and initial analysis of the possibility to establish a fund for large-scale commercial investment in African forestry. Additional details on operationalization of such a fund fall beyond the scope of the study and are left for AfDB and prospective investors to further elaborate.

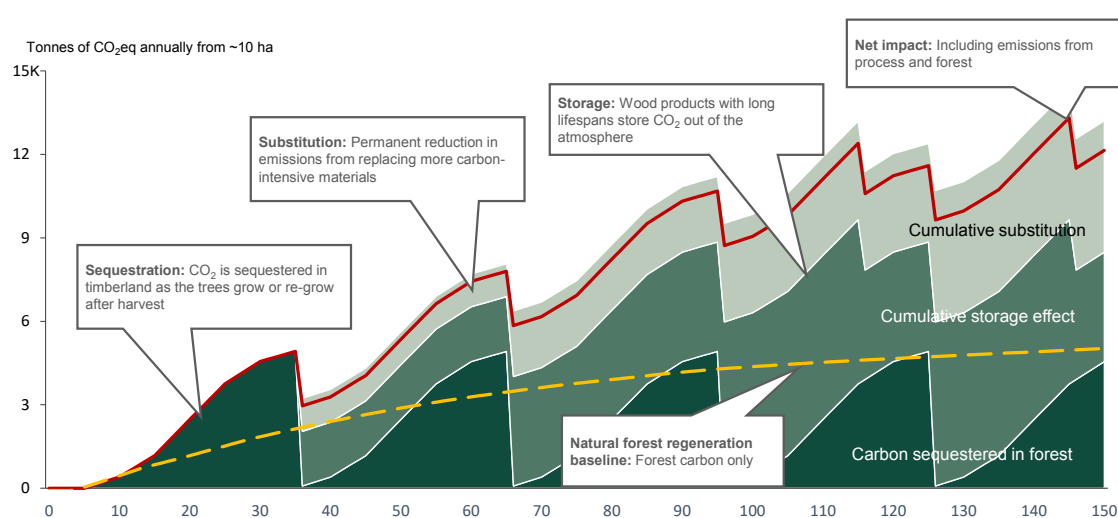
Introduction

Forestry activities in Africa take place in landscapes where many of the households and communities most exposed to the impacts of climate change also reside. Expansion of plantation forestry in Africa, provided it is sustainably executed per global best practices, has an unmatched potential for addressing both climate change mitigation and adaptation in line with national priorities. This is particularly true for poor, rural communities, which often rely on rainfall for subsistence agriculture and may have few other forms of income. Sustainably managed plantations can have a very significant impact upon the livelihood of these people, particularly women, by providing paid employment, as well as providing opportunities for income diversification. Plantations can also support local biodiversity, reduce soil degradation and improve water quality, all of which greatly benefit local communities that likely lack the resources to manage natural resources otherwise.

Agriculture, deforestation and land degradation are some of the most substantial emitters of greenhouse gases globally after transportation and energy production. Within this, deforestation has a double-edged effect as it destroys existing carbon sinks and reduces future photosynthetic capacity. Sustainable forestry, however, can play a key role in promoting afforestation and yield significant net negative carbon emissions. **Box 1** presents an example showing how timber plantations sequester carbon over multiple rotations.

Box 1: Net Carbon Effects of Sustainable Forestry¹

Afforestation, along with improved agricultural techniques and wetlands restoration, make up a significant portion of the low-cost avenues to keep temperature increases below 2° Celsius (C). Of these, some conservation organizations believe that afforestation presents the best value-for-money in terms of greenhouse gas (GHG) offset and capture, and sustainable forestry is the most market-oriented avenue to achieve higher levels of afforestation. In fact, buildings made from certain timber products actually increase the storage and substitution effects of construction compared to concrete and steel alternatives:



The trees (dark green) are cut on a harvest cycle basis and replanted such that the carbon stock in the overall forest (and management unit) is maintained, as required by all sustainable forest

¹ Source: The Nature Conservancy, Presentation at *Who Will Own the Forest*, 2018

certification standards. Carbon is furthermore sequestered in various wood products, some into shorter-life products like paper and packaging, while others into longer life products like structural timber, furniture and substitutes for cement and steel. Over time, the cumulative storage effect (middle green) increases with each harvest cycle. Cumulative substitution (lightest green) takes into account both the cumulative storage effect and the substitution of Cross-laminated Timber (CLT) over steel and concrete construction, which is more carbon-intensive than CLT products. The red line shows the net impact after factoring the emissions from harvesting and processing CLT.

Fostering sustainable forestry practices through investment schemes that integrate responsible resource use is one way that profit-oriented business and afforestation objectives can be aligned: with suitable incentives and risk mitigation, sustainable forestry can contribute to both afforestation and profit generation for shareholders. Channelling financial resources to such efforts is within the mandate of international development organizations and special climate funds.

Forestry resources and biomass represent some of the most relied-on natural resources in Africa for both commercial and subsistence economic activity. Ensuring that forests are sustainably cultivated represents a major challenge because of how intensively these resources are used. Sustainable commercial forestry, conforming to global best practices, presents a key opportunity to ensure sustainability and climate change are integrated into the management of African forests. Multilateral Development Banks (MDBs) can play a role in catalysing the right blend of concessional and commercial resources to ensure that sustainable commercial forestry flourishes in Africa.

Sustainable forestry in Africa is not currently attracting robust private investment primarily because perceived risks and barriers to investment are too formidable. Private investors are familiar and comfortable with the relatively low but reliable returns of forestry in developed markets, but Africa does not yet have the same track record of reliable returns. However, some trends show positive momentum in the sector:

- i. The potential of lower cost brownfield investments and expansions of past greenfield investments
- ii. The substantial lessons learned from investment and operation of plantations during the last two decades
- iii. An increasing focus on natural climate solutions and negative emissions over recent years, especially demonstrated at global climate and forestry conferences
- iv. Demonstration, via WWF's New Generation Plantations (NGP) model, that landscape restoration can be commercially viable

Furthermore, there are several opportunities to mitigate perceived and real risks, which is vital to attract investors. Concessional resources must be leveraged to make these kinds of investments more appetizing to mainstream investors. Catalysing private investment is critical to ensure that both the quality and quantity of investment to the sector is sufficient to drive positive, climate-friendly practices that do not rely on indefinite philanthropy. Concessional instruments are therefore critical in reducing risk and creating an attractive commercial risk-return profile for private investors, thereby catalysing private investment that would otherwise be unavailable to African forestry.

In the context of strongly growing demand for forestry products in Africa, the Fund represents a novel approach that deals with established issues around timescale, risk and return profiles through innovative blending of concessional and commercial resources. The Fund is structured to deliver on risk and return expectations, as well as to provide positive climate change mitigation and adaptation results, and to deliver on SDG objectives. The large, positive impact of forestry creates a strong basis for blended finance solutions, further advanced by a clearly demonstrated need for concessional finance and the recent cases that have successfully deployed it.

Purpose

The overall purpose of the study is to assist the AfDB and WWF Kenya in evaluating and designing alternative private funding models for commercial forestry in Africa with a view to ultimately establishing, or aiding the establishment of, a specialized investment vehicle for new commercial forestry plantations. Among others, the study examines the structure and terms of the AfDB's *"Public-Private Partnership for the Afforestation of Degraded Forest Reserve"* project as a reference for broader potential investments.

From the AfDB's experience channelling resources through the Forest Investment Program (FIP), one of four programs under the Climate Investment Funds (CIF), the underlying premise stipulates a need for some form of concessional finance to unlock wider investment in the forestry sector in Africa. While concessional resources can be used to reduce the cost of finance, the best use in the African forestry context is to address key risks and barriers. This tactical use of concessional resources, if properly structured to address risks and barriers, should unlock the capital of institutional investors and other commercially-motivated financing. Institutional forestry investors, providing about USD 100 billion capital to the sector globally, typically require low, almost risk-free return.

Scope of Study

This study assesses the demand for targeted concessional resources to increase investment in the sector, particularly in terms of private investment that meets environmental, social, gender, climate and risk management criteria applicable to forestry. The Terms of Reference (TORs) for the study, provided in full in Annex A, outline three specific cases to be analysed, as well as some other flagship sector reports that provided background information to the study. These secondary sources were complemented with hands-on market research, achieved primarily through a comprehensive stakeholder engagement process. Drawing on the dimensions of analysis above, the study uses multiple lines of evidence to:

- i. Evaluate the particular barriers and risks faced by small and large-scale private investors in commercial forestry plantations, segmented between Greenfield, Brownfield and, to a more limited extent, Downstream Processing investments;
- ii. Design, compare and contrast various options for delivering catalytic finance to the African forestry industry, including structural options through which blended equity or debt can be invested in both Greenfield and Brownfield commercial forestry plantations and wood processing investments

Based on the options defined, the study should support the detailed design of a new facility for African forestry investment.

Structure of Report

The remainder of the report is divided into three main sections, as described in Table 1.

Table 1: Summary of Report Structure²

Section	Contents
Summary of Work Undertaken	<p><i>Presents the overall methodology and a narrative of the study's phases, from kick off to formulation of the strategy presented in the next section</i></p> <ul style="list-style-type: none"> › Presents summary analysis of key cases relevant to the study [p. 7], stakeholder consultations [p. 11] and findings from global conferences attended by the team [p. 12] › Outlines the current conditions of forestry investment in Africa, both companies and financiers [p. 13] › Identifies key barriers [p. 14] and risks [p. 16] impeding growth of the African forestry sector and/or inhibiting private investment, particularly those identified by stakeholders › Examines the role of forestry in the context of climate change [p. 18], sustainability [p. 21], and gender [p. 22] › Describes the process by which structural options were defined, analyzed and ranked [p. 27] › Summarizes later-stage engagement with potential co-investors (DFIs especially) [p. 28]
Proposed Strategy	<p><i>Presents the proposed strategy, derived from the study's findings as described in the Work Undertaken section</i></p> <ul style="list-style-type: none"> › Lays out the opportunity for transformation identified by the Acacia team [p. 32] › Summarizes the overall strategy of the Fund [p. 33] › Further details on the proposed strategy can be made available to prospective investors upon request.
Implementation Plan	<p><i>Defines the overall process to launch the Fund</i></p> <ul style="list-style-type: none"> › Illustrates a road map for implementation [p. 46], including: <ul style="list-style-type: none"> › engagement of key partners › selecting a fund manager and › sourcing deals from the indicative opportunities

Alignment with Other Initiatives

The CIF E&L Initiative, which provided financial support for this study, seeks to support learning from CIF across all operational levels, from projects through portfolio and thematic levels. Its specific objectives are twofold:

- › To capture evidence and lessons on an ongoing basis so that they can inform ongoing CIF activities within an actionable time horizon
- › To identify valuable evidence and lessons learned to inform current and future climate finance investments³ [for the CIF and other climate financiers].

² Note: page numbers are hyperlinked to relevant sections.

³ For more details, see the CIF E&L Business Plan, published 24 May 2016.

This study analyzes, among other things, two transactions⁴ supported by the FIP. Given the importance of afforestation and sustainable forestry in terms of emissions reductions and environmental sustainability, lessons from specific blended finance transactions are relevant to future programming by CIF and other climate financiers in the sector. The findings of this report may also inform future opportunities where concessional finance can be deployed to leverage substantial co-investment in forests, which can be a major asset in mitigating and adapting to the effects of climate change.

The CIF E&L Initiative focuses on four priority learning themes. Of these, two are most relevant in the context of this study:

- › **Transformational Change:** how past FIP contributions in Ghana and Mozambique have contributed to transformational change in the African forestry sector and climate change action overall
- › **Private Sector Investment:** how financing models used in these two transactions catalyzed private investment and enabled the establishment of new, privately managed plantations

The study also recommends how to apply these lessons in a new financing platform for sustainable forestry in Sub-Saharan Africa, which is described later in the document. More broadly, it addresses how concessional finance, particularly through intermediated investment structures, can be effective in catalyzing private participation in African forestry investments over the coming years.

⁴ *Public-Private Partnership for the Reforestation of Degraded Forest Reserve (AfDB) in Ghana and Emissions Reductions in the Forest Sector through Planted Forests with Major Investors (IFC) in Mozambique*

Summary of Work Undertaken

This section summarizes the work undertaken to arrive at this draft final report, guided by the TORs for the study as well as adaptations through the evolution of the project. The work is presented primarily in chronological order as it was undertaken over the course of the assignment. This report, and the recommendations presented in later sections, is the culmination of work undertaken to-date.

Kick-off Phase

This section outlines key factors from this early phase of the assignment that influenced the course of the study.

The final Inception Report laid out a revised task structure for the assignment, outlining a number of key activities that were to be undertaken as components of the study. Overall, the study was streamlined into four main work phases. Figure 1 outlines the overall task structure. A detailed description of the underlying activities in each of the four overall phases is provided in Annex B. The revised work plan, updated to the submission of this report, is provided in Annex C.

Figure 1: Assignment Work Plan



Stakeholder Identification & Engagement Strategy

The Inception Report identified 39 key stakeholders, mapped across eight different categories. It also outlined interview guides that the research team would later use to guide interviews of these stakeholders. The stakeholder interview guides, organized by the eight stakeholder types, are provided in Annex D.

Preliminary Observations

The inception report outlined a number of preliminary observations on the current state of African forestry, derived primarily from desk research and the study team's experience in the sector. These preliminary observations were confirmed or refined through the subsequent phases of the assignment.

Case Analyses

This section presents the case analyses undertaken primarily through desk review of existing documents. In some cases, the findings were augmented or confirmed through stakeholder consultations. Key analyses to integrate in the study, as prescribed in the TORs, included three country-level analyses, FIP-supported programs in Ghana and Mozambique and a smallholder program in Uganda.

