



**GREEN
CLIMATE
FUND**

Meeting of the Board
10 – 12 March 2020
Geneva, Switzerland
Provisional Agenda Item 17

GCF/B.25/02/Add.05

18 February 2020

Consideration of funding proposals – Addendum V

Funding proposal package for FP128

Summary

This addendum contains the following six parts:

- a) A funding proposal summary titled “Arbaro Fund – Sustainable Forestry Fund” submitted by MUFG Bank, Ltd.;
- b) No-objection letters issued by the national designated authority(ies) or focal point(s);
- c) Environmental and social report(s) disclosure;
- d) Independent Technical Advisory Panel’s assessment;
- e) Response from the accredited entity to the independent Technical Advisory Panel’s assessment; and
- f) Gender documentation of the funding proposal.

These documents are presented as submitted by the accredited entity and the national designated authority(ies) or focal point(s), respectively. Pursuant to the Comprehensive Information Disclosure Policy of the Fund, the funding proposal titled “Arbaro Fund – Sustainable Forestry Fund” submitted by MUFG Bank, Ltd. is being circulated on a limited distribution basis only to Board Members and Alternate Board Members to ensure confidentiality of certain proprietary, legally privileged or commercially sensitive information of the entity.

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Funding Proposal

Project/Programme title:	<u>Arbaro Fund – Sustainable Forestry Fund.</u>
Country(ies):	<u>Sub-Saharan African and Latin American countries as follows: Ethiopia, Ghana, Sierra Leone, Uganda</u> <u>Ecuador, Paraguay, Peru</u>
Accredited Entity:	<u>MUFG Bank.</u>
Date of first submission:	<u>(2019/06/26)</u>
Date of current submission	<u>(2020/02/17)</u>
Version number	<u>[V.019 FINAL]</u>



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Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the [GCF Information Disclosure Policy](#), project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

“FP-MUFG]-[Country/Region]-[YYYY/MM/DD]”

<p>A.19. Complementarity and coherence</p>	<p><i>Does the project/programme complement other climate finance funding (e.g. GEF, AF, CIF, etc.)? If yes, please elaborate in section B.1.</i></p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p>A.20. Executing Entity information</p>	<p>The Fund Manager FiM Asset Management S.à r.l. – AIFM, registered in Luxembourg (“AIFM” or the “Manager”) and Arbaro Fund SLP, registered in Luxembourg as a special limited partnership (“Arbaro Fund” or “Arbaro”) and Arbaro I GP S.à r.l (“General Partner”)</p>
<p>A.21. Executive summary (max. 750 words, approximately 1.5 pages)</p>	
<p>Arbaro Fund is ranked top 30 for the request for proposal (RFP) – mobilizing funds at scale (MFS) out of 350 funding proposals. Arbaro Fund will provide effective climate change mitigation outcome through investing in sustainable plantation forestry projects in emerging forestry markets of Latin America and Sub Saharan Africa, while also bringing adaptation co-benefits. This investment approach provides developing countries and their rural communities with a solution to increase carbon sinks by producing wood in a sustainable manner and conserving natural forests, whilst contributing to reduction of illegal logging. Besides direct mitigation achieved in forest plantations, Arbaro operations will lead to additional GHG emission reduction benefits: the protection of natural forests in project areas, as well as the provision of alternative wood resources, will support efforts to combat deforestation and degradation of natural forests in project regions, and part of the carbon contained in harvested trees will be stored in wood products. These additional benefits are, however, not claimed by the Arbaro Fund.</p> <p>The Arbaro Fund will identify and execute projects, focused on sustainable timber production based on the establishment of Greenfield projects and on the expansion, upscaling and technical improvement of Brownfield projects. Arbaro’s average investment size will be between USD 10 to 25 million per project, with a final portfolio of 8 to 12 underlying investments / portfolio companies. In Latin America, initially Arbaro contemplates investments in Ecuador, Paraguay and Peru; in Sub-Saharan Africa in Ethiopia, Ghana, Sierra Leone and Uganda.</p> <p>The key objectives of the Arbaro Fund are:</p> <ol style="list-style-type: none"> 1) <i>Provide effective climate change mitigation</i> <p>When trees are planted on non-forested land, they capture and store additional carbon dioxide from the atmosphere. During the lifetime of Arbaro, through its activities in its projects Arbaro is estimated to sequester up to 20 million tonnes of CO₂ (net effect).</p> 2) <i>Close the sustainable timber supply gap</i> <p>Most of the Arbaro’s target countries face or will in the near future face a significant supply gap in sustainably produced industrial roundwood. The local industries utilising this raw material will face severe problems unless the prevailing development can be turned around. Arbaro’s projects will seek to start closing this supply gap, and provide locally produced and sustainably produced timber, increasingly replacing imports and improving the country’s trade balance.</p> 3) <i>Support conservation efforts</i> <p>All plantation developments of Arbaro will be Forest Stewardship Council (“FSC”) certified¹, which is still rare in the targeted regions (See page 6 – Climate Eligibility Criteria and Additionality). The approach includes an element of conservation of existing adjacent natural forest, wetland or other such vulnerable habitats. On average these FSC certified plantation forest project will set aside 20% of its total land area for conservation purposes. Hence it is expected that for every 1 000 planted hectares 200 hectares will be actively conserved.</p> <p>By providing sustainably produced raw material to the local processing industries and forest product markets, Arbaro through its investments reduces the pressure to further increase utilisation of natural forest resources.</p> <p>In addition, and following its investment strategy which requires provision of positive social impact in addition to economic and positive environmental impact, the Arbaro Fund contributes the following co-benefits</p> <ol style="list-style-type: none"> 1) <i>Provide climate change adaptation co-benefits</i> <p>Improving resilience: By adaptive management practises (e.g. correct species and rotation choices) plantations can contribute to reduced vulnerability of near-by natural forests and other natural ecosystems by soil conservation, improved watersheds and by providing ecological corridors.</p> 	

¹ For details please refer to B1 on Permanence and Annex 23

Providing alternative livelihoods: Smallholder farming is an important source of employment and income for rural populations. Providing alternative livelihoods through formal employment opportunities improves the resilience of the rural communities and decreases dependence on climate sensitive subsistence practices. Up to 200 000 rural people are expected to benefit from the investments.

2) *Empower local communities and enhance capacities*

Arbaro aims to promote out-grower schemes, where communities in the proximity of a forest plantations will be trained to apply modern silviculture to their own land, thus providing several benefits such as additional and diversified income, economic empowerment and improving rural capacities. Out-grower schemes are envisaged to be supported as a combination of technical assistance provided by Arbaro's investee projects and by grant funding programmes.

3) *Provide formal employment opportunities*

Arbaro, through its investments, is estimated to provide direct employment to ca 5 000 people. In addition, it is assumed that indirectly Arbaro's investee projects will employ another 15 000 people and provide improved livelihoods for up to 200 000 people.

B. PROJECT/PROGRAMME INFORMATION

B.1. Climate rationale and context (max. 1000 words, approximately 2 pages)

Climate rationale: Effective climate mitigation through development of new permanent carbon sinks

When trees are planted on non-forested land, they capture and store additional carbon dioxide (CO₂) from the atmosphere. In sustainable forest plantations² the forest is created over time and once the first planted trees reach their harvesting age, they are harvested but new trees are planted to replace them. This cycle is continued perpetually. With such forest management a permanent carbon stock is created³, whilst providing raw material to the markets.

Arbaro Fund targets creating 75 000 hectares of new forest areas which will sequester up to 20 million tonnes of CO₂ during the lifetime of the programme. Arbaro Fund follows the Forest Stewardship Council (“FSC”) for forest management, which requires, among other things, that new forests are planted in non-forest areas or areas which have been deforested long time ago⁴ and therefore Arbaro Fund will never replace or convert existing natural forest or other vulnerable ecosystem with forest plantation.

Methodological approach

To estimate the carbon sequestration resulting from the implementation of the programme, Arbaro has developed a robust methodology that builds on internationally recognized approaches. First and foremost, Arbaro follows the general guidance of the IPCC⁵ as described in the 2006 Guidelines for national GHG inventories and the 2003 Good Practice Guidance for LULUCF that provides sector-specific recommendations. The 2006 Guidelines are applied by more and more countries in their national inventories and reports to the UNFCCC and supplemented by the 2013 Good Practices Guidance as well as the 2019 Refinement, it will continue to become the standard approach to be used by all parties under the Paris Agreement. Following this guidance, the carbon stock changes in the project areas since the beginning of implementation of each project are monitored annually. Only those carbon pools that are changing considerably due to the implementation of the project are selected. In a forest plantation most of the carbon changes happen in the tree biomass, mainly in the stem but also in the branches, leaves and roots, however carbon is also stored in dead organic matter and the soil. To estimate the sequestration of carbon in a project, the timber volume in the plantations is measured first hand through forest inventories annually⁶. Stem volumes are thereafter converted into tCO₂ based on approved conservative conversion factors.

Arbaro only claims net carbon sequestered in forest plantations that is additional and permanent. To do this Arbaro uses approaches from the methodologies of the CDM, as well as the VCS and the Gold Standard, the most widely recognized standards for voluntary carbon certification of projects. The baseline scenario (= without Arbaro project scenario) is assessed and any potential sequestration in the baseline and sequestration achieved before the programme activities is deduced from the sequestration achieved through programme activities. Any emissions that may result from the implementation of the programme is accounted and deducted from the programme sequestration. All harvested wood is assumed as a loss and no carbon stored in harvested wood products is claimed. To account for losses due to harvest a maximum sequestration that can be claimed is the long-term average, which is set using the recognized methodology:

² Please refer to Annex 23 on sustainable forest plantations

³ Please refer to Annex 22 on carbon methodologies

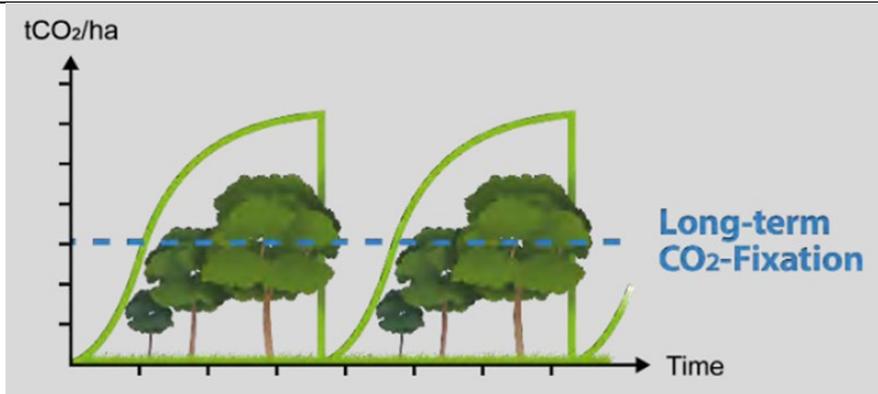
⁴ Cut off of 1994

⁵ Intergovernmental Panel on Climate Change - the United Nations body for assessing the science related to climate change

⁶ Forest inventories, which provide the first step in the mitigation impact calculation are based on scientifically approved methodologies and protocols and procedures accepted and globally used in the forestry sector. These consist of the physical, on the ground measurement of trees in representative forest samples, which allows to calculate the estimated existing volume in the plantations and growth over time. These data must be kept in the portfolio company records and, in the case of FSC be available for FSC to study, and in the case of Arbaro, be available for Arbaro fund to access and monitor.

Arbaro fund monitors these annually, and these are used in the calculation of the carbon sequestration.

The carbon sequestration results (among other items) are reported to the GCF as part of the annual reporting cycle.