Country-level Desk Analysis

In place of the originally envisaged field research, it was agreed that the team undertake in-depth analysis of the forestry industry in three countries: Ghana, Mozambique and Uganda. The objective was to identify the investment needs of the forestry industry and potential financing opportunities for AfDB. The analysis confirmed significant opportunities for upstream equity and some debt financing in Ghana and Mozambique, while the opportunities in Uganda were primarily downstream.

FIP-AfDB Project Analysis

The *Public-Private Partnership for the Afforestation of Degraded Forest Reserve Project* (hereafter “FIP-AfDB Project”) is a USD 24 million blended loan that was approved in 2016 to Form Ghana Ltd. USD 10 million was provided by FIP, while USD 14 million was provided by the AfDB; the two loans together provided a concessional debt package with overall terms that were sub-market (i.e. blended concessional and commercial) in terms of interest rate, tenor and grace period and therefore highly competitive and catalytic. As one of the forefront examples of blended finance in agriculture and forestry in Africa, and one of the few successful debt transactions in African forestry over the past decade, detailed analysis of this project was warranted in the context of this study. Specifically, an in-depth review of the concessional elements of the project and its scalability was undertaken.

The study team evaluated this transaction against five principles for the use of concessional finance, as developed by the DFI Working Group on Blended Finance for Private Sector Projects. Table 2 presents a summary of this analysis.

Table 2: Analysis of FIP-AfDB Project against DFI Principles for Blended Finance

Principle	Analysis
i. Additivity	<ul style="list-style-type: none"> › Ordinary debt would likely not have been feasible; commercial terms were not appropriate and no other feasible source for debt financing was available › Facilitates attractive terms for forestry projects in Africa, compensating for grant payments and advantages available in other jurisdictions › FIP-AfDB Project addresses market externalities on private risk perception for long-term loans in Africa outside of hard infrastructure
ii. Crowding-in and Minimum Concessional	<ul style="list-style-type: none"> › Debt provided by FIP & AfDB catalysed a USD 19.4 million investment by the sponsor and a commitment of USD 3 million from operations, enabling an expansion of 6,700 ha of afforestation › Ongoing operations (e.g. replanting) will be funded solely by operating revenues, and there will be little need for concessional re-finance › The concessional facility has generated a leverage ratio of almost 4x › It is unlikely that additional planting would have happened without the concessional support provided by FIP › The FIP loan was tailored-made to accommodate the specification of the transaction and efforts were made to avoid market distortion.

Principle	Analysis
iii. Commercial Sustainability	<ul style="list-style-type: none"> › Blended finance package enables financial sustainability of the plantation in terms of debt capacity required by non-concessional lenders › Duration of concessional support finite (limited to tenor of FIP loan), with reliable expectations that no further concessional support will be required › Global market conditions for teak, as well as the export trends for Ghana, have been thoroughly analysed in consideration of the project and support the commercial sustainability of the project
iv. Market Reinforcement	<ul style="list-style-type: none"> › The project is focused on enhancing the health of depleted forest areas but extracts no financial revenues (at least not in the financial model) for these ecosystem services; reinforcement of afforestation through commercial investment and market-based approaches are uniquely achieved through this project compared to other potential uses of concessional finance › The project will bolster Ghana's teak exports through sustainable harvesting, whereas most exports up to the 2000s were from illegal logging; the project's success reinforces export markets in a sustainable way, which otherwise showed signs of deterioration as natural forests were depleted › The project represents less than 1% of internationally-traded teak, and as such will create no global market distortions; it will increase local supply of sustainable teak, which may lead to a lower price and increased competition
v. Standards Leadership	<ul style="list-style-type: none"> › The project is the only FSC-certified plantation in West Africa, and therefore stands out as a leader in terms of international forestry standards › While not part of commercial viability analysis, the project also adheres to Verified Carbon Standard (VCS) in confirmation of its GHG emission offsets › The project directly complements reducing emissions from deforestation and forest degradation (REDD+) efforts › Using a benefits-sharing agreement, it also ensures that 20% of the project revenues are shared with the national Government, local landowners and the peripheral communities for development activities

Against the Blended Finance Working Group's five principles, the study finds that the project generally complies with best practices as relates to the use of concessional resources for private sector operations. The FIP-AfDB Project represents the first blended 'plantation loan' provided to the forest industry in Africa. It is a highly promising type of blended finance that will likely catalyse further investments in African forestry.

However, Most African forestry companies are already highly leveraged [see p. **Error! Bookmark not defined.**]; their inability to source additional equity would prevent them from increasing even concessional debt. Similarly, very few African forestry companies could source a corporate guarantee similar to that provided by Form Ghana's shareholders. Therefore, the scalability of long-term forestry loans, even on blended finance terms, depends first on a substantial influx of equity investment in the sector.

Key Finding

Assuming the equity position of African forestry companies are strengthened, a second phase of the highly impactful FIP-AfDB project could be considered. A program proposal [see p. 45] to provide blended forestry lending could reduce transaction costs while bolstering value-added of concessional resources. More importantly, such an approach would likely mitigate some equity risk and play a catalytic role in leveraging other capital sources. A programmatic approach could increase the leverage potential with pre-set criteria, optimizing minimum concessionality.

Mosaic Planting in Mozambique

The International Finance Corporation's (IFC) FIP Mozambique program is a USD 1.85 million grant for 'Emissions Reductions in the Forest Sector through Planted Forests with the Private Sector,' which was approved in 2017. It aims to support "smallholder farmers, Small and Medium-sized Enterprises (SMEs) and plantation forestry companies to transform degraded landscapes into highly productive mosaics of forestry blocks, out-grower tree production, houses, agricultural fields and well-managed natural forests," according to the project document.⁵ It furthermore states that "one important element of the IFC approach will be to define and register land rights for 14,000 households in and around IFC client plantation concessions in Zambezia province, as clear land title is the first step in improving forest, soil, and other natural resource management." This is a critical component of large-scale forest landscape restoration and is believed to be of significant positive value for Portucel.

The World Bank MozFIP program includes a USD 8.8 million grant and 13.2 million loan which was co-financed by another USD 15 million from the World Bank International Development Association (IDA) and USD 10 million from the World Bank Integrated Landscape & Forest Management Multi-Donor Trust Fund. IFC also has a USD 1.85 million loan for related activities, and an additional Dedicated Grant Mechanism USD 4.5 million grant was provided.

MozFIP is managed by *Fundo Nacional de Desenvolvimento Sustentável* (the national sustainable development fund), which announced tenders for three agricultural and afforestation programs in Zambezia and Cabo Delgado provinces in 2018, including performance-based forest establishment grants.

Key Finding

Some of these programs will be supportive of Portucel's planting activities in Zambezia, but also critically depend on the success of Portucel's operations. From data obtained, it is uncertain whether any of these programs are yet operational. However, the importance of concessional finance to catalyse and leverage additional financing from DFIs and, later on, private (direct & indirect) investors is evident in this series of transactions.

Smallholder Grant-support Programs in Uganda

The Sawlog Production Grant Scheme (SPGS) in Uganda has facilitated a total of about 40,000 ha of commercial plantations that individually range in area from about 50-3,000 ha. SPGS provided performance-based cash grants for plantation establishment by pre-selected developers and has facilitated extensive technical support, training programs and seed supply. The methodology and training material worked well, and SPGS is among the most successful examples of smallholder forestry programs in Africa. SPGS built a strong organisation as a separate unit outside of the Government forest administration, which might have been a key reason for its success. It was initially funded by the European Union with later contributions from Norway and the Food and Agriculture Organization. SPGS has now entered its third phase and is still operational. SPGS has made significant contributions

⁵ See <http://pubdocs.worldbank.org/en/214891531832563062/4126-PFIPMZ032A-Mozambique-Proj-Documents.pdf> for the full report.

to the forest cover in Uganda and most of the forest is believed to be replanted after first harvest.

The largest smallholder afforestation in Africa since 2000 has taken place in Tanzania's Southern Highlands, with estimates of more than 150,000 ha of smallholder and small to medium size plantations established. This activity, driven by local people, was originally supported by seedlings, etc. from the commercial forestry sector, at times in the shape of organised out-grower programs and more recently by donor funded programs like the Private Forest Programme. However, the smallholder planting in Tanzania was primarily driven by the perception of forests as an attractive cash crop.

Along with SPGS, there are a few other examples of smallholder forestry projects that have achieved significant development results. However, these smallholder programs are almost entirely funded by grants rather than third party loans or equity contributions.

Key Finding

Some forestry companies, on the other hand, have extension programs to smallholders that either focus on (a) agriculture around plantations or (b) "outgrower" style programs. The former approach generates co-benefits for both the plantation and the farmers, as it helps to share the burden of weed control, fire reduction and pest management. The latter approach is less reliable for many reasons, including the fact that outgrowers lack the technical skills to ensure high quality trees and at times focus on preserving underlying land ownership rather than developing the crops growing on the land.

Stakeholder Consultations

Following the inception report, the team embarked upon the second phase of the assignment, which focused on initial research interviews of key stakeholders.

Interviews

Over the consultations phase, 42 stakeholders were interviewed⁶ and provided input that shaped the study's findings. Follow-up interviews [see p. 28] after the consultations phase brought the total count of stakeholders engaged to over 60. Table 3 summarizes the key findings from these consultations. Annex E presents the comprehensive notes from interviews with each stakeholder.

Table 3: Key Findings from First-Round Consultations

DFIs & Dev. Agencies	Forestry Companies	Fund Managers & Investors
<ul style="list-style-type: none"> › An informal grouping of DFI forestry investors already exists, and they are interested to engage with AfDB further › Others are active in the sector but may not actively engage with other DFIs › Others are interested in the sector as a co-financier, but don't have the capacity to lead investment › Others have no/little footprint in the sector and aren't prioritizing it › Other concessional resources may be available › Typical drivers for forestry investment are climate change or poverty alleviation › <i>Many DFIs are interested in the output of this study as a way to work together – a "public brief" of study outputs would be useful⁷</i> 	<ul style="list-style-type: none"> › Many indicate that risks are country-specific and vary widely between countries, making multi-country strategies challenging to define and finance › Only the largest are able to attract leverage efficiently – many operate on equity-only basis even for downstream investments › Almost all operate in compliance with FSC certification requirements; many are also in compliance with International Standards Organization (ISO) 9001 › Immaturity of value chain cited as a key barrier to plantation expansion; however, there is also a strong and viable local market for processed timber products (currently import-based) › Very little appetite overall for corporate debt; many experiences with mezzanine debt are mixed to negative 	<ul style="list-style-type: none"> › Absence of experienced management is a leading barrier to further investment › Land tenure, political instability and exchange rate are major risk factors › Some indicate that structuring funds with longer lifetimes makes it more difficult to fundraise vis-à-vis other investment opportunities › Some indicate that there are few investors conversant in forestry › Only a few funds currently focus on Greenfield investments – most prefer mature asset acquisitions › Some global forestry funds are keen to focus more in Africa (e.g. NewForests)

⁶ Interviews were principally conducted by phone or in person; a small number were undertaken by email correspondence.

⁷ This is the public version of the original report, which has been produced for full public disclosure, in line with the CIF transparency policy.

Conference Participation

This section summarizes the key findings from the team's participation at two international forestry conferences, drawing on participant presentations and informal discussions with key participants at each conference.

The team participated in two key conferences that were relevant for the study. First, The World Forestry Centre's annual forum themed, "[Who Will Own the Forest](#)," took place on 25-27 September 2018 in Portland, Oregon. This conference was primarily focused on North American forestry activities, and the topic of "frontier markets" focused solely on Brazil and India. However, our team was able to secure some relevant global timber market data, as well as relevant input from some impact investors and non-governmental organizations (NGOs) in the space. One key observation from the conference (confirmed by the study team's sector experience) was the prevalence of the TIMO structure as the global standard for forestry investment brokerage. Box 2 provides more information on TIMOs.

The second conference was Global Timber Invest's [10th Annual Forum](#) in London on 16-17 October 2018. It was primarily focused on alternative investment schemes in the forestry and agriculture industries. Notably, FMO, the Dutch DFI, gave a presentation about its forestry investments and identified barriers that should be overcome for successful long-term engagement with the industry. FMO said that it plans to abstain from pure greenfield investments, but that expansion of existing operations may qualify. Poyry, a leading forestry consultancy, presented a global sawn timber demand and pricing model which suggested 3% real price growth going forward, which is a significant improvement over the assumptions held over the last decades.

Box 2: What is a TIMO?

The primary structure used by international timber investors is the TIMO structure. In this structure, the TIMO (akin to a private equity fund manager) acts as the general partner in diversified or asset specific funds or as an investment advisor for investors, who are typically institutional investors. In addition to identifying, appraising and investing in plantations, the TIMO also maintains an active role overseeing the management of forest resources either directly or through subcontracted management service provider. The TIMO almost always represents a majority stake in the forestry asset.

While the TIMO model has not been deployed in Africa in a notable way, it is the primary structure used by private investors in developed economy forest investment. Spearheading the development of a similar approach for Africa would likely encourage participation by institutional investors more familiar with this model in other geographies.

Market Synthesis

This section presents a synthesis of forestry “market conditions” in Africa from an investment perspective. Specifically, it presents a “synthesized demand” for investment based on current commercial activities. It then presents a similar synthesis from the supply perspective, outlining current investment activities and sources. It also discusses key risks and barriers that inhibit greater investment.