Source: Gold standard

Permanence

Permanence is a concern in reforestation projects. Arbaro follows the approach of the VCS and Gold Standard. These certification methods issue permanent carbon credits and thus need to ensure that GHG benefits are permanent. For this they give great importance to the long-term sustainability of the projects: projects which are economically viable, socially beneficial and environmentally sound can continue operations in the long term. Both standards consider FSC certification as a proof of sustainability. Following this approach, all of Arbaro's projects must achieve FSC certification.

FSC was founded in 1993 through joint effort of environmental and social NGOs as well as producers and retailers of wood products. The FSC is a global multi-stakeholder membership scheme with a strong emphasis on NGO participation. FSC requires adherence to principles and criteria which need to be followed in a manner appropriate to the scale, intensity and risk of the project. FSC certification does not automatically last forever. The certified projects go through annual audits by external auditors and in addition, the certification has to be renewed every five years.

The FSC principles⁷ are:

- Principle #1: Compliance with laws - The certified entity shall comply with all applicable laws, regulations and nationally-ratified international treaties, conventions and agreements.
- Principle #2: Workers' rights and employment conditions - The certified entity shall maintain or enhance the social and economic well-being of workers.
- Principle #3: Indigenous peoples' rights - The certified entity shall identify and uphold indigenous peoples' legal and customary rights of ownership, use and management of land, territories and resources affected by management activities.
- Principle #4: Community relations - The certified entity shall contribute to maintaining or enhancing the social and economic well-being of local communities.
- Principle #5: Benefits from the forest - The certified entity shall efficiently manage the range of multiple products and services of the Management Unit (=certified area) to maintain or enhance long term economic viability and the range of environmental and social benefits.
- Principle #6: Environmental values and impact- The certified entity shall maintain, conserve and/or restore ecosystem services and environmental values of the Management Unit, and shall avoid, repair or mitigate negative environmental impacts.
- Principle #7: Management planning - The certified entity shall have a management plan consistent with its policies and objectives and proportionate to scale, intensity and risks of its management activities. The management plan shall be implemented and kept up to date based on monitoring information in order to promote adaptive management. The associated planning and procedural documentation shall be sufficient to guide staff, inform affected stakeholders and interested stakeholders and to justify management decisions.
- Principle #8: Monitoring and assessment - The certified entity shall demonstrate that progress towards achieving the management objectives, the impacts of management activities and the condition of the

⁷ Please refer to Annex 23, or www.fsc.org

Management Unit, are monitored and evaluated proportionate to the scale, intensity and risk of management activities, in order to implement adaptive management.

- Principle #9: High conservation values - The certified entity shall maintain and/or enhance the high conservation values in the Management Unit through applying the precautionary approach.
- Principle #10: Implementation of management activities- Management activities conducted by or for the certified entity for the Management Unit shall be selected and implemented consistent with the certified entity's economic, environmental and social policies and objectives, and in compliance with the Principles and Criteria collectively.

In addition, there are country specific adaptations of these principles and criteria. Today, FSC is the most recognized environmental and social certification scheme for forest management and known for its stringent requirements including annual external audits for certified projects.

Additional mitigation benefits through conservation and land use

Creating sustainable forest plantations also means that any existing natural forests or areas with otherwise high conservation value, such as wetlands, which are part of the overall project area, are conserved. On average this means that between 20% of the overall project area is conserved, with the responsibility of maintaining the integrity of these areas being placed on the project entity. These conservation areas provide further mitigation benefits, which however are not claimed as part of the programme. Together the plantation area and the conserved natural areas increase the resilience of the overall landscape against climate change impacts. Finally, in case of Arbaro Fund's projects, majority of the foreseen products produced from the wood will be mechanical forest products such as panels or sawn timber for e.g. furniture manufacturing or construction. In these products the carbon stock continues throughout the lifecycle of the product, i.e. significantly beyond harvesting of the tree. This additional sequestration is not claimed by the Arbaro Fund.

Arbaro Fund, by afforesting or reforesting oftentimes degraded land and protecting attached conservation areas of natural forest, will both establish new carbon sinks and contribute to reduced emissions from deforestation and land use change. This will make an important contribution to enable the target countries to achieve their climate targets, as forestry is one of the few sectors that allows sequestration of carbon dioxide and is reflected in many INDCs to the Paris Agreement and the national climate strategies. For detailed analysis of the target countries' climate policies and regional circumstances, please refer to Section D5 and Annex 23, Climate rationale, country context.

Climate eligibility criteria and additionality

Arbaro Fund is governed by its investment strategy, climate eligibility criteria and its ESMS. Three key building blocks of the investment strategy are:

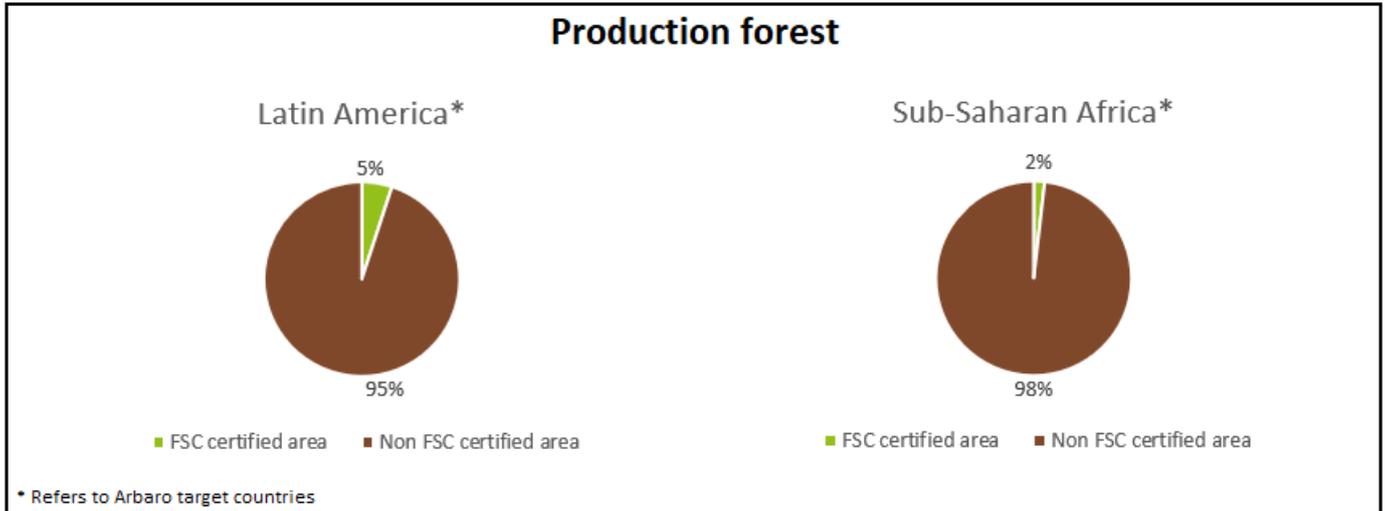
- 1) Climate mitigation benefits of the projects and their ability to provide effective carbon sequestration
- 2) Long term financial viability of the projects and their ability to provide returns to the investors; and
- 3) Social co-benefits of the projects and their ability to provide formal employment in their areas of operation.

As part of the climate eligibility, Arbaro assesses the baseline, barriers, investment case, funding mobilization potential as well as mitigation benefits (net sequestration impact) of the proposed project together with co-benefit creation potential. These together with the framework of conditions derived from the investment strategy and ESMS determine whether the proposed project will proceed in Arbaro's investment process⁸.

In Arbaro's target countries, FSC certified forests are still rare. The forest area with FSC certification represents a share of 5% in Latin America and 2% in Africa. These numbers include all production forests, also natural forests which tend to be much larger scale than forest plantations. Forest production under FSC standards is not a common practice in Arbaro countries, but an innovative approach that needs substantial support to become the industry standard and contribute to the shift towards sustainable production in the sector.

⁸ Climate eligibility criteria of the Arbaro Fund

Figure 1 FSC certified forests in Arbaro's target countries in Latin America and Sub-Saharan Africa



Responding to increased demand through sustainable production

Demand for wood-based products will grow to unprecedented levels over the coming decades⁹. By 2050, the world's population is projected to reach 9.7 billion. Rising numbers of people are only part of the story. At the same time, economic growth, urbanization and increasing prosperity are driving greater consumption¹⁰. Meeting these growing demands will increase the already huge pressure on the world's natural resources, forests and wood being no exception. WWF's Living Forests Model projects that wood harvesting will more than double by 2030, and almost quadruple by 2050: from 3.4 million m³ in 2010, to 7.6 million m³ in 2030 and 13.1 million m³ by mid-century¹¹. There are various measures that societies could, and should, employ to reduce the need to harvest trees – including more efficient saw mills and pulp mills, greater recycling, less wasteful consumption in rich countries and energy-efficient improved wood stoves in developing ones. But these will have only a limited impact. The bottom line is that we will be using more wood than ever before and there are limits to how much wood can be harvested from natural forests. Currently, planted forests make up only around 7% of forest cover worldwide, but supply a third of the total global production of industrial roundwood. Sustainable forest plantations can therefore provide an effective tool to produce the wood in smaller land areas efficiently.

In addition to having excellent bio-physical and general climatic conditions for growing forests, Arbaro's target countries are characterized by the macroeconomic drivers that fuel consumption:

2019-2024	Ethiopia	Ghana	Sierra Leone	Uganda	Ecuador	Paraguay	Peru
Population growth	2.49%	2.09%	2.03%	2.86%	1.30%	1.19%	1.04%
Economic growth	6.89%	4.90%	4.69%	7.25%	1.97%	4.05%	3.85%

Compound annual growth rates projected by the UN (population) and the IMF (real GDP)

Barriers and gaps

As an asset class, sustainable forest plantation investments in emerging markets and developing countries is unknown to most investors and particularly private investors have so far not been very active in the sector. DFIs/IFIs are typically among the frontrunners for new asset classes in less developed markets and can, as anchor investors, demonstrate confidence in new asset classes. However, in the case of plantation investments even the DFIs

⁹ WWF 2012

¹⁰ Kharas 2017

¹¹ WWF 2012

involvement has been limited so far. Patient capital and risk-taking capital – both public and private – is necessary to create evidence and catalyze bigger investments into the sector in developing countries. Hence, a successful launch of the Arbaro Fund has the potential to prove the environmental, social and economic concept of commercial sustainable forestry plantations and stimulate further – urgently needed – investment into the sector. It can contribute to bringing climate change mitigation through forestry from a broad concept on paper to scalable and replicable on-the-ground climate action.

In climate change mitigation and adaptation, sustainable plantation forestry programmes have not been widely used with Renewable energy and REDD and REDD + programmes having taken a more significant role receiving more attention from public and private investors. The underinvestment in Arbaro's target countries in this sector can be clearly seen in the reforestation rates these countries suffer but also in the proportion of sustainably produced plantation grown raw materials being available (see Table 3). Sustainable plantations contribute to the overall shift towards truly sustainable production of wood and wood-based materials with significantly smaller land area requirements than natural forest logging whilst providing significant additional sequestration benefits and contributing to keeping the existing forest carbon stocks of natural forests untouched.

Adaptation co- benefits

Providing positive social impact is in the core of Arbaro Fund's investment strategy, and one of the three key target deliverables that Arbaro has. It is also emphasized in the investment guidelines and in the ESMS of Arbaro. All of these are part of the binding legal documentation of Arbaro. Arbaro fund's projects always have to achieve FSC certification, which also requires the certified organization to maintain or enhance the social and economic well-being of local communities as well as employees.

In addition to provision of formal employment, the type of other co-benefits varies from project to project and depends on the local conditions and the needs of the local communities and other stakeholders. The overall social co-benefits of the Arbaro Fund are discussed in more detail in section D3, however below is a short summary.