Demand: Current Forestry Operations & Potential

The study’s market synthesis indicates that the commercial private sector has established about 125,000 ha of new plantation forests in Africa since 2000, investing around USD 800 million of mostly private capital. Inefficient establishment, the need for substantial research & development of seedlings and ancillary infrastructure investment led to relatively high per ha investment costs. Understandably, investment and growth activity has nearly halted altogether, except from two recently funded companies in West Africa: Form Ghana and Miro. The market research and interviews also indicated that smallholders have planted around two times this area over the same period but of lower quality forest, and new planting continues in some countries but has slowed or stopped in others. Government-owned forest shrank by an estimated 100,000 ha over the same period.

If investment costs are managed well, there is significant potential for afforestation projects driven by new private companies, for projects co-sponsored by government forest agencies and for financing of expansion of landscape controlled by existing private companies. This study has identified readily available projects with the potential to establish almost 500,000 ha of new forest on about 1 million ha of landscape, not including areas that existing companies and developers are already planning to use for own expansion. It also excludes early stage or speculative projects. If new capital flows into afforestation in Africa, existing projects will be expanded further and new projects created, significantly increasing the scale of afforestation and landscape restoration.

New planting by private companies has ground to a halt in recent years, with the few exceptions in West Africa mentioned above., This has occurred in spite of experienced companies having developed good quality infrastructure and maintained access to additional land areas for afforestation. The establishment of plantations by the new commercial forestry companies operating in East Africa after 2000 has stopped entirely during the last four years.

There are also significant opportunities, primarily requiring equity, for afforestation of degraded land on government plantations where the net forested areas have been shrinking during the last two decades. In these situations, there is typically a need for a new organisation to be established to manage the project. Most of the companies with which the team engaged are overleveraged with little if any additional debt capacity, but this might change over the next few years, as recent and possible future debt for equity swaps improve balance sheets.

Through consultations and desk research, the study sought to identify available land amongst the different active promoters in Africa. Because of the scope of the study, priority was placed on identifying potential expansion of private local companies, international

companies and government forests. While smallholder plantations are relevant, they are best engaged as satellite producers to larger scale commercial plantations. This finding was initially derived in early consultations and analysis of SPGS, and later confirmed through in-depth consultations with experienced forestry companies and DFIs. Overall, current investment potential for planting on land already held/managed/leased by commercial-scale forestry stakeholder is around USD 1.25 billion. Future investment potential in the medium term is anticipated to be at least as much again as current potential, though exact figures are challenging to estimate.

Barriers Facing African Forestry

The main barrier to successful investments in African greenfield planting is low historic returns (caused in part by high establishment and operating costs) compared to the perceived risks. Sovereign risk is considerably higher, on average, for countries with high natural potential for forestry in Africa compared to other countries with similar potential globally. Furthermore, investors have been discouraged from investing in the African forestry sector because returns have been unsatisfactory and because of a lack of high-profile success stories during the last 10 years.

This has partly been driven by high establishment costs and failures to develop effective routes to the fast-growing local markets. However, return expectations might have seemed unrealistically high in a global context and have come down significantly during the last 2-3 years. Only Busoga Forestry Company (owned by Green Resources) in Uganda and KVTC (owned by ASFF I) in Tanzania, the two oldest of the new breed commercial plantation companies established more than 20 years ago, have generated positive cash flow in the past decade.

To facilitate analysis and consultations, a global framework for market barriers was adapted to the specific dynamics of the forestry sector. Using this framework, the study was able to explore and identify the main barriers facing forestry investment in Africa. Table 4 presents the overall barriers framework, highlighting (in bold) the main barriers identified across stakeholder groups in our research phase.

Table 4: Market Barriers Framework⁸





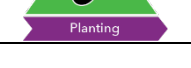







Financial Barriers	Structural Barriers	Technical/Capacity Barriers
<ul style="list-style-type: none"> › Low returns › High establishment costs › Long investment horizon/ payback period › Insufficient pipeline › Transportation costs 	<ul style="list-style-type: none"> › Lack of operational scale › Agency issues (e.g. lack of revenue for environmental services) › Land tenure challenges › Stakeholder relations › Limited exit options › Insufficient silviculture infrastructure › Insufficient downstream processing capacity 	<ul style="list-style-type: none"> › Lack of management expertise › Insufficient regulatory support › Insufficient climate resilience expertise › Limited sector data › Unproven planting material and silvicultural practises

⁸ Adapted from IFC

Alternative Investment Models for Commercial Forestry in Africa

While these barriers are meaningful, they need not be a permanent impediment preventing investment in African forestry. Consultations with stakeholders across the market spectrum yielded a number of concrete means to address each barrier. By extension, this yields a number of key opportunities to address the most prominent barriers, as depicted in Table 5. A detailed description of the plantation lifecycle stages is provided in Annex G.

Table 5: Opportunities to Address Market Barriers

Type	Barrier	Opportunity	Stage
Financial	Low returns	Mitigate key risks [see Table 6]	Varies by risk
		Promote vertical integration where opportunities arise	
	High establishment costs	Prioritize land already controlled/leased/owned	
		Channel concessional/blended finance to reduce capital cost of establishment	
		Focus on brownfield. Prioritize afforestation opportunities with low ancillary planting costs (infra, weed control, etc.)	
	Excessive leverage/use of debt to fund plantations (debt capacity exceeded)	Replace debt with equity for existing corporations; focus on primarily raising equity for new ventures rather than funding establishment with debt	
	Investor return expectations too high	Compensate for lack of subsidies (as in non-African countries) with concessional finance	
Structural	Lack of operational scale	Attract more investments/ activity. Expand nascent scale by prioritizing existing players	All stages
	Agency issues	Engage tripartite (promoter, government/community, financier) agreements to ensure stakeholder incentives are well aligned ⁹	
	Land tenure challenges	Follow FSC and other best practises	
	Insufficient silviculture infrastructure	Attract global players. Deploy grant resources to promote technical skills and capacity	
	Insufficient market information	Global comparative studies; investment in research capacity	
Technical/ Capacity	Lack of management expertise	Expand nascent scale by prioritizing existing players, increase scale and attract global players	All stages
	Untested planting material	Expand organized trials; support tree breeding and research	
	Lack of modern/efficient processing facilities	Develop and fund more capital-intensive downstream processing investments; pursue integrated projects	

⁹ For example, the Benefit Sharing Agreement included in the FIP-AfDB Project yielded strong alignment between the community, government, and promoter.

Risks Inherent in African Forestry










As with investor sentiment towards the African continent in general, the African forestry sector suffers from a high perceived risk by investors. This is particularly problematic for real and infrastructure-type assets where perceived risks are high and returns in developing markets are considered relatively low. Institutional real asset investors simply seek to avoid material risks, regardless of the size of the returns compensating for these risks. Risk mitigation is therefore critical to catalysing private investment, and this can partly be accomplished by risk mitigation schemes. A focus on highlighting progress and success stories in the industry will help to address the negative perception of risk.

As with the analytical framework on barriers above, a global framework on investment risks¹⁰ was adapted to the forestry sector and a similar approach used to map out the most critical risks perceived in African forestry sector investments. Table 6 presents the risks which were indicated as most critical across stakeholder groups. It also presents the main mitigants for each risk, as well as the intervention stage in the project lifecycle that is most relevant.

¹⁰ Also adapted from IFC

Alternative Investment Models for Commercial Forestry in Africa

Table 6: Key Risks & Opportunities

Archetype	Risk	Opportunity	Intervention Stage
Project	Costs	Deploy a structure that enables concessional investors to take a “first loss” position	All stages
		Prioritize a mix of green- and brownfield investments to balance portfolio costs	
	Human resources	Attract new entrants and management to the Continent. Need for some larger organisations. Provide targeted technical assistance	
	Complexity of landscape model	Provide targeted technical assistance	
		Boost returns with concessional investments to compensate for non-payment of enviro. Services	
		Prioritize partnerships/ investments with experienced managers	All stages
		Develop revenue streams from non-financial benefits (e.g. Adaptation Benefit Mechanism, Verified Carbon Standard, etc.)	
		Prioritize majority ownership through global TIMO model	All stages
	Stakeholder relations	Use AfDB or other MDB “honest broker” profile to convene stakeholders	All stages
		Prioritize public-private partnerships for reforestation government land	
	Technical – pests and fire	Facilitate knowledge transfer by hiring globally-experienced management firm to select and manage underlying investments	
Country	Forex	Prioritize investments with companies generating direct or indirect USD revenues ¹¹	All stages
	Inadequate policy environment/ regulatory risk	Support industry/product standards.	Harvesting, Processing
		Afforestation readiness support/Land acquisition/project establishment manuals	All stages / Land Acquisition and Planting
	Expropriation	Forestry is naturally a very resilient asset class in relation to political issues.	All stages
Financing	Availability	Raise substantial resources for investment	All stages
	Adequate tenors and profiles	Take a long-term time horizon (15-20 years)	All stages
		Invest into early lifecycle opportunities with equity	
		Build relationships with refinance providers for refi when harvest is 1-3 years away	
	Reasonable terms	Prioritize equity co-investment over debt financing	All stages
		Balance financial returns with impact to appeal to concessional and private investors	All stages

¹¹ Forestry in general is a global industry that uses the USD as a pricing basis.

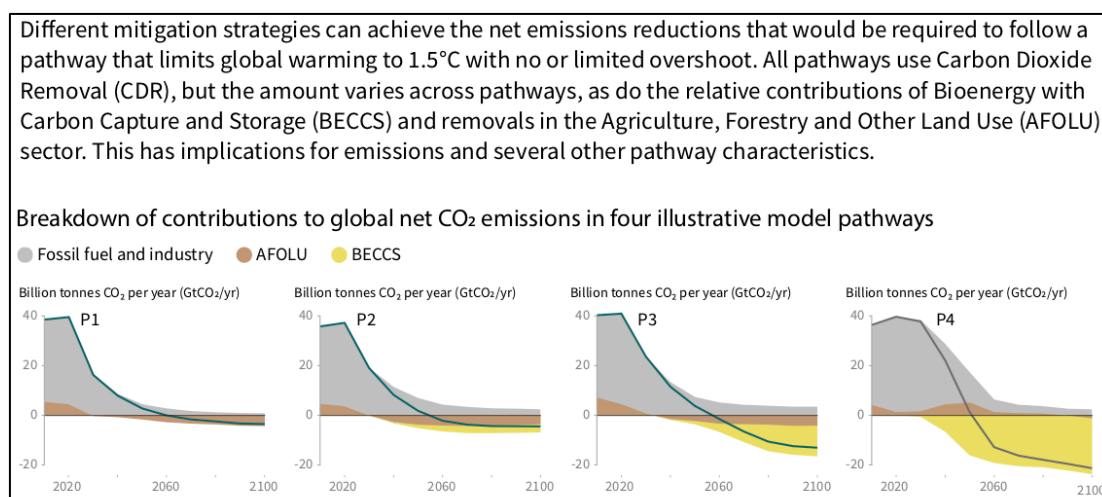
Analysis of Cross-Cutting Themes

Forestry as a sector was then analysed in terms of a number of cross-cutting themes. Specifically, these analyses were undertaken from the perspective of (a) climate change, (b) sustainability, especially the SDGs and (c) for its potential impact(s) on women and youth. These cross-cutting analyses are presented in this section.

Assessing Forestry's Role in Climate Change

IPCC's *Special Report on the impacts of global warming of 1.5°C* (SR 15) published in October 2018 strongly supports further investment in afforestation and bioenergy as they "are the two carbon dioxide removal (CDR) methods most often included in integrated pathways compatible with limiting climate change." Box 3 illustrates the four model pathways outlined by the IPCC in SR 15. Forestry activities have been developed as carbon offset projects for at least two decades, but carbon finance has to date failed to be a material source of funding for afforestation. This might change with the increased focus on afforestation and bioenergy during the last two years, culminating with IPCC SR15. Thus, new mechanisms to facilitate the larger role of forestry in climate change mitigation might provide important sources of income and/or financing.

Box 3: Four Illustrative Model Pathways (Strategies)¹²



The overall land area required for afforestation based on IPCC's analysis is larger than the afforestation opportunities suggested by WWF's reports on *Forest for a Living Planet* in 2011 and The Nature Conservancy's (TNC) study of *Natural Climate Solutions* in 2017, two of the most important reports on climate change and forestry. There has been a large amount of material published on forestry and climate change during the last two decades, creating the basis for the conclusions in IPCC SR 15. This section refers to IPCC SR15 rather than undertaking a wider literature review.

The IPCC report presents four model pathways with different mitigation strategies for limiting global warming to 1.5°C with no or limited overshoot. All four strategies rely heavily on CDR through agriculture, forestry and other land use and all but one depends extensively on Bioenergy and Bioenergy with Carbon Capture and Storage (BECCS).

¹² IPCC, 2018: Global Warming of 1.5°C – An IPCC Special Report

According to the report, all pathways limiting the temperature rise to 1.5° C require extensive afforestation activities, many times higher than what is taking place currently. Specifically, “model pathways that limit global warming to 1.5° C” would require “a 2 million square kilometre reduction to 9.5 million square kilometre increase in forests by 2050 relative to 2010” based on medium confidence models. This means that 200 million ha of existing natural forest must be saved from deforestation and 950 million ha of new forests must be established, or 24 million ha per year.

In addition, three of the four pathways proposed by IPCC for limiting warming to 1.5° C require 90-720 million ha of bioenergy crops to be established by 2050, with an average of 280 million ha of new bioenergy crops across the four strategies or 9 million ha of new bioenergy crops per year over the next 32 years providing feedstock for BECCS. Forestry is only one type of energy crop, but it may be the crop most suited for large scale expansion today. It is worth noting that afforestation is envisioned to take place in the first half of the century while BECCS is projected predominately for the second half, which “reflects the fact that afforestation is a readily available CDR technology, while BECCS is more costly and much less mature a technology.”

These are all very large numbers, requiring huge efforts and investments. To contextualize, Brazil’s entire forest plantations, the world’s largest, are currently 7 million ha, and the afforestation in Brazil has been less than 200,000 ha per year over the last two decades. During the last decade, Brazil might have accounted for almost half of intensive afforestation worldwide. Importantly, the higher the growth rate of forests and energy crops, the smaller the required areas and the more feasible the implementation. Thus, to reach the mitigation targets set by IPCC’s pathways, the world will need the type of intensive afforestation and forest landscape restoration that the Brazilian forestry industry is implementing rather than the less intensive efforts implemented in most forestry projects around the world.

The net growth in Africa’s commercial (including government) plantations since 2000 has been little more than one year’s worth of growth in Brazil, despite Africa’s afforestation potential being close to that of all South America and far ahead of the rest of the world. Interestingly, African afforestation might generate higher yields than the IPCC models assume for energy crops. The pathways for limiting global warming outlined in the IPCC report combined with the potential for afforestation in Africa suggest there is an urgent need to kick-start afforestation projects for climate change mitigation in Africa. Forestry investment initiatives, especially those that use blended finance, can play a critical role in accelerating this process, even if it will represent only a small overall step towards the ultimate goal.

Community Co-Benefits and Local Development

Forest establishment and maintenance are highly labour intensive. Afforestation typically takes place in remote, rural areas and creates employment with zero or limited wage-based employment. This is the main economic and social benefit of forest plantations. The African forest industry has created employment for tens of thousands of people.

Many afforestation projects in Africa have been combined with significant local development programs. For projects established on public land, these programs are an integral part of the land acquisition agreements, where the companies make the required land lease payments to the central Government and enter into development programs with the individual villages where the afforestation activities will take place. Thus, they are a key part of the legal basis for the operations and not just corporate social responsibility activities that the companies might also support.

With improved physical infrastructure, remote local communities have been better able to attract the staff required to run these government-provided services. The development programs have become a key part of, and increasingly a prerequisite for, the land use agreements, for instance in Mozambique. These programs may cost USD 20-250 per ha of established forest plantation. They have had large local impacts and at times tripled investment in municipal infrastructure. These costs are additional to the annual land rent typically paid to the central Government, but the total costs of the lease payments and development programs are still below the cost of obtaining similar forestry land in South America. Combined with substantial co-benefits in the form of climate action, reduced climate vulnerability, restoration and employment created by the afforestation activities, development programs for the local communities are another major attraction of commercial afforestation in Africa.

These programs have focused extensively on social and hard infrastructure investments, including, among other things: construction of schools, health centres, nurses and teachers' houses, water wells, and roads as part of the land use agreements with the local communities. In Tanzania, forest companies are responsible for up to 50-75% of the public infrastructure in the villages where they operate. Such development programs have also included income-generating activities like farm forestry, agriculture, animal grazing and non-wood forest products. These activities will be an integral part of projects when commercial forestry is part of a larger Forest Landscape Restoration (FLR) project. The non-commercial parts of these FLR projects might attract separate funding but have historically been partly funded by the forestry company.

Farm forestry programs might have taken the form of out-grower programs or direct assistance for establishment of forests. In addition to providing future income for the farmers, farm forestry programs align the interest of the neighbouring communities with those of the commercial forestry company, particularly in relation to fire control. They also increase the future wood availability, which will facilitate a larger and more efficient wood processing industry. Agricultural programs are likely to increase the farm income, the food security and the well-being of the workers, in addition to facilitating improved utilisation of the landscape and increased resilience. Animal grazing usually contributes positively to the silvicultural activities.

Almost 90% of East Africa's population depends on wood-based energy. Providing an alternative sustainable source of wood-based energy is a pre-requisite to halting deforestation, which can be done through afforestation. Owners of commercial forests often allow the local population to collect firewood from thinning and harvesting residues. This, however, provides wood-based energy without destroying the forest completely.

Forestry and the SDGs

Modern forestry, as an industrial activity, is very well aligned with the SDGs. Gone are the days of clearcutting natural forests, and most forest investors clearly see their role as both profit generators and stewards of precious natural resources. Table 7 provides some detailed discussion of how forestry aligns with key SDGs.

Table 7: Forestry in the Context of Select SDGs

Goal	Sub	Sustainable Forestry's Contribution
7 AFFORDABLE AND CLEAN ENERGY 	7.1	<ul style="list-style-type: none"> Increases sustainable utilization of wood-based biofuels, which account for a major portion of household energy use in Africa
	7.2	<ul style="list-style-type: none"> Industrial, wood-based biofuel and cogeneration are renewable energy and energy efficiency opportunities unlocked by forestry
8 DECENT WORK AND ECONOMIC GROWTH 	8.2	<ul style="list-style-type: none"> Enables high-value added and labour-intensive diversification, especially in rural areas in Africa that have limited diversification potential
	8.4	<ul style="list-style-type: none"> Directly decouples economic growth from environmental degradation
	8.5	<ul style="list-style-type: none"> Provides decent, long-term labour opportunities for women and men
	8.6	<ul style="list-style-type: none"> Provides decent, long-term labour opportunities for youth, as well as skills development opportunities and knowledge transfer
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	9.2	<ul style="list-style-type: none"> Promotes sustainable industrialization and industrial jobs Increases industry's share of employment; increases GDP
	9.3	<ul style="list-style-type: none"> Integrates smallholders and smaller producers into global value chains Creates smallholder assets that can be collateralized Promotes creation of rural enterprises to support value chain
	9.4	<ul style="list-style-type: none"> Increases overall adoption of industry to sustainable standards Increases resource-use efficiency through the use of timber products and timber-based biofuel
	9.A	<ul style="list-style-type: none"> Increases sustainability and resiliency of associated infrastructure in Africa/Least Developed Countries
12 RESPONSIBLE CONSUMPTION AND PRODUCTION 	12.2	<ul style="list-style-type: none"> Greatly increases sustainable management of forests Increases afforestation and reforestation of degraded forest reserves Encourages use of timber in local markets in place of high GHG products
	12.A	<ul style="list-style-type: none"> Facilitates technology/knowledge transfer of sustainable forest management to developing countries Increases skilled forest management labour pool in developing countries
13 CLIMATE ACTION 	13.1	<ul style="list-style-type: none"> Greatly increases resilience of forest resources to climate-related hazards Increases adaptive capacity of nearby infrastructure, agriculture and other land uses
	13.3	<ul style="list-style-type: none"> Increases human capacity for climate change mitigation and adaptation achieved through sustainable forestry
	13.A	<ul style="list-style-type: none"> Provides a relatively straightforward opportunity to mobilize private capital towards climate finance Provides a funding opportunity for GCF, CIF, GEG and other climate funds
	13.B	<ul style="list-style-type: none"> Creates a tangible opportunity to invest locally in skills and capacity for climate-change-related planning and management
15 LIFE ON LAND 	15.1	<ul style="list-style-type: none"> Greatly enhances the active, sustainable management of forests and associated land near sustainable plantations
	15.2	<ul style="list-style-type: none"> Links profit incentives with sustainable management practices - the best performing plantations are among the most sustainable
	15.7	<ul style="list-style-type: none"> Reduces demand for illegally harvested natural forest materials through local engagement and development of timber product value chains
	15.8	<ul style="list-style-type: none"> Aligns profit incentives with management of invasive plant and pest species
	15.A	<ul style="list-style-type: none"> Provides a key opportunity to mobilize private investment alongside public resources to sustainably use forest (and reforested) ecosystems

Goal	Sub	Sustainable Forestry's Contribution
	15.B	<ul style="list-style-type: none"> › Directly finances sustainable forest management › Provides key incentives to developing countries to attract forest investments

Beyond the SDGs, the new breed of private forest companies are part of the formal sector and therefore contribute to domestic resource mobilization through tax payments. Economically, domestic timber production also offsets imports, ensuring more stable local prices and reduced reliance on timber imports. Africa overall is a net importer of wood products, so any domestic production expansion would be beneficial. The new generation of African forestry companies have also reformed the quality standards of many products, including utility poles.

There are also major environmental benefits that generate achievements towards SDGs 13 and 15. Afforestation typically makes a significant contribution to landscape restoration, biodiversity and environmental resilience. Only 50-60% of the degraded forest and grass land used for plantation establishment is typically converted to plantation forestry. This means that the remainder is available for other land uses, which can contribute strongly to the quality of the landscape-level ecosystem, particularly in terms of biodiversity and protection of waterways. When burning is controlled in the remaining areas, large areas of natural forests can re-appear in valley bottoms and other protected areas. Thus, the mosaic-based forest plantations become effective and diverse forest landscape restoration projects help to contribute to regrowth of natural forests and increased biodiversity.

Sustainably managed forests protect wetlands and valuable habitats (e.g. natural forests). High Conservation Value areas, wetlands, cultural sites and other valuable areas. Such areas are identified by experts during the initial site scoping and impact assessment and then managed separately. Forestation helps fight erosion, and the presence of increased root systems limits soil erosion and water leaching. Sustainable forest managers monitor hydrological resources, including water flow and quality. There has been a tremendous reappearance of wildlife in the East African plantation forests and their landscapes.

Most afforestation projects follow the principles of WWF's New Generation Plantations (NGP) directly or implicitly. Five of the seven largest forest companies active in Africa since 2000 are FSC certified with about half of the 125,000 ha of commercial forests established since 2000 being FSC certified. This means that about 62,000 ha of plantation forests in Africa outside of South Africa are FSC certified. Most institutional investors and DFIs have made FSC certification a prerequisite for investments and lending to the forestry sector, and it is recommended that this shall also be the case for the Fund. It also makes sense to align closely to the work of NGP.

Forestry and Gender-Responsive Development

Sustainable commercial forestry plantations create substantial employment opportunities for both men and women, as well as for youth. Afforestation most often takes place in remote rural areas where forest establishment and maintenance are the largest and often only source of paid employment. In such contexts, a significant part of the workers are women – often more than a third and sometimes more than half of a plantation's workforce.

Furthermore, linked community development¹³ has added considerably to the benefits created by commercial afforestation projects in Africa. New economic activities can contribute to more climate resilient households, communities, and economies. Modern approaches, particularly those driven by responsible investors, demonstrate strong commitments to gender-responsive development.

As forests are restored and new forests established, the biomass production is increased and access to waste wood for firewood, and later to the clean cooking value chain, is much improved. There are further benefits to the surrounding environment, soil quality and water supply. This makes local life better quality and reduces drudgery tasks, particularly for women and girls.

Forming an Alternative Investment Strategy

This section outlines the process by which the team defined options for an alternative investment strategy, ranked the best options and outlined the complete strategy presented later in this report.

While the market synthesis was underway, the team also began to formulate a structure and strategy for the catalytic investment platform to be defined in this study. This was an iterative process that consisted of the following steps:

- i. Brainstorm the full range of structural/strategic options
- ii. Define details of each structure/strategy
- iii. Develop a scoring framework to objectively assess each option against market, institutional and ease-of-operations factors
- iv. Rank options relative to one another
- v. Consult with internal and external stakeholders on best-fit options
- vi. Flesh out detailed strategy and structure for best-fit option

Identification of Structural Options for the Fund

Based on examples from other industries and continents, as well as through a review of recent innovations in development finance, the team defined ten distinct structural options that could be deployed to support forestry in Africa. Some overall structures had specific variants that were considered and further explored; these variants typically relied on further structuring of different tiers, tranches or shareholding classes to integrate concessional finance. Table 8 presents the structural options with descriptions and links to example facilities/programs using this option, many of which come from outside of the forestry sector.

¹³ For example, see the benefits sharing agreement in the FIP-AfDB Project.

Alternative Investment Models for Commercial Forestry in Africa

Table 8: Structural Options, Definitions and Examples

Structure Concept	Description	Examples
i. Equity Fund	Invests in the equity/quasi-equity of established forestry companies and/or early capital for greenfield projects using a (15)+ year fund life (longer than the existing funds)	<ul style="list-style-type: none"> › Althelia › FIM/Arbaro › CAP/ASFF II
ii. Debt Fund	Lends capital to forestry companies for greenfield establishment and maintenance investments. Provides (15) year loans with a fund lifetime \geq (18) years	<ul style="list-style-type: none"> › Vantage Risk Capital
iii. Intermediated Debt Fund	Lends capital to banks and/or non-bank financial institutions to incentivize their on-lending to the forestry sector, particularly for smallholder or smaller-scale, larger volume portfolios (e.g. agricultural lending programs)	<ul style="list-style-type: none"> › REFFA › Medical Credit Fund
iv. Captive Guarantee Fund	Standalone fund provides guarantees to off-load specific risks from commercial transactions undertaken between lenders and borrowers; are used to guarantee investments by others into forestry companies	<ul style="list-style-type: none"> › Africa Energy Guarantee Fund
v. Fund of Funds (FoF)	Fund that invests in other funds targeting forestry sector investments; may use equity, debt or a combination thereof; could also be used as a "seed" to incubate funds investing in certain sectors or segments	<ul style="list-style-type: none"> › South Suez › Avanz Capital › Capria (Seed Fund of Funds)
vi. Co-Investment Vehicle	Provides co-investment alongside other equity or debt providers, either on <i>pari passu</i> or subordinated basis; can be arranged on a framework/prequalified basis, or on a project-by-project basis	<ul style="list-style-type: none"> › Climate Smart Agriculture Fund
vii. Holding Company	Evergreen entity that takes positions in a portfolio of projects, governed by shareholders; abides by its own credit/investment policies and procedures, as determined by shareholders; instruments also governed by shareholders	<ul style="list-style-type: none"> › Globaleq › Maris Africa › African Century
viii. Multifunctional/Multi-fund platform	Tailored platform of funds managed collectively under a single entity; sub-funds target key financing gaps in the plantation lifecycle	<ul style="list-style-type: none"> › Africa50
ix. Conservation Bond	Securitizes forestry assets to unlock capital up-front through as a tradeable asset (bond)	<ul style="list-style-type: none"> › REDD+ Forests Bond
x. Blending Framework	Replicate the FIP-AfDB project with a pre-formulated pipeline presented as a bundle	<ul style="list-style-type: none"> › "PPP for the Afforestation of Degraded..." FIP Transaction

As part of the analysis of these options, the study team and AfDB had a joint discussion on the various strengths and weaknesses of each structural option in the context of African forestry. The breakdown of strengths and drawbacks for each structural model is provided in Table 9.