Many economies in Latin America and Sub-Saharan Africa still strongly depend on agriculture. The national development plans and climate strategies of the target countries aim to reduce the vulnerability of the most exposed communities. Currently, about 40% of the world's working age population lives in rural areas. The rural economy, which includes nearly 80% of the world's poor workers, is characterized by serious decent work deficits. Labour market, organizational and representative institutions tend to be weak. Underemployment is widespread, incomes are low and access to social protection is limited¹². The distinctive characteristics of rural areas make them uniquely vulnerable to the impacts of climate change because of greater dependence on agriculture and natural resources makes them highly sensitive to climate variability, extreme climate events, and climate change (IPCC). Furthermore, low income base and lower than average education level increases this sensitivity as there is limited capacity to wait and limited alternatives.

By providing alternative livelihoods in rural areas through formal employment opportunities, sustainable forest plantations are key to increasing the resilience of both ecosystems and vulnerable populations facing the threats of climate change. Arbaro's projects will grow longer rotation logs for e.g. sawlogs and veneers logs, for panels and constructions material, ILO statistics show that longer-rotation solid wood plantation industry makes significant job contributions in contrast to short-rotation pulp and paper productions. Formal employment opportunities also decrease pressure to migrate to urban areas. Finally, formal employment creates economic activity, which in turn creates further alternative livelihood options and decreases dependence on subsistence practices such as subsistence agriculture or charcoal production and the vulnerability of the communities.

Profit sharing

Arbaro prefers land lease structures to land ownership, where possible, in order to allocate more funding to afforestation rather than purchasing land. When such land lease structures are applied, benefit sharing mechanisms are put in place to assure long term alignment between the stakeholders (e.g. landowners, communities). These structures vary from project to project but can include, in addition to annual land lease being paid, a royalty payment on volumes harvested or other such profit share mechanisms.

¹² ILO 2016; Working in Rural Areas in 21st century

Community programmes

In addition to provision of formal employment, the forestry projects that Arbaro supports, provide multiple benefits to the local communities. The form of these benefits varies between the projects and depends on the needs of the communities. These projects can include helping the communities with water sources (bore holes), building of school rooms, providing scholarships to local children, providing technical assistance to agriculture projects to improve food production, outgrower schemes to grow community forests, or building or repairing of roads or bridges. Below we provide a short case example of Arbaro's first investment, to highlight the social impact that the company has undertaken.

Case example

Arbaro's first investment project, for which Arbaro provides expansion capital, works closely with the local communities in its areas of operation in Sierra Leone and Ghana. The company provides direct employment to 1 600 people of which 17% are female. All employees have access to medical cover, maternity leave, compassionate leave and sick pay. The company pays salaries that are 30 % higher than the national minimum wage, and employees receive regular training and skills development. Employees are hired locally unless individuals with the required skillset are not available. The additional jobs in the region reduce the strain of communities on subsistence agriculture and land pressure. In many cases where subsistence agriculture fails (from e.g. climate related reasons) there are no other income sources, making the employment provided by this project crucial.

All employees and stakeholders can easily report possible compliance violations through an accessible grievance mechanism and confidential whistleblowing policy.

Training and knowledge sharing programmes reach beyond the immediate employees and cover also the communities in the proximity of the company's operations and other stakeholders. In 2018 the company's health awareness program reached more than 3000 people in the communities. The company also regularly arranges community safety campaigns in e.g. road safety and fire prevention.

The company contributes to improving the local infrastructure, and has to date upgraded, built or repaired approximately 2 000 kilometers of roads or rural trails.

The company supports community projects, which are chosen based on the communities' needs. The projects completed so far include construction of six school blocks in the communities, education support to children, through scholarships and provision of school materials - 2,000 children have benefited from such programs, reparation and construction of wells to facilitate access to clean water and agriculture projects, with ten communities per year, where the company provides inputs and technical support, as well as capacity building in agricultural activities and saving profits for future planting seasons.

Figure 2 Pictures from community meeting and work place training exercise



Figure 3 School building built by the company as part of their community programme



B.2. Theory of change (max. 1000 words, approximately 2 pages plus diagram)

Arbaro's target countries face or will face a significant supply gap in sustainably produced industrial roundwood in the near future. The wood products produced from this raw material include panels, sawn wood, as well as various applications of these such as furniture, pallets and various construction materials such as doors, window frames and roof trusses. This means, that these products either need to be sourced from unsustainable (and often illegal) sources, imported or replaced by less sustainable products (e.g. using aluminium roof trusses instead of wooden ones). In these markets, which from biophysical perspective, could produce these products locally, such developments are particularly worrying.

This gap is expected to further widen in the coming years as these economies are rapidly growing. This coupled with population growth, the two being the key drivers for wood product demand, will lead to expanding gap and increased pressure towards the already vulnerable remaining natural forests.

Table 1 – Country data

	Ethiopia	Ghana	Sierra Leone	Uganda	Ecuador	Paraguay	Peru
Sustainable supply gap ¹³	4-5 million m ³	2-3 million m ³	1 million m ³	3 million m ³	1.0 million m ³	1 million m ³	2-3 million m ³
Population growth (2019-2024)	2.49%	2.09%	2.03%	2.86%	1.30%	1.19%	1.04%
Economic growth (2019-2024)	6.89%	4.90%	4.69%	7.25%	1.97%	4.05%	3.85%

Compound annual growth rates projected by the UN (population) and the IMF (real GDP); sustainable supply gap estimated by Arbaro Advisors

Arbaro's projects will make a significant contribution to CO₂ sequestration: When trees are planted on non-forested land, they capture and store additional carbon dioxide from the atmosphere. Since the focus of Arbaro is on sustainable timber production from planted forests, Arbaro conservatively only claims additional and permanent carbon sequestration achieved through afforestation / reforestation and carbon stock enhancement in planted forests through improved forest management¹⁴.

¹³ Annual industrial roundwood demand being met from unsustainable sources

¹⁴ See Annex 22 Carbon methodologies

At the same time, Arbaro's projects will see to start closing the supply gap, and provide locally sourced and sustainably produced timber, contributing to moving the local forestry sector towards sustainable sourcing. The wood produced in Arbaro's projects will replace unsustainable and informal sources of natural forest wood or imports and improving the country's trade balance. Arbaro's projects will also serve as an example for further similar developments in these countries.

The local industries utilising the wood raw material will face severe problems unless the prevailing development can be turned around. At the same time, unsustainable harvesting of remaining natural forests deteriorates landscapes and reduces carbon sinks thus accelerating climate change. Also, unsustainable harvesting of natural forests tends to be done on an informal basis without adhering to legality requirements, paying taxes, duties or royalties and legislation and best practises on labour, health and safety. This contributes to reduced economic resilience of the rural regions and increased vulnerability of its people.

Arbaro's projects will also in most cases include value adding processing, leaving higher value of the production in the region / country and providing locally made products into the markets (rather than e.g. selling squared logs to exports to be then produced as final products). As an example, Arbaro's first project is currently producing veneer from its wood, soon entering the next step in value addition and starting to produce plywood. Plywood is a versatile product capturing a price per cubic meter of manifold to veneer. There is significant demand in the countries and nearby region for plywood, and with no sustainable supply currently available, this product is currently mainly imported or produced from unsustainable natural forest resource.

Arbaro's activities can provide the mitigation impact (sequestration) and the co-benefits (supply of sustainably produced timber, provision of formal rural employment, increased economic activity) when done in scale. Arbaro reached its first closing after being shortlisted in the RFP (Mobilizing Funds at Scale), with some investors taking the view that Arbaro will grow to scale. But the 60 million USD of the first closing is too small, and it is essential that the Arbaro Fund grows to a beyond 120 million level. That will provide long term sustainability of the Arbaro Fund management team, adequate diversification of projects and through these the example effect to these markets. GCF plays a crucial role in this scaling up. It is expected that with GCF investment of 25 million, the Arbaro Fund size will reach ca 140 million USD dollars, and potentially attract further investors to reach its full size of 200 million.

With this and the leveraging effect that Arbaro's equity investment will have on the project level, the overall multiplying effect of GCF investment would reach to 15x.

GCF funding is sought with matching terms with the other Arbaro Fund investors and with same ranking.

Arbaro's Theory of change diagram



B.3. Project/programme description (max. 2000 words, approximately 4 pages)

Introduction

Arbaro will make investments in sustainable plantation forestry projects / companies which will expand, upscale and technically improve brownfield projects and / or establish new plantations in selected countries in Latin America and Sub-Saharan Africa, in which the Arbaro team has a demonstrated track record and long term on the ground experience, as well as solid networks. The team's network has allowed Arbaro to build a strong investment pipeline. Total number of investee projects will be 8-12. Arbaro investments will be equity investments, or investment in equity-like instruments including but not limited to shareholder loans or mezzanine facilities. Final country allocation, exact location of the projects as well as number and scale of the project is yet unknown as the projects will be implemented over the investment period of the Arbaro Fund, which ends in July 2022. It is however expected that the Fund will allocate a minimum of 5% of its total volume to each target country (please refer to Annex 17).

Arbaro Fund activities:

1) *Pipeline development*

The Arbaro Fund investment advisors will identify potential pipeline projects and screen those based on Arbaro's investment strategy, climate eligibility criteria and ESMS.

Projects that based on initial assessment fulfill the criteria move forward in the investment process to full formal due diligence.

2) *Assessment of project opportunities following Arbaro's investment strategy and ESMS*

The Investment Committee of the Arbaro Fund is involved in the various stages of the investment process. Investment Committee approval is required before the proposed project can move to the execution stage.

As part of the execution of an investment, the investment documentation is negotiated and entered into, after which the investment can be made.

3) *Investments in project level operations*

Arbaro invests in Portfolio companies and as part of the investment it is determined for what purposes the investment proceeds may be used. These include i.a. land rental or purchase, development of new plantation areas, management of forest areas, establishment of conservation areas, nursery operations, harvesting, transport and processing as well as other such portfolio company operations as approved by Arbaro.

4) *Arbaro Fund investment monitoring*

At the Arbaro Fund level, after the investment execution the main function of Arbaro is to monitor the portfolio company operations through reporting from the companies as well as active dialogue, participation in the boards of the companies as well as doing regular on-site visits to the production sites. This is to ensure that the investment conditions, including the ESMS is adhered to, and the impacts and returns are delivered.

For this, the performance of the portfolio companies is reviewed to assess performance against the targets, including financial, climate, environmental as well as social return and impact targets.

5) *Reporting throughout the Arbaro Fund lifetime*

The investors of the Arbaro Fund will receive quarterly updates on the performance of the portfolio companies as well as an annual E&S and Impact report.

6) *Exit from investments*

The Arbaro Fund has a limited lifetime of 15 years. Towards the end of this period the Arbaro Fund needs to start assessment of potential exit channels for each of the projects. This is done following the exit strategy of the Arbaro Fund (see section B.6.).

After Investment Committee approval the exit process continues to negotiation and execution of all exit documentation.

After execution, the exit proceed are received by the Arbaro Fund and subsequently distributed to the investors.

Investment Strategy of the Arbaro Fund

Investee projects may be new greenfield developments where the institutional structures need to be set up or existing enterprises in need of expansion capital. In each case however, there needs to be an element of increasing the forest

cover and in the case of existing enterprises improving of forest management practices to provide the sequestration benefits.

In addition, Arbaro will invest a minor share of its capital in selected value enhancing downstream activities such as wood processing. These investments will not be made on a stand-alone basis, but always integrated with a plantation investment.

Arbaro will always cooperate with local partners. These may be for example:

- local landowners;
- local existing forestry businesses seeking to expand their operations or needing a raw material source but not having financial resources or knowhow to grow it;
- other off-takers needing the material (e.g. further value adding processors);
- local investors.

Therefore, Arbaro's projects are developed taking into account the local needs and the local markets.

Arbaro's target regions and the initial target countries have ideal biological growing conditions and a growing domestic demand for timber products. The strict application of the "Site-Species-Market" approach for all investments will ensure that Arbaro's projects have access to various markets and different types of off-takers. This approach involves careful site and species selection, the use of up-to-date silvicultural practices and thorough considerations of market access and marketing strategy. The availability of water will be particularly relevant for site - species matching in regard to annual rainfall and distribution, as well as potential changes resulting from climate change. This consideration, together with measures such as erosion control, proper land preparation techniques, and protection of riparian vegetation will minimize any potential adverse impacts on water resources. The consideration of these water matters is specifically required by several criteria of the FSC standard¹⁵.

Arbaro prefers land lease models instead of land acquisition, which allows for optimal capital deployment to achieve a balanced investment portfolio with an optimized risk-return profile. A mix of mix of different rotations, as well as different species and age classes allows for more evenly spread out cash flows, interim capital redemptions and early as well as later exits.

All of Arbaro's investments will be FSC certified. Investments in social and environmental aspects are considered to be an integral part of each project to de-risk the projects to potential E&S issues and increase the quality and quantity of the production as well as its long-term sustainability.

Arbaro will actively manage the projects with its deep expertise in plantation management, with an aim to create strong companies and to realize the full potential of the identified plantations. Arbaro will inject management expertise in terms of planning, coordination and monitoring. Strong corporate governance systems will be implemented, as well as state-of-the-art forestry management systems.

¹⁵ Principle 6: Environmental Values and Impacts. Criterion 6.7 The Organization shall protect or restore natural water courses, water bodies, riparian zones and their connectivity. The Organization shall avoid negative impacts on water quality and quantity and mitigate and remedy those that occur.

Principle 9: High Conservation Values. Criterion 9.1 The Organization, through engagement with affected stakeholders, interested stakeholders and other means and sources, shall assess and record the presence and status of the following High Conservation Values in the Management Unit, proportionate to the scale, intensity and risk of impacts of management activities, and likelihood of the occurrence of the High Conservation Values: HCV 4 - Critical ecosystem services. Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.

Principle 10: Implementation of Management Activities. Criterion 10.2 The Organization shall use species for regeneration that are ecologically well adapted to the site and to the management objective. The Organization shall use native species and local genotypes for regeneration, unless there is clear and convincing justification for using others. Criterion 10.5 The Organization shall use silvicultural practices that are ecologically appropriate for the vegetation, species, sites and management objectives. Criterion 10.10 The Organization shall manage infrastructural development, transport activities and silviculture so that water resources and soils are protected, and disturbance of and damage to rare and threatened species, habitats, ecosystems and landscape values are prevented, mitigated and/or repaired.

Financial and return aspects

Arbaro's portfolio companies will derive their financial returns mainly from the sale of timber. Income for Arbaro is either derived from timber sales (dividends from portfolio companies) or through the sale of ownership stakes in the portfolio companies. By selecting the right investments, actively managing the projects, and ensuring an attractive exit, Arbaro targets an IRR of 12% p.a. for its investors. The implied gross return at project level is ca 15 %.

The three key return drivers in plantation forestry are the prices of end products, biological growth rates, and operational costs (see figure below). Arbaro will mainly target holding project land via lease agreements and therefore land prices also matter, but in most cases the impact on returns is smaller. Please note that each project is different and specific return drivers can vary widely. Before investment, Arbaro will always carry out a rigorous due diligence, financial modelling and benchmarking exercise to determine a wider array of value drivers as well as suitability of investment.

Initial target countries and markets

Arbaro focuses on emerging forestry markets in two main regional clusters within which the team will focus on selected countries. In Latin America, Arbaro will initially concentrate on Ecuador, Paraguay and Peru. In Sub-Saharan Africa, Arbaro will initially focus on Ethiopia, Ghana, Sierra Leone and Uganda.

Apart from strong macroeconomic drivers for increased wood products demand and good bio-physical growing conditions for forests, all of these countries are also characterized by deforestation which is partly driven by logging of natural forests:

Table 2 Deforestation drivers

Region	Country	Main deforestation driver	Logging a deforestation driver?	Share of primary deforestation attributable to logging
Sub-Saharan Africa	Ethiopia	Shifting agriculture	No*	<1%
	Ghana	Shifting agriculture	Yes	<10%
	Sierra Leone	Shifting agriculture	Yes	<10%
	Uganda	Shifting agriculture	Yes	<10%
Latin America	Ecuador	Shifting agriculture	Yes	<10%
	Paraguay	Large-scale agriculture	Yes	<10%
	Peru	Shifting agriculture	Yes	<10%

* Native forests of Ethiopia too degraded to allow for logging; however, wood fuel extraction is one of the most important drivers of forest degradation

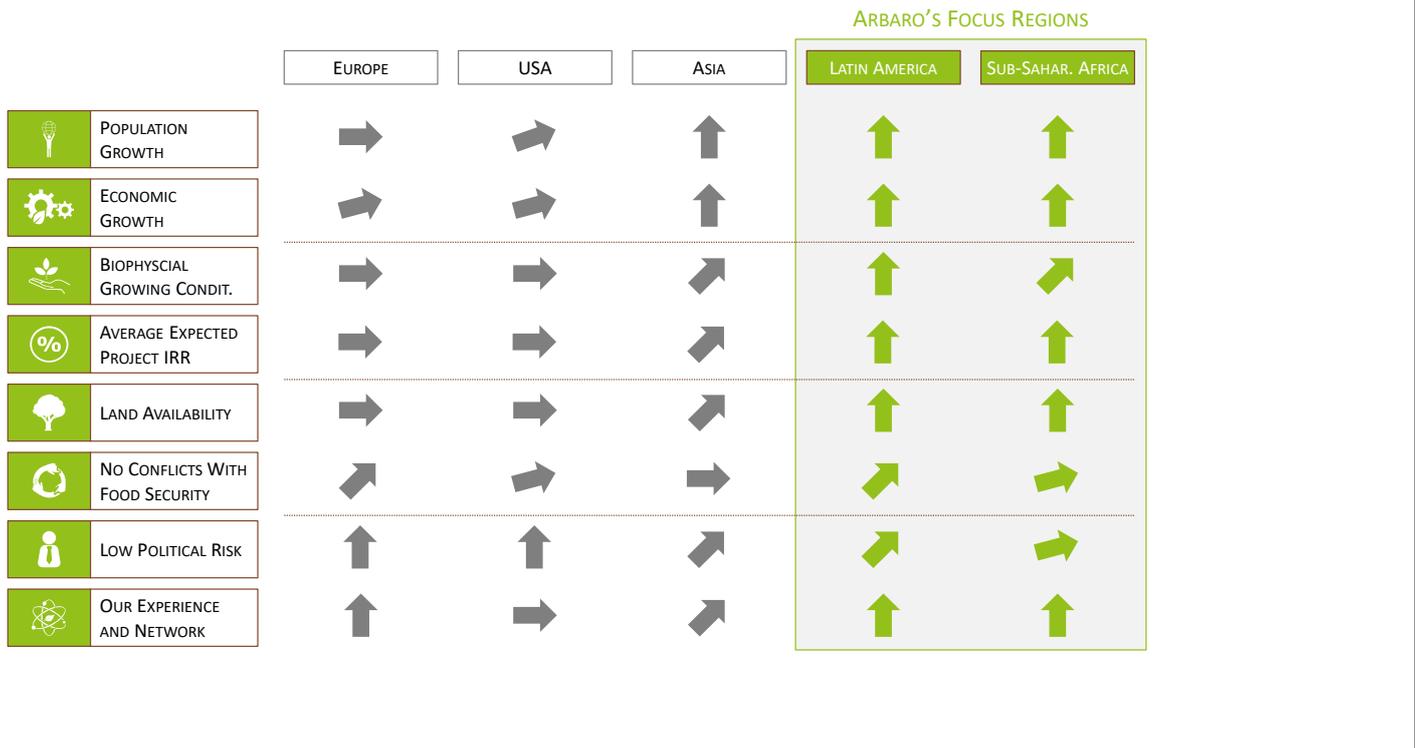
Please note that deforestation statistics by driver are not readily available. In all of the target countries the bulk of primary deforestation is due to agriculture. Logging and wood fuel extraction have been identified as primary deforestation drivers, but at a lower scale. However, more importantly, unsustainable wood removals are typically a main cause of forest degradation, i.e. among the key secondary deforestation drivers, which over time leads to easier clearing of the land area for agriculture.

In both regional clusters, the identified pipeline projects mainly produce timber for the domestic and regional markets.

Competitive advantages of target regions

Latin America is a more mature forestry region than Sub-Saharan Africa and has a higher share of timber exports. Land prices and labor costs are higher in Latin America than in Africa. However, the productivity of the land combined with a higher availability of skilled labor, up-to-date technology and professional service providers compensates for the higher costs. The major advantage of Sub-Saharan Africa is the in principle high availability of land, competitive land prices and very favorable domestic demand dynamics due to rapidly growing local populations and economies. In consequence, overall timber production costs differ more on project level than between the two target regions.

Figure 4 – Competitiveness of regions



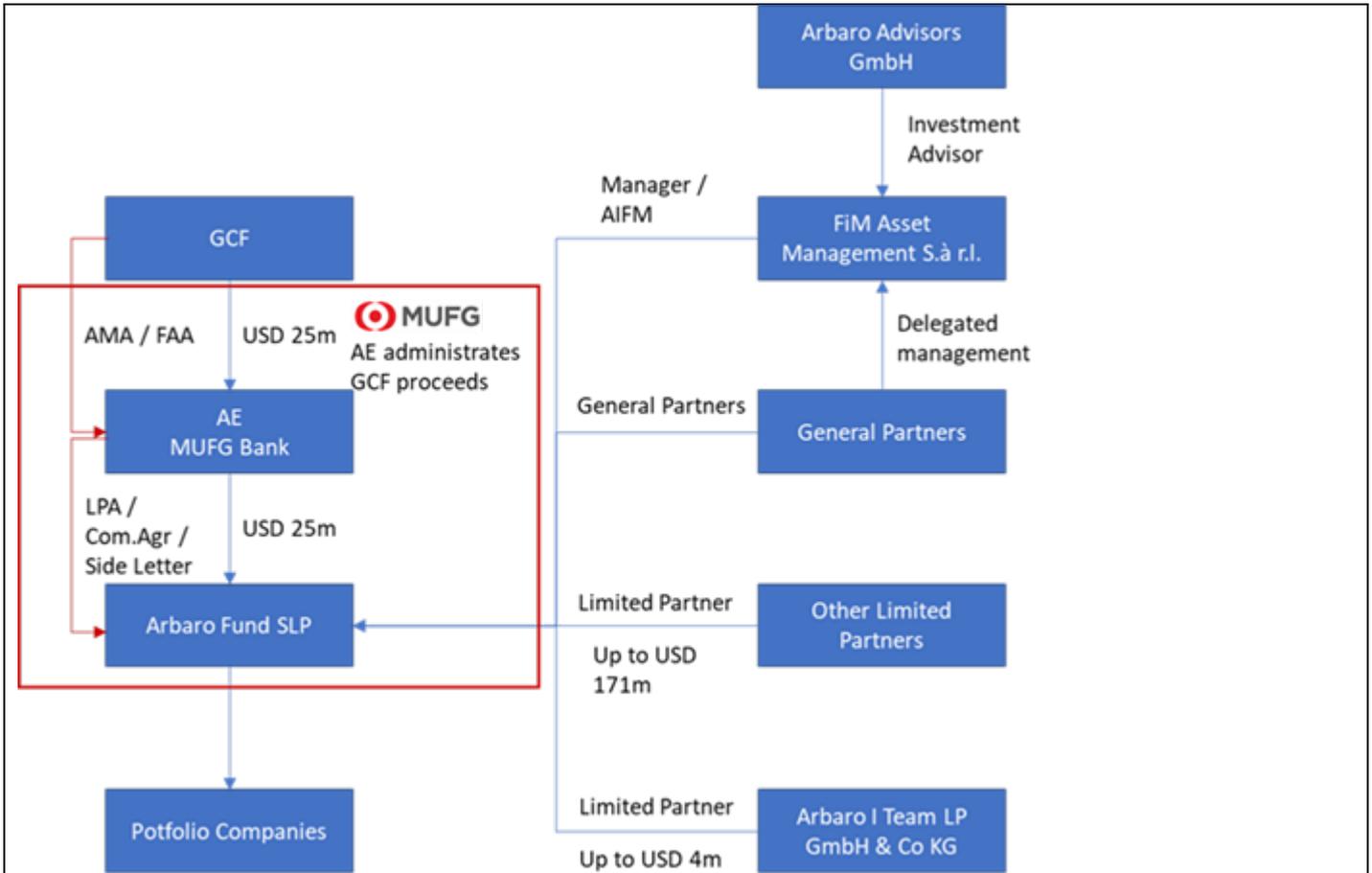
B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

Description of Implementation Agreements and Funds Flow Structure

MUFG Bank, as Accredited Entity will oversee the project administration, monitor the project implementation, and will insure project compliance with MUFG Bank’s own relevant policies. MUFG Bank will execute an agreement with Executing Entities, the AIFM and the Arbaro Fund, to make sure that Executing Entities will be responsible for the obligations which the Accredited Entity has under the Accredited Master Agreement.