Alternative Investment Models for Commercial Forestry in Africa

Table 9: Structural Options Strengths & Drawbacks

Structure	Strengths	Drawbacks
i. Equity Fund	<ul style="list-style-type: none"> › Directly catalyses Greenfield forest establishment › Makes early project investments, shortly after “proof of concept” planting seasons › Shares in project risk equally with other investors › Can provide equity capital at the corporate level to: <ul style="list-style-type: none"> › Accelerate existing planting programs › Make brownfield expansion opportunities feasible › Maintain standing forests › Can co-invest with other/existing funds › Is relatively cost efficient 	<ul style="list-style-type: none"> › May face challenges raising capital › Existing funds already competing for investment › Equity may already be “saturated” in the sector › Returns are likely to be low relative to other sectors › Fund lifecycle likely longer than other sectors › All capable fund managers may already be engaged with other funds
ii. Debt Fund	<ul style="list-style-type: none"> › Addresses demand for sector-tailored lending products, which aren't widely available › Specialized management and credit underwriting process compared to commercial banks enables better engagement with foresters › Reaches projects that may be too small or outside normal risk parameters (e.g. longer tenor) than AfDB/DFI lending allows 	<ul style="list-style-type: none"> › Single sector risk concentration › Intermediation adds “mark up” to debt at the project level › Has a fixed return (which may not be a turn off for all investors, but some) › May be challenging to secure investors over term required for forestry (other funds are 7-10 years total lifespan)
iii. Intermediated Debt Fund	<ul style="list-style-type: none"> › Suitable for small & medium-sized enterprise (SME) forest financing › Enables a country-by-country approach that can be aggregated across regions › Attractive for downstream/processing investments (medium term, relatively high risk) › Can catalyse new technology, technology transfer, and value addition in the forest products value chain 	<ul style="list-style-type: none"> › Relies on lending appetite of local/regional banks, which is already quite low › May not deal with underlying risks in the sector › Poorly suited to plantation investments › Expensive; banks will likely underwrite large mark-up for medium and long-term loans › Recently tested by TNC with limited/no success
iv. Captive Guarantee Fund	<ul style="list-style-type: none"> › Can facilitate long-term lending from DFIs › Can free up credit limits and overheads from investors with appetite for additional investment but lacking free capital › Underlying capital can be leveraged and/or recycled if it is uncalled 	<ul style="list-style-type: none"> › Requires detailed modelling and active risk management by experts › Some guarantee providers already exist and focus on the sector such as the Swedish international Development Agency (SIDA) › Disbursement and management of funds may be challenging for some donors › Private sector co-investment will only come from reinsurers, others

Alternative Investment Models for Commercial Forestry in Africa

Structure	Strengths	Drawbacks
v. Fund of Funds	<ul style="list-style-type: none"> › Supports existing/proven investment strategies with additional capital, absent competing for the same pipeline 	<ul style="list-style-type: none"> › Investing in existing funds already possible directly; little advantage to establishing a fund as an additional admin layer › Small number of existing funds can already be identified › High Transaction Costs
vi. Co-Investment Vehicle	<ul style="list-style-type: none"> › Utilizes “framework” arrangements with lead investors to enable greater levels of investment › Relatively simple to establish and capitalize › Provides flexibility of terms to enable what would be commercial investments to be more concessional 	<ul style="list-style-type: none"> › Typically relies on due diligence by another entity; unclear if sufficiently sophisticated lead investors are active in the sector › Additionality is limited; can already be done by existing debt/equity funds and banks/DFIs › Restrictive mandate
vii. Holding Company	<ul style="list-style-type: none"> › Overcomes time-sensitivity of fixed term funds › Enables more flexible deployment of capital › Has better ability to apply top-down pressure for better organizational performance, particularly in environmental, social and governance (ESG) issues 	<ul style="list-style-type: none"> › Return prospects are variable/less than a fixed-term fund for private investors › Likely only to attract DFI/donor capital › Governance can be challenging
iii. Multifunctional Platform	<ul style="list-style-type: none"> › Ability to tailor support to case-by-case needs › Can be designed to address risks that vary across the forestry project lifecycle using best-fit instruments at each stage › May even be able to help prepare investments through joint development agreements and similar mechanisms 	<ul style="list-style-type: none"> › Expensive to operate (admin relative to capital deployment) › Long setup time, requires substantial political capital to mobilize › High capital requirements
ix. Conservation Bond	<ul style="list-style-type: none"> › Uses securitization to transfer capital within forestry transactions › Helps to monetize carbon credits for other uses › Has been deployed by other institutions 	<ul style="list-style-type: none"> › Won't directly unlock investment in greenfield plantations › Appeal to institutional investors may be low because of underlying country risk in Africa
x. Blending Framework	<ul style="list-style-type: none"> › Utilizes a proven model in a clear-cut manner to up-scale similar investments › Enables low-cost financing through proven mechanisms › Enables further testing of model using primarily internal back office resources – can be very cost efficient 	<ul style="list-style-type: none"> › Serves as a one-time transaction or group of transactions; scale may be limited by available pipeline at the time of approval › Requires substantial sub-market (concessional) capital to be effective, which will be difficult to procure at necessary scale

The team also identified a number of “accessory features” that could be added to different structures to augment the breadth of reach of the structure, particularly when considering concessional finance within each structure:

- › FLR Grant Sub-Facility
- › Technical Assistance/Capacity Building Grant Sub-Facility
- › Incubator/Accelerator for SMEs and Smallholders
- › First Loss Mechanism

Structural Option Ranking

In order to rigorously and systematically select the best structural option, the study team created a forced-ranking process that sought to organize the ten options according to how well they met certain criteria. The five main criteria used were as follows, with sub criteria outlined in Table 10:

- i. Relevance
- ii. Breadth
- iii. Investor Appeal
- iv. Practicality
- v. Likelihood of Achieving Desired Outcomes

Table 10: Ranking Criteria & Sub-Criteria

Crit.	Sub-Criteria	Key Questions
Relevance	Addresses a large, demonstrated market gap	<ul style="list-style-type: none"> › Can the structure meet an unmet requirement for capital? › Will the structure provide enough scope/scale to address the gap?
	Instrument(s) fit specific needs of real projects	<ul style="list-style-type: none"> › Could the structure provide better financing than the projects reviewed? › Would the structure be able to demonstrate additionality?
Breadth	Is beneficial to most/all of African context, across geographies, market segments, etc.	<ul style="list-style-type: none"> › Is the structure best-fit for specific countries or sub-regions? › Are there jurisdictional considerations because of the nature of the instrument provided?
Investor Appeal	Is a familiar structure to investors, esp. private investors	<ul style="list-style-type: none"> › Are there similar structures already operating in the sector, on the continent or globally?
	Can provide (relatively) competitive returns	<ul style="list-style-type: none"> › Can the structure generate favourable returns for investors in the forestry sector context? › Could the structure enhance the returns for those who invest alongside the structure’s investment?
Practicality	Is (relatively) quick and easy to operationalize	<ul style="list-style-type: none"> › Can the structure be rapidly established, staffed and deployed across the continent?
	Is cost-effective in terms of overheads	<ul style="list-style-type: none"> › What are the outsourcing or human resource considerations? › Are there substantial overheads to managing the structure?
Outcomes	Promotes or catalyses private co-investment	<ul style="list-style-type: none"> › Is it likely that the structure will attract direct private sector investment in itself, or co-investment at the project level?
	Is likely to generate more plantations increasing number of trees planted	<ul style="list-style-type: none"> › Is it reasonable to expect the instrument(s) provided by the structure to catalyse more planting of trees?
	Is positioned to contribute to achievement of SDGs and positive environmental and social impacts	<ul style="list-style-type: none"> › Does the structure have the scope to define environmental and social parameters of underlying projects/investments? › Where in the project cycle does the structure enter, and how much sway will it have?

Key Finding

Through detailed internal consultations and further discussion with AfDB counterparts, the study team identified the top three structures from the wider pool of ten that were best suited, per the criteria outlined above, to achieve the aims of the study. The detailed scoring results are presented in Annex I. The top three structures, in rank order, were:

- i. Equity Fund
- ii. Holding Company
- iii. Blending Framework

The team also identified the next quartile of best fit options as backups, in case the top three were deemed to be infeasible. These were:

- iv. Co-investment Vehicle
- v. Multifunctional/Multi-Fund Platform
- vi. Captive Guarantee Fund

Tailoring a Best-fit Approach

The study team presented these three top options to AfDB counterparts, and it was determined that the equity fund platform should be prioritized. The holding company, while viable, is (a) unlikely to attract private investment and (b) may not align well with current AfDB investment priorities. The investment structure used for the FIP-AfDB project should also to be retained as a useful instrument to be deployed alongside an investment by an equity fund. If AfDB were to establish and pre-approve a programme of this type, it could be offered in the form of a co-investment to providers of equity or other investments to forestry companies.

To narrow in on a best-fit approach, the team developed and submitted a concept note on the working strategy for the Fund. Consultations followed, which guided the formulation of this draft final report. In the meantime, stakeholder follow-up was undertaken as described below.

Stakeholder Follow-up

The team has maintained contact with a range of potentially catalytic organizations who could add real momentum to the Fund. These include members of the DFI community, global forestry companies, global oil and industrial companies and HNWI. Note that no direct consultations have been undertaken with CIF, GEF or GCF by the study team.

DFIs

The DFI community seeks profitable investments with a strong positive impact on social and environmental elements. Without fail, those interviewed during the study see the attractions of forestry as an investment, but not all are actively seeking to make significant investments in forestry. Some lack the substantial capital resources needed. Others lack the technical capacity to evaluate forestry investments. Others still are affected by the aftermath of some inappropriately structured historical transactions that have had to be restructured.

From interviews, it is clear that the DFI community has the potential and interest to launch the Fund. Associating these and other DFIs closely to the Fund would boost the likelihood

of achieving sufficient scale for the initiative to be truly transformational on the African continent.

Global Forestry Companies

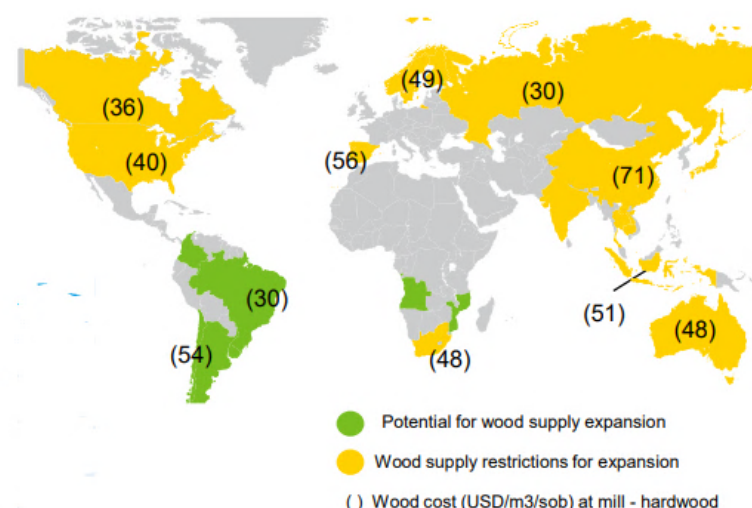
Following the renewed focus on afforestation in the recent Natural Climate Solutions discussions and the IPCC's SR 15, one possible strategy may be to engage with some of the leading global forestry companies with extensive experience from fast-growing forest plantations and landscape models. Afforestation should represent an interesting business opportunity for these companies, and policymakers should aim to attract more of them to Africa. Portucel is already active in Mozambique. UPM and Stora Enso have in the past shown interest in Mozambique. Further engagement with global forestry companies may yield additional findings, but it was beyond the scope of this study to deeply engage with companies not currently invested in Africa.

Karl-Henrik Sundström, CEO of Stora Enso, explained Stora Enso's role in the bio-economy at the company's 2018 capital markets day as follows:

Because of global megatrends, the world needs renewable materials. The urgent need for replacing plastics is also supported by new legislation. This will open enormous opportunities for us. We believe we can offer sustainable profitable growth, excluding paper, of 4-6 % annually.

Conversations with leading European forest owners suggest that the bio-economy and climate change mitigation opportunities are issues on their agenda, however, they are for the time being focused on implementing large existing projects. UPM-Kymmene will soon make a decision on the world's largest pulp mill in Uruguay, Portucel is focusing on a current project in Mozambique, and Stora Enso is focusing on existing plantations in Uruguay, Brazil, and China. Stora Enso's global wood supply outlook is presented in Figure 2, highlighting Southern Africa as the only high potential area for afforestation outside of South America. It is notable that Stora Enso's forestry operations are focused in Latin America and are therefore geared towards Spanish- and Portuguese-speaking countries. This also demonstrates that Africa is relatively competitive, in the eyes of a global forestry company, because costs are comparable to other international settings [see numbers in parentheses below].

Figure 2: Stora Enso's Global Wood Supply Outlook¹⁴



Global Oil and Industrial Companies

The IPCC report and wider efforts to curb carbon emissions are also becoming stronger drivers for these companies to become part of the solution rather than a major part of the problem. They are beginning to see the potential of forestry investments as a means of achieving these goals while at the same time making attractive investments. In early conversations with oil companies, this has been illustrated very clearly, and the presence of a well-designed investment vehicle could be attractive to them. Preliminary interviews yielded information that some oil companies are already forming alliances with sustainable forestry investment companies.