The GCF investment into the Arbaro Fund is and equity investment and the Arbaro Fund in turn will deploy funding in the form of equity or equity-like instruments (such as e.g. mezzanine or shareholder loans) to its investee projects (portfolio companies).

Figure 5 -Flow of funds is described in the graph



MUFG Bank will review the execution of the projects, monitor the capability and performance of the Executing Entities, and assess any change in circumstances that may have a bearing on the plan in general and on the implementation and operation of the projects in particular.

More specifically, MUFG Bank will:

- conduct review missions,
- monitor the Executing Entities' compliance with equity effectiveness conditions,
- monitor the procurement of goods, works, and consulting services,
- monitor implementation and development performance,
- analyse progress reports,
- disburse GCF's equity proceeds, and monitoring project cash flows,
- review unaudited and audited project accounts and agency financial statements,
- monitor the Executing Entities' compliance with applicable MUFG Bank's policies as set out in relevant agreements,
- monitor the project compliance with environmental and social safeguards, social dimensions and gender development,
- monitor Executing Entities' compliance with covenants,
- strengthening the Executing Entities' financial management and developing their capacity,
- prepare project completion reports, and
- assess the achievement of the project outcome and outputs, and the contribution to achieving the development impact.

Description of Grievance Mechanism

Firstly, MUFG Bank has set means to receive claims by phone calls and emails which are set out in the webpages below.

<https://www.mufigamericas.com/contact-us>

<http://www.bk.mufg.jp/voice/index.html>

Also, Japanese Bankers Association (“JBA”), which MUFG Bank is a member of, provides alternative dispute resolution (“ADR”). Japanese Bankers Association concluded the agreement on “Strengthening its support for resolving complaints/disputes.” This agreement was made in conjunction with the Mediation Committee, the support organization for dispute resolution. The aim is to strengthen support for resolving complaints/disputes and facilitate use of the support system for dispute resolution. The following is an outline of the agreement:

1. Strengthening financial alternative dispute resolution (ADR) is a means to enhance customer confidence in banks. The banking industry has taken the step to provide a fair and neutral dispute resolution vehicle that can provide prompt and transparent dispute resolution and has established measures to ensure its effectiveness for customers. Member banks are committed to endeavouring to listen earnestly to the voices of customers and to prevent troubles from occurring.
2. Member banks engaged in transactions of derivatives and specified deposits, etc. shall agree to becoming the “target business operators” of JBA as a certified investor protection organization, unless reasonable reasons for not doing so exist.
3. When the resolution of a complaint forwarded to each bank or consumer relations office appears difficult, the member bank shall refer the subject to the Mediation Committee with the consent of the customer, and endeavour to promptly resolve the complaints in accordance with the mediation proposals. When a customer wants to utilize the Mediation Committee, etc., priority should be given to using the support organization for the dispute resolution that the customer wants to make use of.
4. Member banks shall observe the “Rules for Facilitating Complaint Resolution and Mediation,” and sincerely handle the claims to resolve them smoothly.
5. JBA shall proactively conduct public relations by means of leaflets and posters concerning consumer relations offices and the Mediation Committee.

In addition to above, MUFG Bank set out a dedicated page on MUFG Bank’s website to receive comments, feedbacks or complains for GCF-funded projects. The proposed grievance mechanism has been agreed by GCF Accreditation Panel and is implemented on MUFG Bank’s webpage. As for any complain for MUFG Bank and/or Executing Entities, before pursuing legal action, MUFG Bank’s GCF Focal Point will receive dispute resolution requests by emails or regular mails. Please see MUFG Bank’s Procurement Guidelines draft for details.

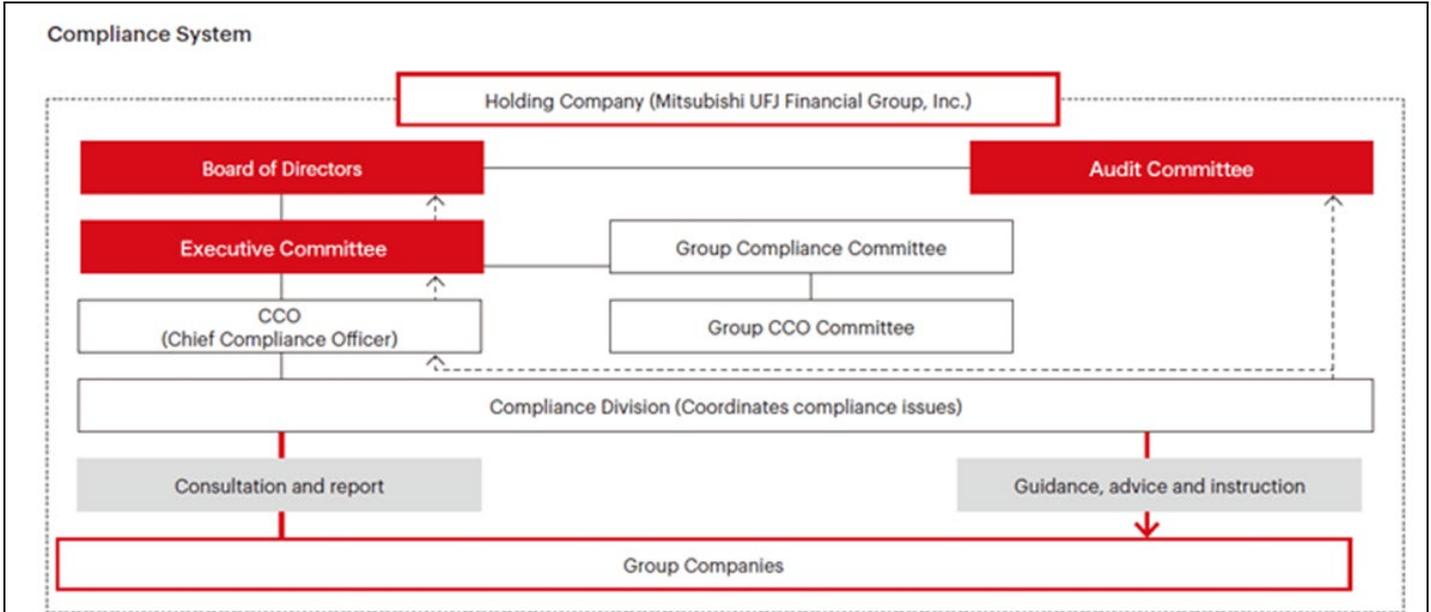
(Please visit : <https://www.bk.mufg.jp/global/productsandservices/corpandinvest/gcf.html>)

Description of MUFG Bank’s Compliance Policy

MUFG Bank has clarified our group mission, long-term vision and shared values in the Corporate Vision and expressed our commitment to meeting the expectations of customers and society as a whole. Furthermore, we have established the Principles of Ethics and Conduct as the guidelines for how the group’s directors and employees act to realize the Corporate Vision. This expresses our commitment to complying with laws and regulations globally, to acting with honesty and integrity, and to behaving in a manner that supports and strengthens the trust and confidence of society.

In addition, as MUFG Bank expands our business globally, we are committed to keeping abreast with developments in the laws and regulations of the jurisdictions in which we operate, including those targeting money laundering and bribery, as well as competition laws, while paying attention to trends in financial crimes.

Compliance management divisions have been established at the holding company Mitsubishi UFJ Financial Group, and at MUFG Bank, Mitsubishi UFJ Trust and Banking, and Mitsubishi UFJ Securities Holdings. Each compliance management division formulates compliance programs and organizes training courses to promote compliance, and regularly reports to each company’s board of directors and Executive Committee on the status of compliance activities. The holding company has the Group Compliance Committee while the three companies have Compliance Committees which deliberate important matters related to compliance. Additionally, the holding company has the Group Chief Compliance Officer (CCO) Committee composed of the CCO of the holding company and CCOs of the three companies. This committee deliberates important matters related to compliance and compliance-related issues for which the Group should share a common understanding.



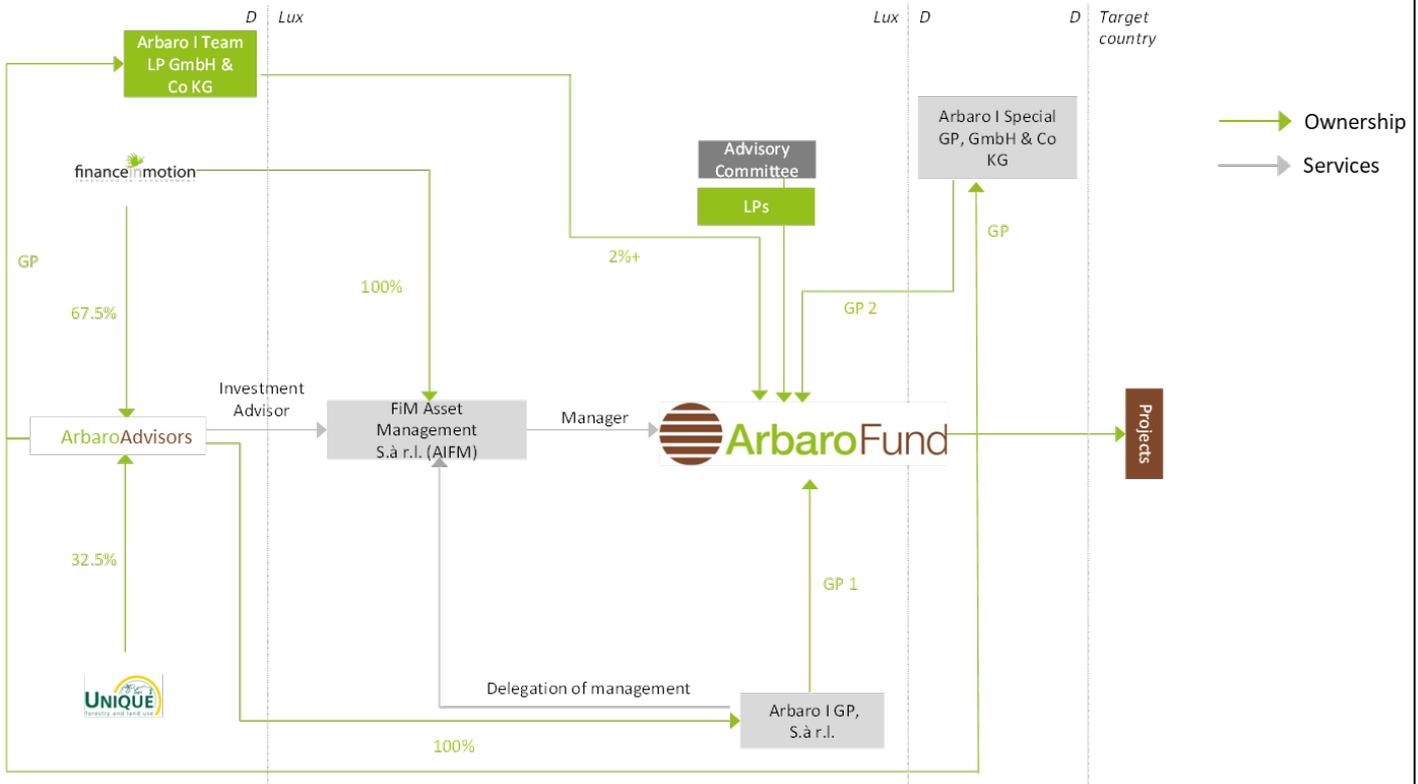
MUFG Bank's Anti-Money Laundering and Counter-Terrorist Financing (AML/CTF) Program

To be included in Confidential version

Arbaro Fund

Arbaro Fund, SLP is established as a Luxembourg special limited partnership (société en commandite spéciale) among the General Partner (Arbaro I GP S.à r.l), the Special General Partner (Arbaro I Special GP GmbH & co KG), and the investors as limited partners.

Please find below the structure for Arbaro Fund and its governing entities.



Arbaro Fund functions as a traditional private equity investment fund.

Arbaro Advisors GmbH acts as the Investment Advisor to the AIFM/Arbaro Fund and employs the investment team which is dedicated to Arbaro. The sole purpose of the company is advising the AIFM/Arbaro Fund on investment origination, evaluation, execution and monitoring. An Investment Advisor Agreement entered into between Arbaro Advisors and AIFM / Arbaro Fund governs this relationship. AIFM (the Manager), the General Partner and the Arbaro Fund SCS are the Executing Entities of the programme.

The General Partner (GP) is owned by the Investment Advisor and has no other purpose than acting as the General Partner for the Arbaro Fund. The GP appoints the AIFM and the Investment Advisor.

FiM Asset Management S.à r.l. acts as the AIFM of the Arbaro Fund. As the manager of the Arbaro Fund, the AIFM among other things will review the investment proposal of the Investment Advisor. The management of the Arbaro Fund shall be vested exclusively in the AIFM. The AIFM is regulated by the Alternative Investment Fund Manager Directive of the EU. The AIFM is 100% owned by Finance in Motion GmbH.

Finance in Motion GmbH and UNIQUE Forest Investment GmbH are the shareholders of Arbaro Advisors GmbH. Their relationship is governed by a shareholders' agreement. Finance in Motion hosts Arbaro Advisors in its offices and provide back office support on two levels: (1) on the company level it will provide accounting, HR, IT and communication support and (2) on the advisory level it will give transaction support, particularly in terms of legal advice, FX management, country and sovereign analysis. UNIQUE will provide technical back office support to Arbaro in the area of FSC certification, forest inventory, geographic information system (GIS), market intelligence, as well as environmental and social governance.

Finance in Motion GmbH as owner of the AIFM is supervised by the German financial sector regulator BaFin.

Each investor will enter into the Limited Partnership Agreement (LPA) with the AIFM / Arbaro Fund which governs the relationship and the rights and obligations of each party.

The Limited Partners shall have no part in the conduct of business of the Arbaro Fund or in the management or control of the Fund and shall have no authority or right to act on behalf of the Arbaro Fund.

Special General Partner (Arbaro I Special GP GmbH & co KG) is the entity receiving the carried interest.

Arbaro I Team LP GmbH & Co KG, is a German partnership created to channel the investment of the Investment Advisor (partners, managers, team members or other employees of the Investment Advisor, the Manager or any of their Affiliates and the members of the Investment Committee) in the Arbaro Fund as Limited Partners. Its commitment shall be equal to the higher of (i) two million US Dollars (USD 2,000,000) or (ii) in aggregate at least 2% of the Total Commitments as from the Initial Closing Date (the "Advisor Commitment").

Advisory Committee of the Arbaro Fund

The advisory committee of Arbaro is composed of representatives of the limited partners (i.e. investors). The LPA outlines the functions of the Advisory Committee and the procedures to be followed.

Auditor

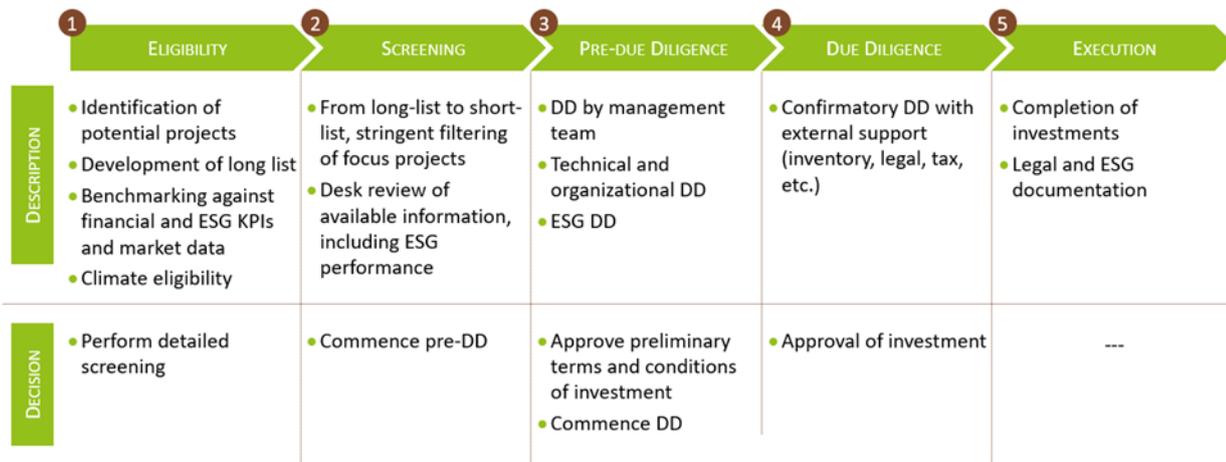
The Arbaro Fund is audited by EY Luxembourg.

Project level

Arbaro only invests in projects that meet all the investment requirements of the Arbaro Fund as defined in the legal documentation of the Arbaro Fund. The most important criteria include:

- Investment strategy, guidelines and restrictions (please refer to Annex 26)
- Environmental and social safeguards, as defined in the ESMS of the Arbaro Fund (please refer to Annex 6)
- Climate eligibility criteria (please refer to Annex 25)
- FSC certification (please refer to Annex 23)

Arbaro projects are chosen as part of a stringent investment process that consists of five steps, from early project identification to investment completion (corresponding to activities 1 and 2 presented in section B3). The investment process can be illustrated as follows:



Projects identified by the team as potential investments must successfully complete all the phases of the investment process: as a result only the few projects that comply will all Arbaro requirements will become investees. The investment process involves multiple assessments, that become more detailed as the process moves forward, and requires approval of the Investment committee of the Arbaro Fund. This investment committee consists of four external members who each have expertise in fields important to Arbaro: forestry, developing countries, impact investments, private equity. At the end of the process and prior to an investment decision, a project will have been subject to detailed due diligence of all relevant dimensions: climate, environmental, social, technical, economic, financial, organisational and legal aspects. The investment process is supported by detailed guidance and assessment templates. Please refer to Annex 6 for detailed information.

At the end of the investment process, in the execution phase, the investment terms are negotiated between Arbaro and the investee. Foreseen operations, Arbaro requirements and standards, as well as any necessary measures to address weaknesses identified in the due diligence process, are included in the investment documentation. Adherence to these is part of the legal obligations of the investee, and penalties will apply in cases of non-compliance. Once Arbaro is invested in a project, the investee starts the implementation of operations as foreseen in the investment documentation. In this phase and over the lifetime of the investment, Arbaro provides oversight and controls the investees (corresponding to activities 3 to 5 in section B3). Main activities include monitoring and reporting of the company performance and compliance with contractual commitments, active support and backstopping for strategic planning and in face of challenges, and exercising voting rights (please refer to section E7).

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

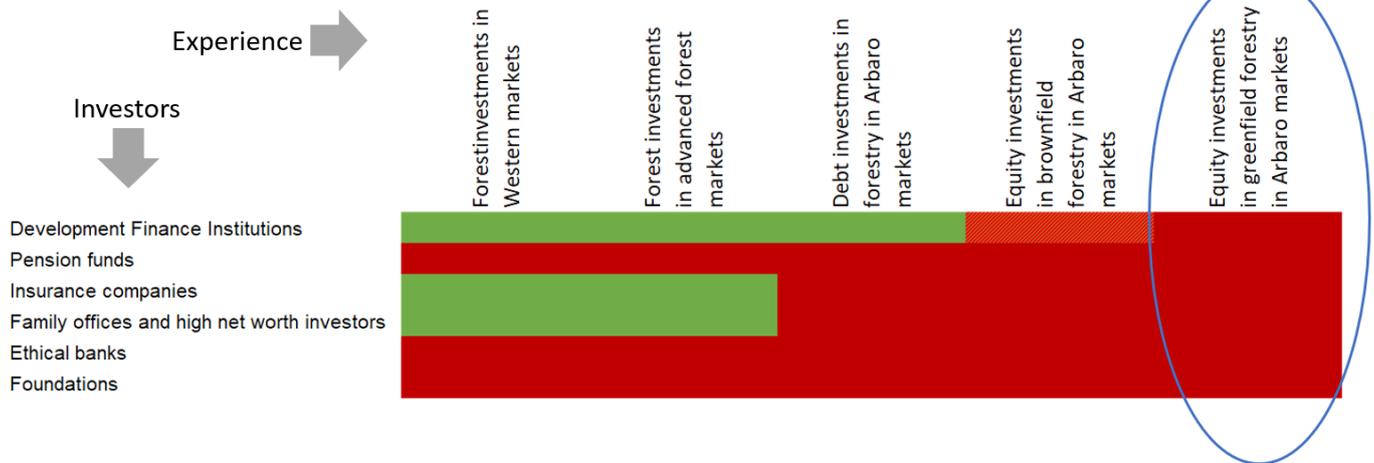
New asset class in emerging markets with limited access to finance

As an asset class, forestry investments in emerging markets and developing countries is unknown to most investors and particularly private investors have so far not been very active in the sector. DFIs/IFIs are typically among the frontrunners for new asset classes in less developed markets and can, as anchor investors, demonstrate confidence in new asset classes. However, in the case of plantation investments even the DFIs involvement has been limited so far and mainly debt has been provided.

In Arbaro’s target countries there have been limited international investments in sustainable forest plantations despite the strong needs to increase the supply to the market. During Arbaro’s development phase several other African forestry initiatives have failed to successfully complete their fundraising with private investors. GCF has a vital role in bringing scale to the Arbaro Fund and thus multiplying the impact that Arbaro is seeking to deliver. In addition to the funding provided and the associated impact delivered, a larger fund size will secure long term feasibility of the Arbaro Fund management. An investment by GCF, with a matching size to that of Arbaro’s anchor investor would unlock the whole amount of the anchor investor and is expected to bring the commitments beyond 120 million US dollars, which is the size required to sustain the team needed to deliver the intended investment strategy and impact.

Arbaro is innovative as it will be able to mobilize new types of investors into the sustainable plantation forestry sector in the target countries. This is important in order for the sector to attract funding in scale. An investment by GCF will play a major role in mobilizing private sector capital into the Arbaro and ensuring Arbaro will reach significant scale.