A similar argument can be made regarding the cement industry and other industries with large land holdings. It would be premature to conclude that the Fund will be able to attract support from this sector, but these discussions should be continued during the start-up phase of the initiative to see if there is a potential to closely associate such entities to the establishment of the Fund. Conservation International has also confirmed that it sees potential in associating large global businesses with the forestry sector.

Family Offices, HNWI's and Philanthropies

HNWIs were originally key investors in the revival of African forest plantations established since 2000 but have recently only provided modest amounts of new capital to the industry. HNWI's or HNWI-backed companies provided the seed funding for most of the afforestation companies since 2000, including APSD, Global Woods, Form Ghana, Green Resources, Miro Forestry and NFC.

A re-engagement with this diffuse sector could come through leading environmental NGOs that have focused on raising private finance for forestry and other conservation activities, in particular Conservation International, TNC, WWF and similar organisations. WWF is working on a wide range of forestry initiatives, including a number of landscape activities, for example NGP, which could create the basis for future fund-raising activities. NGP is a knowledge platform established by WWF in 2008 as a venue to bring together global

¹⁴ Map provided by Stora Enso

plantation companies and stakeholders define best practices for sustainable forestry. WWF has also established a Landscape Finance Lab, an initiative that aims to mobilise finance for landscape-level projects. Overall, WWF is actively engaged with major philanthropists and philanthropic organizations, and thus may play a key role in facilitating concessional resources for African forestry.

Finnfund Forestry Conference

The study team and the AfDB focal points participated in a conference organized by Finnfund at a late stage in the study. The topic of the conference was how to foster more investment in sustainable forestry in Africa. Participants included DFIs/MDBs, forestry companies and fund managers active on the continent, as well as a few Asian and Latin American counterparts to provide external perspectives.

Overall feedback on the proposed investment platform was positive based on the strategy defined at that point, with a few notable highlights:

- › The Fund should incorporate a value chain perspective in its investment strategy, ensuring that downstream processing is at least indirectly supported/capacitated if not directly implemented through the Fund's investments.
- › The Fund should not compete with existing funds and investment activities; rather, it could be positioned to complement existing investments¹⁵
- › Sizing and defining the characteristics of the concessional tranche will be key in marketing the Fund to DFI and private investors¹⁶

Aside from these three broad strategic directions, a number of tactical and procedural suggestions were gleaned from discussions with conference participants. Finnfund, given its long track record in the African forestry sector, named four key considerations that need to be mainstreamed in African forestry to make it a "global asset class":

- › Strategic use of concessional finance to facilitate sector growth
- › Investing in larger, more efficient plantation units (in terms of ha per plantation)
- › Demonstration of strong cash flow generation through staggered planting cycles
- › Geographic diversification across multiple countries in a given portfolio

These specific recommendations, drawing on Finnfund's decades of experience in the sector, validated and strengthened some of the key attributes of the Fund's strategy and structure. Most importantly, there is a clear coalition of DFIs interested in further discussion on this topic, including: CDC, Finnfund, IFC, NDF and FMO. Appetite for tendering for management of the Fund was also confirmed, as at least two of the fund managers in attendance indicated an interest in being considered in the context of their ongoing fund design and growth. More details on the Finnfund conference and peripheral meetings are provided in Annex J.

¹⁵ Some DFIs suggested that the Fund should open for acquisition and expansion of existing funds' assets in certain circumstances, particularly in relation to expansion of existing plantations.

¹⁶ These investors will want to feel that this tranche provides adequate risk mitigation to enable them to commit to the Fund.

Proposed Strategy

This section outlines the proposed strategy for the Fund. It comprises four main sections. First, it outlines the proposed structure of the Fund, which includes details on how a junior tranche will be integrated into the capital structure to crowd-in private sector investors. Then, it discusses the overall strategy of the Fund, including fundraising, deal sourcing, instruments, development targets and other aspects. Third, it presents other aspects of fund structure, strategy and management that are likely to be discussed, negotiated and agreed with the selected fund manager. Finally, it outlines catalytic opportunities to complement the Fund's main investment activities, primarily through implementing a concessional framework programme using a financing structure similar to the FIP-AfDB project structure as a follow-on investment /co-investment facility.

The Opportunity for Transformation

The trickle of new funds and investments into African forestry over the past decade is likely to continue, but the amount of funding currently flowing to African forestry is still small compared to the potential. Over USD one billion in current expansion opportunities have not been pursued due to lack of patient capital. Investment in African forestry has stalled today and is desperately in need of fresh injections of capital in order to revitalise. As outlined earlier, several factors have changed in recent years, providing an opportunity for a ground-breaking new initiative to gather support from investors.

The Fund outlined herein is a structure that can break the deadlock in African forestry. It has strong differentiating features – a junior tranche, AfDB support and strategic backing, access to a wider source of dealflow, and large-scale ambitions. Once up and running, the Fund will target a portfolio of a sufficient scale to be watched closely by investors and the international forestry investor space; it should be able to put African forestry investment on the global map through the headlining transactions that it will be able to make. At full capitalization, the Fund will have two to four times more capital available for African commercial forestry than existing funds and will target market-transforming investment opportunities.

The Fund may also be a source of exits for other investors—buying from other funds a mixed project of mature plantations and control of unplanted landscape upon which to plant new trees—and provide a strong boost to investees that could become attractive acquisitions. Its capital will drive strong businesses into profitability, a major milestone for the companies concerned and a key demonstration that African forestry is both sustainable and profitable. The potential of the sector to attract investment would rapidly grow as examples of successful companies and investments became more commonplace. This may not be considered additional in the traditional development banking perspective, though it would be tremendously additional as a means of rounding out the investment value chain and generating case studies of investment success.

Seen from a development perspective, the positive impact of forestry on African economies, the environment, climate change adaptation and mitigation, on social factors such as employment potential and potential impact on SDGs is massive. Market barriers and key risks can be addressed through a long-term equity structure that is able to attract funding from both commercial and concessional investors, as well as potentially donors for

grant facilities. Underlying investments provide employment opportunities in rural areas where existing opportunities are overwhelmingly in the informal sector; steady income from employment will make local communities more resilient and adaptable to economic and environmental shocks, especially those caused by climate change. In this way, the Fund presented herein makes use of the lessons learned from past blended finance opportunities and presents a novel approach to undertaking transformational private sector growth for African forestry—in line with the CIF E&L initiative.

Overall Strategy of the Fund

At its core, the proposed strategy presents an attractive investment opportunity into a Fund that will itself invest into the largest new area of sustainable plantation forestry possible across the African continent.

Investment Strategy

The facility will supply patient capital, likely to be entirely in the form of equity,¹⁷ to companies and projects that are well positioned to extend or establish sustainably managed forestry plantations.¹⁸ This will include both brownfield and greenfield afforestation projects as long as the underlying focus is enabling more trees to be planted. Brownfield projects¹⁹ closely aligned to existing plantations and/or in associations with experienced managers of African plantations are likely to generate the highest financial return while still delivering sizable mitigation and adaptation benefits.

The facility will take majority or strong minority positions in the businesses or projects that it supports, in line with the global practice espoused by TIMOs. It will seek to implement a strategy that takes into account the limited presence of established forestry management companies in Africa and other components of the timberland investment community that are present in areas with a more established timberland investment industry. This will primarily be achieved through a hands-on approach.

The facility will target relatively large-scale transactions to enable substantial impact to be achieved at the landscape level, and to ensure that projects reach the right economies of scale in terms of operational efficiency. The Fund should also focus on FSC certified or certifiable projects only.

Investor Mobilisation Strategy

In relation to investors, the facility will be positioned in such a way as to break the funding deadlock that has severely constrained capital flow into African forestry over the last two decades. There has been a fundamental mismatch between the African forestry asset class and the appetite of private investors during this period. This has resulted in the main capital flows to African forestry coming from the DFIs. The financial resources of the DFIs are relatively limited, hence the limited total supply of funds. To overcome this constraint, the strategy is to implement a dual-tranche capital structure featuring a junior tranche that will

¹⁷ The final makeup of investment instruments is to be proposed by the selected fund manager.

¹⁸ Well managed forestry plantations apply best practice silviculture techniques, efficient operations and strong governance.

¹⁹ Defined as “new forest establishment adjacent to, and capitalising on experience, existing operational overheads, and competence, as well as infrastructure from existing plantations

bear a larger proportion of losses. The precise features of this tranche will be determined at a later phase in the design of the facility. The junior tranche is expected to represent 15-25% of the total volume of the Fund to be raised.

The key objective of the junior tranche will be to allow the Fund to engage private sector investors with an offering that they will find appealing; the objective is to maximise private sector investment into the Fund. The key to success will be that the senior tranche is considered sufficiently low risk to attract serious consideration of the Fund's investment opportunities by institutional investors. The junior tranche will thus play a strong catalytic role in leveraging in investment from the private sector to create a Fund of substantial size, which will in turn represent a step change in the funding available to the African forestry sector. Critically, it should be noted that contributors to the junior tranche will not be underwriting profits of the individual company, nor project promoters, nor returns to the fund manager. This means that:

- i. Recipients of investment from the Fund will still need to earn their success by adequately using the funding that is provided to grow their businesses;
- ii. The fund manager will need to provide all investors with the financial returns targeted before reaching the stage of sharing in profits

In other words, the junior tranche only serves as a cushion to investors in the senior tranche, not to other stakeholders. The junior tranche serves the sole purpose of mitigating risk to attract private sector capital for the African forestry sector. However, should no losses be incurred, the junior tranche will equally share in upside with the other investors.

Potential Pipeline

The study has identified around 500,000 ha of viable plantation land on close to one million ha of landscapes readily available for plantation establishment in ten countries: Angola, Republic of Congo, Ghana, Mozambique, Malawi, South Sudan, Tanzania, Uganda, Zambia and Zimbabwe. These are plantation opportunities where significant up-front project development work has been completed. This means that much of the enabling infrastructure is already in place, which will speed up implementation and lower the costs of new investments as compared to true greenfield projects.

While total establishment costs for the 125,000 ha of privately-owned forest plantations in Africa since 2000 have been in the range of USD 4-6,000 per ha, findings indicate that higher quality new plantations can be established at a 33-50% discount on the historic costs, largely due to economies of scale, increased technical skills/efficiency, and adjacency to existing plantations of available land. This means that new forest plantations in Africa can be established at nearly half the full establishment costs incurred in the main South American plantation countries, with only marginally lower growth rates and often higher market prices in Africa. At an average USD 2,500 per ha establishment cost, the pipeline of 500,000 ha afforestation provides an estimated USD 1.25 billion of investment opportunities. Note that the Fund, should it reach full capitalization, would invest in around 20% of the identified pipeline through its investment activities, as described in the next section. Even if it only reaches its first close targets, the Fund could still realize afforestation

on 10% of the available land identified in this study. At full capitalization, the Fund could trigger 2-3x larger afforestation activities.

The plantations established by the Fund might be further expanded as they mature, through debt funding during the 2-5 year period prior to a plantation becoming cash flow positive (i.e. first harvest, or second harvest for some brownfield/partial brownfield projects), depending on the quality of its assets and the strength of the cash-flows. Continued planting based should be an objective in line with FSC and global best practices; the cash generated after a first harvest can be used to demonstrate viability, enabling a potential doubling of the planted area through a combination of reinvestment and refinance.²⁰ This could enable a potential doubling of the planted area, and further expansion of protected landscapes. Farm forestry or out-grower programs would typically add 10-25% to the size of the planted area, though some models suggest that an even higher proportion of outgrower schemes may be possible.

The Fund might also invest in industrial and processing companies, thereby facilitating projects that otherwise could not have materialised. For example, an investor in an industrial down-stream processing project might want to limit upstream investments and would instead rely on the Fund to be its upstream investment partner. Thus, if the Fund established a 12,500 ha plantation, a wood chip mill investor would only need to establish about 12,500 ha to secure sufficient wood flows and materialise the project. Furthermore, the Fund might attract direct co-investments from companies offering off-take agreements for the wood or have particular environmental agendas, for example climate action or restoration requirements.

In terms of partnering with forestry companies, there are more than 200,000 ha of forest establishment opportunities owned by ten companies across six countries. Realizing these investments requires the infusion of third-party capital, as the companies themselves do not have sufficient capital or access to usable debt to establish plantations on this land. This accounts for almost half of the plantable land controlled by leading private companies in sub-Saharan Africa outside of South Africa. The other half of the land these companies' control is thought to be areas that would likely develop on their own, through their own capital resources, because they are adjacent to existing core plantations or form a critical part of future investment projects. Each company has a different approach to managing these expansion areas, and it is likely that a full capitalized Fund would be able to broker strong projects with at least some of these companies.

In some situations, expansion of existing forest plantations may provide opportunities to create more economical units and deploy larger amounts of capital. Many of these opportunities can be implemented by the current owner with the private company possibly retaining an equity stake in the project and/or where there is a cash payment for part or all of the existing assets. In other situations, it will make sense to bring in third party managers where the management of the existing assets would be done by an external party.

²⁰ Currently, refinance sources (i.e. commercial banks) are limited and DFIs are usually unable to provide such capital on the basis that it is not highly additional; however, it is expected that the Fund (at full capitalization) would be able to demonstrate viability and bring some "traditional" lenders to the African forestry sector.