The following chart shows the average experience level in forest investment of different types of investors:



Diversified projects to combat climate change

In climate change mitigation and adaptation, sustainable plantation forestry programmes have not been widely used, with Renewable energy and REDD and REDD + programmes having taken a more significant role and receiving more attention from both private and public investors. However sustainable plantation forestry when implemented with high environmental and social standards, including careful land tenure considerations and following principles of true participation, provide significant mitigation and adaptation benefits. In addition, these programmes contribute to the overall shift towards truly sustainable production of wood and wood-based materials with significantly lower land requirements than natural forest utilisation. GCF's involvement in this sector is critical in bringing it to the forefront of battle against climate change. GCF's involvement will also provide Arbaro with further credibility, which is likely to accelerate the fundraising efforts. A GCF contribution is considered a stamp of approval and ensures adherence to highest ecological and social standards as well as clear climate targets. From the fund-raising activities with private institutional investors GCF's participation in Arbaro will significantly improve the positioning of the Arbaro, particularly among private investors who do not yet have a history in climate and land use investing and hence rely on GCF's and the AE's experience.

Barriers of entry

Sustainable plantation forestry achieves its highest mitigation and adaptation impact when new forest plantations are established, e.g. on degraded land. However, the cash flow profile of such greenfield investments creates barriers to significant investment in the sector. Greenfield plantations require large upfront investments (ca. 3 000-4 000 USD/ha), but only start generating positive cash flows after several years, sometimes decades after the first investment. Even fast-growing species such as acacia or eucalyptus will need 10-12 years under favorable growth conditions to reach a sufficient height and diameter for high value end uses.

This stretched-out cash flow profile – especially of long (wood growth) rotation projects with a high mitigation potential – puts the financing structure of a greenfield project under strain, as not only initial establishment costs but also maintenance costs in the early years of operation have to be financed up front until operational costs can be covered by cash inflows. Hence, greenfield plantation projects are not bankable for conventional debt financing and thus in dire need for flexible and patient equity financing, such as the equity contributed by Arbaro.

Crowding in / Example effect

Plantation forestry in many of the countries in Arbaro's target regions has seen only little investment to date. Despite offering attractive risk-adjusted returns and significant impact potential, especially private investors have largely shunned plantation forestry in the target regions for different reasons, incl. the sector being at a nascent development stage and high perceived operational or country risks. The proposed financing structure foresees GCF to invest following the same terms as other investors into the Arbaro Fund, i.e. the GCF investment will not be concessional. Nonetheless, it is expected that GCF's investment will catalyse further co-investments into the Arbaro Fund and into plantation forestry in the target regions over the medium term. This is because the GCF investment will help Arbaro to realize more projects in more countries and thereby create additional track record to attract future investors. Similarly, the GCF investment will support Arbaro in reaching a critical scale to ensure an efficient fund structure and sufficient

project diversification. As the Arbaro Fund foresees to reach an ultimate size of USD 200 million, there is plenty of room for further co-investments, meaning GCF's investment is not expected to crowd out, but rather to encourage other private and public investors to follow suit.

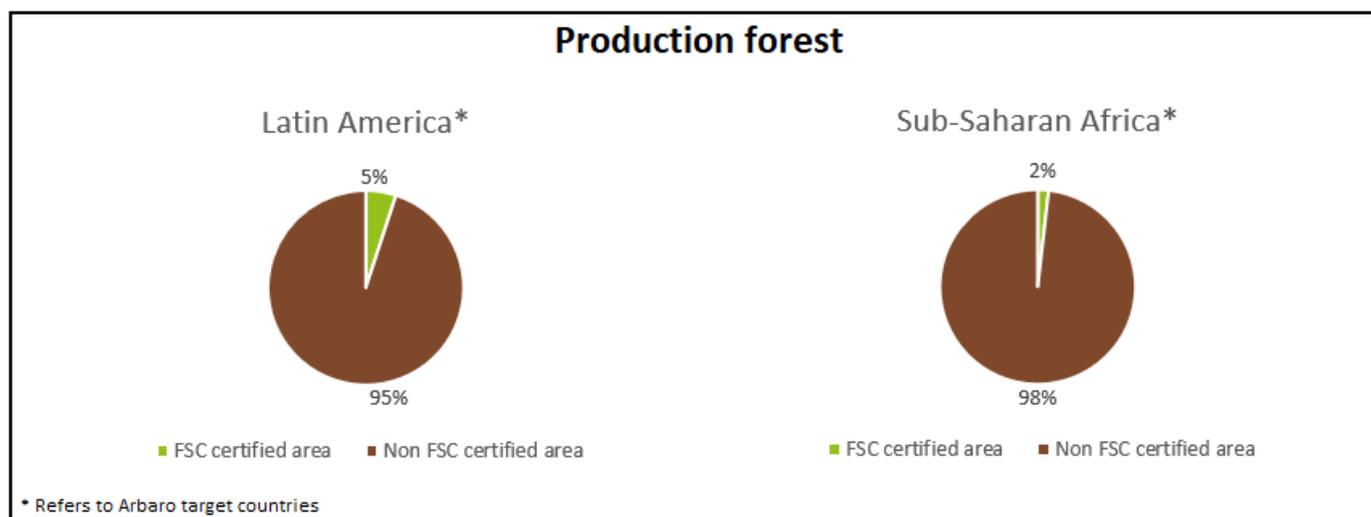
Multiplying effect of GCF investment

A GCF investment of USD 25 million would contribute to 12.5% of the ultimate fund size of USD 200 million targeted for Arbaro. Hence, every USD invested by GCF is expected to catalyse seven USD of further capital mobilised from other private and DFI investors directly into the Arbaro Fund. In addition, further capital can be mobilized indirectly on project level. Arbaro will typically not be the sole investor in the investee forestry companies, but provide financing alongside equity co-investors, such as the project developers, high net worth individuals or shareholders of the Arbaro Fund seeking direct exposure to certain projects, and mezzanine investors such as DFIs. On average, Arbaro assumes to contribute 50% of the funding needs of a project; 20-35% are expected to be financed with debt or mezzanine and the rest to be provided by other equity co-investors. Hence, GCF's investment into Arbaro is likely to be multiplied by a factor of 15x, potentially more depending on the financing structure of Arbaro's investments. Finally, Arbaro would be one of the first private equity funds to solely invest into sustainable forestry in the target regions and thus has the potential to spark follow-on investments by creating more track record for sustainable forestry as an asset class and by reducing perceived risks.

Technical innovation through FSC

In Arbaro target countries, the forest area with FSC certification represents a very small share of production forests: 5% in Latin America and 2% in Africa. Forest production under FSC standards is not a common practice in Arbaro countries, but an innovative approach that needs substantial support to become the industry standard and contribute to the shift towards sustainable production in the sector.

Figure 6 – FSC certified forests Arbaro's target countries in Latin America and Sub-Saharan Africa



When restricted to forest plantation operations, there is only a small number of companies that operate with FSC certificate in Arbaro target countries. This low number even includes international companies focused on export markets (e.g. pulp and paper producers), which usually manage large areas. With its investments Arbaro will support current and new companies to achieve FSC certification, which will improve their economic, environmental and social performance, access to finance and market position.

Table 3 FSC certified forest plantations in target countries

Country	Certified area	Number of companies
Ethiopia	0 ha	0
Ghana	21 430 ha	2
Sierra Leone	6 281 ha	1
Uganda	42 784 ha	4
Ecuador	37 138 ha	5

Paraguay	30 528 ha	4
Peru	1 100 ha	1

Note: certified area includes both plantation and protection areas

B.6. Exit strategy and sustainability (max. 500 words, approximately 1 page)

Arbaro investors (including the GCF)

Arbaro Fund has a limited lifetime of 15 years. This can be extended by one year with the approval of Arbaro's advisory committee. An extension of this maximum lifetime beyond 16 years requires a decision by a qualified majority of the investors (including approval of the GCF). What this means is that Arbaro will gradually start exiting the projects in later years of its term and return the capital and the profit made to the investors.

Arbaro investments - General

Arbaro takes a country-by-country approach to market liquidity and exiting its investments. A credible exit strategy with multiple options is a prerequisite for Arbaro's investment since the Arbaro has a limited lifetime. Arbaro's general goal is to establish or upgrade portfolio companies and their plantations to a stage where they can be considered high quality and well-developed brownfield investments by potential buyers. The Arbaro Fund will seek a project-specific exit strategy that maximizes the IRR while ensuring the long-term sustainability of the project beyond Arbaro's involvement.

Data availability on African and Latin American deals in our target countries is limited, but high-quality plantations and processing facilities are sought after assets in our region given how scarce they are.

Arbaro exit will be different for each project and depend on the project specific conditions. For example, in projects where Arbaro's local partner has a significant stake in the project, they may wish to gradually take over the project thus providing the Arbaro an exit. However, in each case the exit considerations will be done based on continuing the project as a going concern.

1. *Economic arguments – rational investor*

Good assets attract good buyers: a FSC certified asset is more interesting to a buyer whose own policies and regulations require certification or who otherwise has interest in sustainability than to one without such requirements / interest – our project will all be FSC certified.

FSC certification is likely to add a premium to the selling price of the asset; a buyer who is not interested in carrying on sustainable forest management practices would lose the certification and therefore it would be irrational to pay the premium.

Unsustainable forest management practises (in extreme case clear cut / no replanting) would only make sense if the asset can be bought very cheap and the raw material can be quickly sold at high price, however:

- a. Selling with a high price is not possible because clear cut would mean flooding the market with excess quantities of the raw material, which would depress prices
- b. A rational buyer would therefore continue to maintain and harvest slower

Hence, a rational investor would continue sustainable forest management practices out of economic self-interest.

2. *Regulatory dimensions*

Various licences and approvals are needed in order to operate a plantation business. Often these would include sustainability requirements and unsustainable practises could result to losing official licence to operate.

3. *Social dimension: social licence to operate – rational investor*

The over-time developed positive relations with different stakeholders and the social licence to operate provide an economic value but also significantly reduce the risks related to the project.

Benefits include:

- stable and motivated work force
- no litigation
- no arson
- stable off-take agreements
- stable supply agreements (out-growers), etc.

A rational investor would seek to maintain these.

4. Know Your Customer (KYC) requirements

Arbaro follows strict KYC guidelines and always has to identify the beneficial owner the parties it deals with as well as assess the profile of its shareholders and management. For this exercise Arbaro consults negative lists which are part of the World-Check database. In addition, it shall review that no contracts are entered into or partnerships formed with, or to the benefit of, any individual or institution named on the list of sanctioned persons promulgated by the United Nations Security Council or by the Council of the EU in connection with financing of terrorism.

5. Contractual obligations

Arbaro can include sustainability obligations in the (exit) sales agreements, although these will be difficult to enforce if breached.

6. Exit options

TYPE OF INVESTOR	MOTIVES
INSTITUTIONAL INVESTORS (pension/sovereign wealth/private equity funds, insurance companies, foundations etc.)	<ul style="list-style-type: none"> • Steady income and portfolio stabilization • Diversification benefits • Attractive financial returns
TIMOS AND TIMBER FUNDS	<ul style="list-style-type: none"> • Market penetration or expansion of market share • Realize synergies • Diversification into markets/products • Dividend income
LOCAL/REGIONAL INDUSTRIAL FORESTRY COMPANIES	<ul style="list-style-type: none"> • Vertical integration • Secure wood supply (from sustainable sources) • Reduce operational expenses • Learning effects
MULTINATIONAL INDUSTRIAL FORESTRY COMPANIES	<ul style="list-style-type: none"> • Secure high-timber-growth locations for own wood supply • Geographical diversification • Strategic expansion of business portfolio
OTHER (INTERNATIONAL) INDUSTRIAL COMPANIES	<ul style="list-style-type: none"> • Secure access to resources • Geographical diversification • Expand business portfolio (industry diversification) • Market penetration

Note: Other potential exit routes include sale to management/other shareholders, sale to IFIs/DFIs or impact investors, as well as IPOs

7. Mitigation of non-permanence risks

The reversal of achieved carbon sequestration is a risk inherent to afforestation / reforestation operations. This can happen due to losses of achieved stocks (e.g. storms or fires) or due to the interruption of management practices (e.g. when the production cycle is not completed, or harvested trees are not replanted afterwards).