Beyond private company land, the study has identified close to 300,000 ha of plantable government forest land that is available for investment, spread across seven countries. Some of these tracts of government forest also have planting opportunities on adjacent private company land. These opportunities will rely on project management from a private company, but some could use contractors partly provided by the government. The mosaic landscapes of existing government forests and of private plantations on government forest reserves typically have a higher percentage of plantation than more recently established private plantations that adhere more closely to forest landscape restoration principles. However, a sufficiently skilled fund manager could deploy the Fund's resources to bring about robust mosaic plantations in full compliance with FSC.

Furthermore, some NGOs have commercial planting projects within wider landscape restoration efforts. There are also a significant number of local and international entrepreneurs that are developing greenfield projects and several such project investment opportunities are likely to be presented to the Fund. Combined, there are probably around 50,000 ha of such opportunities. In addition to the identified pipeline, there may be further opportunities in South Africa; these were not reviewed in detail in this study because the primary focus of the Fund will not include South Africa.

In addition to plantation investments, the Fund also has the opportunity to make strategic investments in the local forestry value chain where it complements investments in new plantations. Investments in harvesting and processing capacity, especially in combination with plantation establishment/expansion, would be relevant opportunities for the Fund. Investing in the wider value chain would allow the Fund to benefit from the fact that investees would have a stronger connection to their end markets and benefit from a larger share of the value chain. It would also enable the processing assets to generate cash by processing timber sourced from other plantations and smallholder programs. This would accelerate the cashflow profile of investments as compared to a plantation-only investment strategy. Critically, it would also stimulate additional forestry establishment by smallholders and other investors.

While less directly impactful in terms of climate change mitigation, these downstream investments have substantial employment potential. Downstream investments, such as in companies or facilities producing building materials, could help Africa transition to more sustainable and lower carbon building standards, substituting for cement and steel and helping to mitigate GHG emissions. This would align well with climate change adaptation efforts, as it would make rural incomes less dependent on rain-fed agricultural outputs. Financiers with a particular emphasis on climate should also see the benefits of this adaptation angle of the Fund, given that relatively few opportunities exist for private co-investment within the realm of adaptation finance.

Priority Geographies

The Fund should be primarily focused on Sub-Saharan Africa; South Africa may have limited investment opportunities because of market saturation, but the inclusion in the potential pipeline of investment opportunities in Africa's largest and most established forestry country may provide a strong reassurance to private investors who may see this as a lower

risk platform that counterbalances riskier investments elsewhere in Africa. Furthermore, there is a strong geographical concentration in investment opportunities, which is influenced by the following factors:

- › Availability of suitable land with acceptable growing conditions to achieve desired growth rates
- › Presence of forestry industry, underpinned by supportive government/legislature
- › Presence of transport infrastructure providing a route to market
- › Market proximity (domestic or international)

The African countries with an established active forestry industry combined with large-scale planting opportunities include Angola, Republic of Congo, Ghana, Mozambique, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. Interesting frontier countries with considerable planting opportunities include Cameroon, Gabon, Madagascar, Sierra Leone and South Sudan.

There are substantial markets for the various forestry plantation products (particularly timber and biomass) in domestic African markets, particularly in the larger economies. These markets are price sensitive due to competition with the informal sector and do not generally place a significant premium on provenance-based certifications. International markets feature prices that are set by the market, but which do in certain cases provide for premiums derived from certifications such as FSC.

The main focus of the Fund will be on East and Southern Africa with additional opportunities clustered in certain areas of West and Central Africa. The fund manager's organisation should take this into account and be located to enable effective deal sourcing and support in these regions.

Priority Segments

The main priority will be to create additional forestry plantations in Africa. Due to uncertainty about the historic return of plantation establishment, the focus should be on brownfield expansion opportunities, where harvested areas are ready to be replanted or pre-identified plantable land adjacent to existing operations are afforested. This kind of investment would be considered lower risk. Both previously harvested unplanted land and adjacent land opportunities will benefit from existing infrastructure and reduced risk. It will also make sense to invest in existing plantations with expansion potential, where the financing for the maintenance of an established but still growing plantation creates significant value.

In some instances, there is a need for harvesting or initial wood processing investments to generate cash flow from existing plantations as they reach maturity. These can be highly valuable and important investments for the industry and will be an attractive investment segment when combined with significant new plantation establishment.

Targeted Development Results

The Fund will include a portfolio-level results framework in order to appeal to investors with an interest in development outcomes and impacts of a non-financial nature. Relevant indicators to be targeted might include:

- › Number of hectares (re)forested, including:
 - › New hectares under management with FSC certification
 - › Hectares of native tree species (re)forested
- › Tonnes of CO₂ sequestered.
- › Direct jobs created/sustained, including:
 - › Male/Female employment
 - › Youth employment

Beyond the specific outputs and short-term outcomes of the investment activities, the following longer-term results could be evaluated:

- › Livelihood co-benefits, including:
 - › New value chain businesses established
 - › Smallholders recruited into forestry
 - › Expansion of agricultural land under cultivation
- › Indirect employment created/sustained, including:
 - › Female employment
 - › Youth employment
- › Community development from plantation-linked opportunities
- › Availability and access of key infrastructure, including:
 - › New/improved roads
 - › New/improved electricity access
 - › New/improved educational access
 - › New/improved health access

These outputs and outcomes could also be expressed in the form of Adaptation Benefits under the AfDB's Adaptation Benefit Mechanism (ABM).²¹

Targeted GHG Impact

The Fund's targeted 100,000 ha of new forestry plantation, once mature, should yield around two million tCO₂-eq sequestration per year. The value of the carbon payment would be USD 10 million per year based on current market prices. While not typically used to validate feasibility, this additional revenue stream for the fund could be substantial and attractive to some investors, even if carbon revenues are not part of the revenue stream for the Fund. Additionally, or alternatively, these sequestration effects can be used by the countries where the Fund has forests—the sequestration could be subtracted from the national emissions inventory to help achieve national targets and raise ambitions. This would help the Fund and the countries where it invests to align around the Paris Agreement and respective national commitments therein.

In terms of validating these estimations, it is conservatively assumed that one cubic meter of forest growth sequesters a single tonne of CO₂.²² There is also a large amount of carbon sequestration in the conservation and restoration areas which typically make up half of the project areas. Assuming an average rotation of twelve years and allowing for one year

²¹ For more information on the ABM, see <https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/adaptation-benefit-mechanism-abm/>.

²² Wood typically sequesters slightly less than one tCO₂-eq per cubic meter growth, but significant additional underground and soil carbon sequestration might add 30% or more to this figure.

between harvesting and planting, and taking the Fund's target of 100,000 ha, the average age of the trees will be six years. This means the assets of the Fund will maintain an active, stable carbon sink of around 12 million tCO₂-eq, as shown in Table 11, not accounting for the significant ongoing improvement in soil carbon nor the large carbon storage in products. Cumulative sequestration over a single rotation across the species amounts to more than 27 million tCO₂-eq captured and sequestered into newly planted trees. These estimates do not factor in soil carbon, carbon capture through conversion of trees to long-term building products or other dimensions that would further increase the GHG benefits from the Fund's assets and activities.

Table 11: Potential Sequestration based on Indicative Portfolio

Species	Area (ha)	MAI ²³ (m ³ /ha/yr)	tCO ₂ -eq per MAI	tCO ₂ -eq per year	Rotation (years)	Cum. Seq. ²⁴ tCO ₂ -eq	Carbon sink ²⁵ tCO ₂ -eq
Pine	47,000	18	1	846,000	16	13,536,000	6,768,000
Eucalyptus	43,000	25	1	1,075,000	10	10,750,000	5,375,000
Teak	10,000	13	1	130,000	25	3,250,000	1,625,000
Total	100,000	NA	NA	2,051,000	NA	27,536,000	11,717,000

Note that the carbon sink in a forest sustainably harvested and managed for wood products is actually half of the product of tCO₂-eq per year and the rotation length and half of the potential direct sequestration if no harvesting takes place. This is because it is assumed, on average, that the trees are half the age of the rotation length at any given time across the stand/plantation. A forest that is managed for harvesting will generate significantly higher product carbon sequestration and estimated soil carbon.

Forest Trend²⁶ reported an average price of USD 5.20 per tCO₂-eq in 2016, similar to the two previous years but with the volume falling from 24 million tCO₂-eq in 2014 to 14 million tCO₂-eq in 2016. The average price for forestry projects is negatively influenced by large scale REDD+ projects that typically sell carbon credits at a discount, while afforestation projects might be priced at twice the forestry average. Forest Trends' Ecosystem Marketplace has been the prime provider of information about the global carbon markets over the last 14 years, including the Voluntary Carbon Markets report that last came out in 2017 and will next be re-issued in 2019.

Key Partners, Investors and Stakeholders

For this particular initiative, the strength of partnerships will be a determining success factor. To be in a position to raise a sufficiently large fund that can truly make a difference to the African forestry sector, the fund manager will need to be able to form alliances with strong partners of several different kinds:

- › DFIs
- › A partnership with a leading technical specialist

²³ Mean Annual Increment (MAI) is the average annual growth of a tree over a year.

²⁴ Cumulative sequestration is the total estimated carbon captured over a single rotation of the species (tCO₂-eq per year times rotation length).

²⁵ Only relates to the plantation forest, not total sequestration through permanent or semi-permanent carbon capture in timber, utility poles, etc.

²⁶ See 'State of the Forest Carbon Finance' (December 2017)

- › The presence of a convincing forest management specialist against fears of execution weakness on the part of investors
- › Appropriate NGO(s)

In addition, the Fund should complement the investment activities of other funds and direct investors active in African forestry. There is no reason to crowd out or compete with existing players. In order to bolster the visibility of the African forestry asset class, the Fund may be able to catalyse partial exits for existing funds at the same time as further developing and growing the underlying plantations. This would enable some turnover of African forestry assets, and it would help demonstrate the feasibility of exits to investors that are currently sceptical. It would also help to accelerate the flow of capital through African forestry companies and generally free up capital to replant and undertake other plantation expansions.

Fund Structure

Some of the key features of the fund's structure are described below. A more detailed version of this report with additional information on fund structure is available to potential investors upon request.

Optional Technical Assistance (TA) Facility

The availability of a technical assistance (or general grant) facility depends largely on the provision of such resources from a donor, which would be required in the form of grants. Although the TA Facility needs to have a clear objective at the outset, donor preferences would have an influence on how these resources could be used. As such, the feature is shown as optional and is not considered a core part of the strategy. Recent research supported by the CIF E&L Initiative, among other literature, strongly supports the use of TA in forestry for a wide range of activities, including smallholder engagement, environmental services incentives, technical skills development for management staff, project preparation and others.

The TA Facility would be best structured as a separate legal entity with its own governance. It would be crucial to avoid any perceived lack of separation between these two financial resources, as the investors/donors to each will be making commitments with very different objectives. Although a separation of the Fund and TA Facility is important, the two would function synergistically, with investment proposals ideally being reviewed in parallel to TA Facility grant allocations by the respective governance bodies. The TA support available to a project may have a material effect on the investment case, for example. There are several key barriers identified [see Table 6]:

- i. Project preparation support/due diligence activities
- ii. Capacity building
- iii. Silvicultural development
- iv. Stakeholder relations programs
- v. Non-commercial restoration/afforestation activities
- vi. Enhancing environmental and social impact / performance

These barriers may be overcome by TA facilities focused on three key issues:

Project Preparation: Developing a commercial afforestation project within a landscape, especially in line with international best practices, is time consuming and expensive. Proper preparation is important to meet the land tenure challenges and ensure good stakeholder relations. It is also critical to properly plan the operations (planting material and silviculture practises, management systems, etc), thereby managing establishment costs. If the land is publicly owned, the process is likely to take 2-5 years and require a wide range of studies and consultations that cost at least USD two million, plus an additional USD one million per 10,000 ha of plantable land. TA grants for project preparation, particularly around supporting negotiations for land tenure, community engagement and benefits sharing, would be valuable financially and would strengthen dealflow. However, the technical support and structure offered by such a grant would be equally important to enabling good projects, including keeping project development on-time and on-budget. Meaningful project preparation TA grants would likely be awarded on a cost-sharing basis, amounting to USD 500,000-1,000,000 per project. This could also be complemented with in-kind technical support provided by the grantor or its pre-qualified advisor. This kind of activity could also be supported through recoverable grants (i.e. no interest loans) provided through a separate TA facility with its own write-off policy. This might better ensure commercial practices without creating undue financial liabilities for yet-unproven project opportunities.

Technical Skills Shortfall: Insufficient silvicultural infrastructure, lack of management expertise, unproven planting material and weak silvicultural practises were identified as key barriers to afforestation in Africa, with insufficient climate resilience expertise and limited sector data representing further barriers. Indirectly, these barriers are also a key driver of the main financial barriers: high investment costs. These barriers can all be effectively addressed through broad-based capacity building activities alongside investment activities. This way, some of these barriers can be addressed systematically in the context of real projects without the financial condition of those investments being staked on non-commercial activities like capacity building. Relatively modest programs either managed by the fund manager or an industry wide organisation could have significant ability to address these barriers. Total expenses depend on the exact barriers the grants are trying to address; past experience of similar granting programs indicate that a budget of USD 2-5 million can be impactful and efficient in terms of scale.

Non-payment for Ecosystem Services & Forest Landscape Restoration (FLR): A successful forest landscape restoration projects is believed to be dependent on a core commercial operation and extensive smallholder engagement. Smallholder agriculture and afforestation programs will benefit significantly from linkage to a commercial afforestation project. Properly designed commercial forestry projects represent an attractive opportunity for implementing linked smallholder programs. However, smallholder linkage programs do not create secure revenue streams for commercial project sponsors – quality, contract enforcement, fire and agency issues all create a situation where commercial projects cannot rely on smallholders to reliably produce and harvest quality logs that generate revenues for the commercial project. However, while they do not generate revenue for commercial projects, smallholder linkage programs are believed to generate significant SDG achievements compared to the cost of operating them. Grant resources are therefore an excellent way to support smallholder linkage programs in a way that creates no financial

liabilities to the commercial project but can still generate significant SDG returns. Such a program would ideally take the form of direct initial field support, as well as activities to strengthen the value chain (transport, warehousing, local banking, etc). Thus, a program could transform local communities around commercial plantations with what is estimated to be a cost of USD 1-3,000 per household. This kind of program would be implemented over a period of several years, assuming implementation is closely aligned with the overall landscape activities. A comprehensive FLR and linkage program could be up to 20% of the size of a linked commercial investment program.

Governance

The Fund would have a standard governance structure that will be familiar to investors, in line with LPA norms. The proposed structure of the Fund should follow industry standards, to the extent that this is possible. However, some aspects of the sector being targeted (forestry) are different to mainstream markets for which the standard private equity fund structure was designed (timescales, return profiles, geography, etc). It will therefore also be important to accommodate this nuance, but good governance principles should remain the foundation of the Fund's governance structure.

The most obvious area of difference is around overall timespan of the Fund. Forestry companies and projects take time to mature and become cash generative. A lifespan of at least 15 years is therefore warranted. However, the possibility of having a longer lifespan or eventual conversion to an evergreen structure should also be further explored, depending on investor sentiment.

The fund manager will also need to bring strengths in investment governance, forest management and excellent operational skills to the table. These capabilities will be fundamental to opening up the pipeline of investment opportunities, as many investment opportunities will be weak in one or more of these areas.

Legal Identity

A Mauritius-based fund is the default choice for an African investment vehicle, as it retains the vehicle in an African jurisdiction. However, other jurisdictions may also be considered, provided they meet the requirements of senior and junior tranche investors.

Advisory Committee

Investors would be invited to join the Advisory Committee, which has a privileged view of fund operations and is also involved in dealing with key governance issues, such as conflicts of interest, strategic questions, valuations, and fundamental decisions like changing the manager.

Investment Committee

The investment committee would be staffed with individuals with significant investment experience that are able to provide a suitably challenging hurdle for the fund manager to pass when proposing new investments. The selected manager may already have a strong investment committee, in which case the existing committee may serve this purpose. The investment committee could also be made up partly of the fund manager's staff and partly of independent specialists, including African forestry specialists. A strong investment

committee is a major source of reassurance for investors who may feel that the fund manager has not yet achieved a proven track record. An investment committee should be identified in association with the fund manager and subject to validation by investors.

Management

The structure and capabilities of the fund manager for this Fund will be central determinants of success. As outlined in the market section above, there is a general consensus that management and execution skills on African forestry projects lag behind other parts of the world. The fund manager will therefore need to integrate several key capabilities into the fund team:

- › **Forest Management:** the fund manager will need to be able to provide a high level of support in ensuring that the forest management skills applied to the plantations of each investee are of high quality. This will mean different things for each investment, depending on the strength of its own team, but could range from close technical oversight, to being able to bring in forest management companies with which it has partnered on a temporary or permanent basis. The fund manager will engage, as necessary, management contracts within each SPV or investment.
- › **Investee Management Oversight:** evaluation of the management team at each investee company is a core part of the due diligence exercise. The fund manager will need to take a pro-active and constructive role in identifying and remedying any weaknesses in the management team of an investee. One approach to this will be to include a range of operating partners in the fund management team. This group of people will consist of experienced forestry industry managers who work closely with the fund management company in its day to day operations, and who will also be available to provide support to investee companies. This will also align with focusing on a majority stake investment approach, as discussed in the strategy section.
- › **Governance:** investee companies will need to be well governed such that the fund manager is extremely well informed of issues that arise and is able to take corrective action rapidly and effectively, including making personnel changes. Ensuring this will be a key area of added value by the fund manager.

On a case-by-case basis, some of these skills (particularly forest management) may be outsourced. However, demonstration of competency in all three of the areas above is a critical part of identifying the best fund manager for this venture.

Risk Management

A strong technical skillset will also be a powerful means of mitigating risk. This will be of particular importance in relation to true greenfield deals that may be undertaken by the Fund but is equally important to ensuring strong performance of brownfield expansion projects. In all cases, it will be essential to be able to take a disciplined view of the technical aspects of a plantation.

Setting sound prudential limits at the level of the portfolio is also important. Key prudential limits are recommended to include:

- › 33% exposure limit to single countries
- › Up to 20% of the Fund to be available for downstream investments
- › 25% exposure limit to single investment/companies
- › Diversity in species and geographies to protect against the risks of climate change and associated threats of fire and pests

Dimensions to Negotiate with Fund Manager

An important feature of the implementation process of the Fund will be the contribution that is sought from candidates to manage the Fund. It is envisaged that the selection process will be competitive, global and transparent, similar to how previous AfDB fund manager tenders have been undertaken. The ideal approach will provide a clear framework in the tender materials, guiding potential fund managers' detailed proposals without being overly prescriptive. The candidates need to be given sufficient room to incorporate their own strategy, vision and operational practices to the proposal, which could significantly strengthen the overall prospectus.

The following features would typically be left at least somewhat open in order to solicit added value proposals from fund management candidates:

- › Fund strategy validation and refinement
- › Investment instruments to be deployed
- › Investment structures to be used for investments
- › Fund structure and domiciliation fundraising strategy
- › Ratio and exact structure of loss sharing between senior and junior tranches, particularly to optimize use of concessional resources to catalyse private investment²⁷
- › Fund size and first/second close targets
- › Ownership structure of the investments
- › Forest landscape restoration approach
- › Climate change mitigation and adaptation strategies
- › Number of investments and preliminary pipeline
- › End market exposures
- › Species and crop rotation focus and diversification
- › Forest management systems
- › Environmental & social reporting, standards and certification strategies
- › Higher and better end use opportunities for the land (complimentary long rotation agricultural crops)
- › Financial targets and terms
- › Forest management contracts; day-to-day approach to oversight of investments
- › Gender awareness and monitoring policy/procedures

A very important part of the process of obtaining offers to manage the Fund during the Request for Proposals (RFP) process will be to provide each candidate with the opportunity to embellish the strategy and structure that is envisaged herein. This is preferable to

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providing a very tight specification, because it allows each candidate to put forward his/her own ideas and to mould the Fund structure based on specific strengths. This does not mean that some constraints cannot be imposed and, where AfDB and other sponsors have definite requirements that cannot be altered, these should also be made clear.

Complementary Opportunities

This section outlines complementary structures that are beyond the scope of the Fund, but which would directly complement and further catalyse results.

Blended Debt Co-Financing Framework

In the medium term (i.e. 2-4 years), the Fund will have made some of its first investments in African forestry projects. These deals are expected to be largely, if not entirely, equity financed because of the nature of plantation investments. However, access to blended debt instruments could enhance the scale and flexibility of the Fund's portfolio. A blended debt instrument is also, based on the market research undertaken in this study, of interest to both forestry companies and other equity funds active in the forestry sector in Africa.

As such, it is recommended that the AfDB, or another partner, consider developing, in addition to soliciting concessional resources for the Fund, a debt blended finance framework program with one or more concessional financiers to deploy loans similar to that of the FIP-AfDB Project. This framework would have the advantage of a "ready pipeline" of potential financing opportunities for the Fund, as well as the ongoing activities of other forestry companies and funds.

The Fund could also leverage the publicity and market access gained through the announcement of the Fund.²⁸ Similarly, the framework should be based on sound lending principles and, as such, should not be bound to finance the Fund's portfolio projects except where it fits the strategy laid out in a framework governing structure. These loans would typically be provided after several years of equity financed plantation establishment, as the project is approaching its first harvests. This debt could also be deployed in brownfield projects where assets and cashflow can be segmented, the debt therefore being raised against the separated assets.

Establishing an external fund or legal vehicle, separate from AfDB operations, is not necessary for this complementary framework approach; the AfDB already has experience and structures to channel FIP resources under the principles of blended finance. Rather, it would be more effective to seek programmatic approvals from the AfDB Board and CIF (or other Climate Facility) to pursue a blended finance framework for forestry.

²⁸ Includes both the financial modeling *ex ante* and the realized values/structures once investments commence

Next Steps: Implementation Planning

This section outlines the tasks leading up to the operationalization of the Fund, starting from the latter phases of this study and continuing through to the selection of the fund manager and first close of the Fund.

In order to implement the Fund, there are a number of steps that need to be taken both to complete preparatory work and operationalize the Fund itself. At a broad level, the concrete steps can be divided into five work streams: design & validation, partnerships, manager selection, fundraising, and deal sourcing.

Design & Validation

Through an iterative process, this final strategy design has been validated with both the AfDB and vetted through external stakeholders. The strategic concept was presented in Finland to a roundtable of DFIs, fund managers and forestry companies. Feedback was generally positive, and key critiques have been integrated as changes to the overall strategy of the Fund. This Final Report (public version) represents the culmination of the study, including all outstanding work tasks and summary thereof. Next steps for the operationalization of the Fund are the responsibility of the AfDB, key partners, and ultimately the selected fund manager.

Partner Engagement & Fundraising

These two work streams relate to building key non-financial and financial partnerships for the Fund, as well as securing investments for the Fund from concessional and commercial sources.

Key Partnership Opportunities

There are two main categories of partners that should be engaged immediately. The first is thematic partners, which include WWF Kenya and the CIF E&L Initiative as existing partners. Other consultations could be undertaken with organizations like TNC and other NGOs, particularly those consulted in this study [see Annex E]. Securing their feedback on the design of the Fund could help to raise awareness of the opportunity and also ensure the broadest consideration of NGO views, including the best ways to maximize support for sustainable forestry, climate change and gender. The second category is potential financial partners, namely commercial investors (private entities, DFIs, impact investors, etc.) and concessional investors (GCF, CIF, GEF, etc.), who would invest in the Fund.

While the AfDB can begin efforts to secure interest from potential investors, it should limit and carefully manage solicitations to private entities. This should be primarily the role of the fund manager, who will negotiate and structure investments from all limited partners in the Fund.

Fund Manager Selection

Selecting the right fund manager to manage the day-to-day investment and portfolio activities is critical to the operationalization of the Fund. This critical work stream will primarily be led by the AfDB, drawing on its past experience soliciting similar facilities. If

another anchor investor is identified, they will also likely participate in the selection of the fund manager.

Proposed Selection Criteria

In addition to the terms of reference, the following selection criteria are recommended as evaluation of the fund managers takes place:

- › Investment and exit track record (forestry and other sectors)
- › Understanding of and presence in Africa
- › Experience investing in forestry and ability to generate deal flow
- › Existing dealflow (i.e. indicative pipeline)
- › Ability to manage majority investments
- › Structuring and due diligence experience in forestry investments
- › Fund raising track record
- › Access to investors with an interest in forestry
- › Ability to add value to investments
- › Experience in governance of investments and portfolio management
- › Proposed fund structure and terms
- › Amount of investment proposed as general partner

Deal Sourcing

Deal sourcing will primarily be undertaken by the selected fund manager. Following selection and execution of a non-disclosure agreement, the full content of the final report should be shared with the fund manager. This, along with the selected manager's own network and market knowledge, can be used to build a concrete pipeline and begin appraising opportunities.

Conclusion

This study was funded through the CIF E&L Initiative to build upon AfDB's successful commercial forestry investment in the FIP by laying out concrete recommendations for the overall design and strategy of a specialized investment vehicle that can catalyse growth and sustainable performance of the African forestry sector. Following the study, the AfDB and WWF Kenya should proceed towards the launch of a specialized, long-term equity fund that focuses on planting more trees in Africa. The results of this will be both financially profitable and environmentally impactful. Furthermore, increased investments in the African forestry sector have the potential to greatly expand the creation of rural jobs beyond basic farming, which would also help strengthen the resilience of rural African communities in the face of a changing climate.

The 100,000 ha of forest targeted for planting by the Fund will be managed on a sustainable basis, with the intent of building plantation assets that are replanted over multiple cycles. The afforestation projects will be certified according to the FSC standard. This will ensure the Fund's contribution to sustainable development, and it will ensure a lasting positive impact in terms of climate change mitigation.

Thus, the Fund will substantially increase national carbon sequestration efforts in countries where it invests. Post-harvest timber serves as a relatively long-term carbon sink in the form of construction materials, furniture, utility poles and other products. Increasing the availability of local timber products could also offset some of the local demand for cement and steel, both of which are significant contributors to GHG emissions in Africa and globally. Overall, sustainable forestry is among the best impact-for-dollar investments possible in terms of achieving targets laid out by the IPCC and across many of the SDGs.

The Fund's overall strategy pursues a blended finance approach, engaging junior tranche concessional investors as a means to catalyse new investments from private investors into African forestry. These junior tranche investors have the potential to be truly catalytic; if structured properly, the risk offsets provided by the junior tranche will drastically increase the appeal of the Fund for investors that have otherwise made limited or no investments in the African forestry sector due to real and perceived risks and market barriers. Reaching sufficient scale would clearly have a transformational effect on both investor perceptions of African forestry and on the progress towards numerous development goals, including the SDGs and AFR100. Large-scale thinking is also necessary to attract the interest of institutional investors. Falling short of full capitalization but reaching a successful close would still enable the Fund to make a meaningful impact on both, albeit with somewhat less diversification.

In the short term, the AfDB, WWF Kenya and other potential anchor investors should consolidate and coordinate efforts toward establishing the Fund. Alongside ongoing fundraising and profile-raising efforts, the anchor investors should commence the competitive selection of a dedicated fund manager. It will be the selected fund manager's role to further refine the strategy recommended in this study, actualize indicative funding commitments, and identify concrete investment opportunities.