To address this risk in an effective manner, Arbaro follows an approach similar to the carbon certification standards VCS and Gold Standard. Since these standards issue permanent carbon certificates, addressing the risks of non-permanence is a crucial aspect for them.

Above all both standards give great importance to the sustainability of projects: projects that are economically viable, socially beneficial and environmentally sound can continue operations in the long term. In addition, both standards consider that FSC certification ensures the sustainability of the project and a strong commitment to continue operations in the long run. This view is shared by Arbaro.

Based on a tool developed by VCS to assess non-permanence risks of projects, the following table provides an overview of non-permanence risk factors and a description of how Arbaro implements mitigation measures for all of them.

Table 4 – Non-permanence risk factors

Non-permanence risk factors	Arbaro mitigation approach
Project management: species not proved or not adapted to the site, encroachment, unprofessional or non-local teams	<ul style="list-style-type: none"> • Best silvicultural practices and strict site species match • Partnership with local teams and highly professional management
Financial viability: long time until breakeven or funds needed until breakeven not secured	<ul style="list-style-type: none"> • Companies have reached or are close to breakeven at exit
Opportunity costs: more profitable alternative land uses	<ul style="list-style-type: none"> • Focus on degraded land, areas designated for forestry and areas with limited suitability for agriculture
Project longevity: poor commitment to continue management practices	<ul style="list-style-type: none"> • Long-term operational and financial planning • FSC certification
Land tenure: resources owned by other parties, disputes over land tenure / access to resources	<ul style="list-style-type: none"> • Clear land tenure • No projects on land with unresolvable disputes
Community engagement: poor consultation of local communities	<ul style="list-style-type: none"> • Continuous engagement with communities since project start
Governance: low governance score	<ul style="list-style-type: none"> • Proactive cooperation with institutions
Natural risks: high likelihood and significance of fires, pests and diseases, extreme weather, geological and other natural risks	<ul style="list-style-type: none"> • Prevention measures and emergency plans in place

Based on the approaches followed by recognized carbon certification standards, the investment strategy of Arbaro, its commitment to achieve FSC certification in all projects, as well as the high environmental and social standards applied, ensure that risks of non-permanence are properly mitigated in all the projects and provide sufficient assurance on the sustainability and continuation of management practices in the long run.

C. FINANCING INFORMATION						
C.1. Total financing						
(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)		Total amount			Currency	
		25 million			million USD (\$)	
GCF financial instrument		Amount	Tenor	Grace period	Pricing	
(i)	Senior loans	Enter amount	Enter years	Enter years	Enter %	
(ii)	Subordinated loans	Enter amount	Enter years	Enter years	Enter %	
(iii)	Equity	25 million			12 % equity return	
(iv)	Guarantees	Enter amount	Enter years			
(v)	Reimbursable grants	Enter amount				
(vi)	Grants	Enter amount				
(vii)	Result-based payments	Enter amount				
(b) Co-financing information		Total amount			Currency	
		175			million USD (\$)	
Name of institution		Financial instrument	Amount	Currency	Tenor & grace	Seniority
European Investment Bank		Equity	25	million USD (\$)	Enter years Enter years	Options
Private Investors		Equity	100	million USD (\$)	Enter years Enter years	Options
Other development finance institutions		Equity	46	million USD (\$)	Enter years Enter years	Options
Arbaro team		Equity	4,0	million USD (\$)	Enter years Enter years	Options
(c) Total financing (c) = (a)+(b)		Amount			Currency	
		200 million			million USD (\$)	
(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)		The Arbaro Fund achieved its First closing in July 2018, second / subsequent closings are expected by July 2020 with the following investors / commitments:				
		Investor	1 st Closing Amount (USD million)	2 nd Closing Amount (USD million)		
		DFI	15.0	10.0		
		Private	12.0			
		DFI	10.0			
		Private	7.5			
		Private	6.0	6.0		
		Private	5.0			
		Arbaro team	2.0			
Private	1.2					

	Private	1.5	
	<i>New investors</i>		
	GCF		25.0
	DFI		15.0
	DFI		10.0
	Other private investors		19.0
	Total	60.2	85.0
	Grand total		145.2

Further private sector investors / DFIs with commitments amounting to ca USD 60 million are expected to commit following GCF's commitment, and the final closing is expected to meet Arbaro's target size of USD 200 million.

Further financing will be attracted at the project level either in the form of equity from project co-investors or as mezzanine or debt. Whilst the final exact amounts of this funding vary project to project, it is expected that up to a similar amount to that of Arbaro's funding will be attracted at project level from other sources.

C.2. Financing by component

Component	Output	Indicative cost Options	GCF financing		Co-financing		
			Amount Options	Financial Instrument	Amount Options	Financial Instrument	Name of Institutions
Investment into plantation establishment and operations (Activity 3)	New plantations created and company operations	133.2 million	16.7 million	Equity	116.5	Equity	Arbaro Fund investors, see section C1
	Land is purchased or leased	34.8 million	4.2 million	Equity	30.6 million	Equity	Arbaro Fund investors, see section C1
Fund management, transaction, custody costs (Activities 1), 2), 4), 5), 6)	Fund management fees	26.7 million	3.3 million	Equity	23.4 million	Equity	Arbaro Fund investors, see section C1
	Fund costs	5.4 million	0.8 million	Equity	4.6 million	Equity	Arbaro Fund investors, see section C1
Indicative total cost (USD)		200.1 million	25 million		175.1 million		

Please see the attached budget calculation for details. Please note that the calculations assume that in the later years portion of the fees and costs are paid from dividends and exit proceeds, with the overall amount therefore exceeding the 200 million USD.

Country per country allocation is not available at this stage as the final project locations are only decided during the implementation period (investment period of the Arbaro Fund).

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities? Yes No

C.3.2. Does GCF funding finance technology development/transfer? Yes No

Arbaro’s projects will apply or develop towards applying best practices. This means that the projects implement state of the art silviculture in terms of modern nursery technologies, appropriate site-species matching, and growth and yield oriented thinning and pruning regimes. Particular consideration is given to work health and safety as forestry is exposed to a relatively high risk of working accidents. To ensure highest social and environmental standards Arbaro’s investments will be guided by FSC Principles and Criteria and the IFC Performance Standards.

Arbaro’s investments contribute to learning at individual and organizational level. The different levels of our knowledge management and capacity building is illustrated in the graph below.



Training of employees and service providers: Arbaro invests in pioneer markets for plantation forestry. Therefore, intensive training of our employees at different levels and of our service providers is a must and a permanent challenge. The training takes place in formalized courses and on-the-job.

Research & Development: Forestry is a R&D intensive business, for example in terms of matching different tree species with local site conditions or monitoring, selection / improvement of planting materials controlling pest and diseases, or optimizing operations in terms of work safety and efficiency. Arbaro will contribute to the widening of the local and regional knowledge base of forestry, as commercial plantation forestry in several countries is either at a nascent stage or largely untested. Hence Arbaro will increase the R&D potential of local enterprises or research institutions in forestry (and potentially agriculture) in the target regions. Investees’ R&D departments will cooperate closely with national and international research institutions. This helps Arbaro to ensure state of the art knowledge at company level. In return, the research institutions get prove of suitability of daily use of their concepts.

Inter-company benchmarking: Arbaro will be invested in 8 to 12 forest companies in different geographies. An inter-company benchmarking allows Arbaro to learn from the best. Exchange programs between Arbaro’s invested companies are part of its interregional learning approach.

Community engagement: Through community engagement programmes, Arbaro will directly invest into rural development in various topics (health, education, gender, climate smart agriculture). Additionally, Arbaro will support outgrower schemes to promote small scale forestry as an important land use for a diversified and sustainable livelihood strategy.

Interacting with forestry sector relevant authorities: Forestry has to deal and to comply with sensitive land and environment related questions. By doing forestry following international standards and best practices, Arbaro seeks to help formalizing a sector that often suffers from informality. Arbaro works closely with all forestry relevant local and national authorities.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

This section refers to the performance of the project/programme against the investment criteria as set out in the GCF's [Initial Investment Framework](#).

D.1. Impact potential (max. 500 words, approximately 1 page)

Mitigation impact

Arbaro will contribute to the improvement of the management of land and forest areas in its target countries through its forest plantation projects.

CO₂ sequestration: When trees are planted on non-forested land, they capture and store additional carbon dioxide from the atmosphere. To estimate the carbon sequestered by Arbaro, the overall guidance of the Intergovernmental Panel on Climate Change (IPCC) as well as methodologies from the Verified Carbon Standard (VCS) have been considered. The carbon sequestered by Arbaro projects corresponds to the net CO₂ sequestration as follows:

The net CO₂ sequestration is estimated by applying the following equation:

$$\begin{aligned} & \text{Net CO}_2 \text{ sequestration (tCO}_2\text{)} \\ & = \\ & \text{CO}_2 \text{ sequestration in the project} - \text{Baseline} - \text{Leakage} - \text{Other project emissions} \end{aligned}$$

Using this estimation methodology (for detailed methodology please see Annex 22), Arbaro projects are estimated to sequester 20 million tCO₂ during Arbaro's lifetime (15 years).

Some of Arbaro's portfolio companies may explore opportunities in voluntary carbon markets. Should any of the companies decide to proceed with issuing carbon credits (e.g. VCS or Gold standard), such credits would be deducted from the mitigation impact in the mitigation impact reporting.

It is foreseen, that such impact would be limited; assuming 200 MUSD fund, Arbaro's projects could be able to issue up to 4 million tCO₂ in credits. This only represents a small share of our 20 million tCO₂ total direct sequestration objective. The revenues obtained by companies from the sale of credits would be reinvested in the expansion of plantations, and thus result in the sequestration of additional carbon. Potentially this could also attract other investors due to better risk / return profile, diversified revenues or investors interested in carbon projects.

To account for this, the impact of the additional sequestration would be:

- Price of 5 USD per credit > 20 MUSD of additional funds for company
- Investment of 3,000 USD to establish one hectare of new plantations > 6,666 new ha
- Long term sequestration of 200 tCO₂ per ha > 1.3 million tCO₂ of additional sequestration

Therefore, the overall impact to the assumed net sequestration effect would be -2,7 million tonnes. Given the companies would only access voluntary markets, this may be over-estimation, but best estimation we can provide right now.

This means that the overall positive net sequestration would end up at 17.3 million tCO₂.

In addition, Arbaro projects will conserve (through direct conservation effort) up to 15 000 hectares of natural forest or otherwise vulnerable landscape, e.g. wetlands or habitats of endangers species. This will provide further mitigation impact during the lifetime of the programme, depending on the degradation level and rehabilitation needs of the conserved areas.

Further on, majority of the products produced from the wood will be mechanical forest products such as panels or sawn timber for products to e.g. construction. In these products the carbon stock continues throughout the lifecycle of the product, i.e. significantly beyond harvesting of the tree (in Arbaro's climate mitigation assumption this positive impact has not been accounted for).

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

Climate action through forestry is underdeveloped and the potential untapped

The adoption of the Paris Agreement during the COP21 lifted the importance of forests in climate change mitigation and adaptation on the global political agenda. The adoption document writes in Article 5:

"Parties are encouraged to take action to implement and support, including through results-based payments, the existing framework as set out in related guidance and decisions already agreed under the Convention for: policy

approaches and positive incentives for activities relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries; and alternative policy approaches, such as joint mitigation and adaptation approaches for the integral and sustainable management of forests, while reaffirming the importance of incentivizing, as appropriate, non-carbon benefits associated with such approaches.”

Global mitigation and adaptation efforts in the forest sector are still in their infancy and global climate action is centered around energy; moving to renewables or increasing efficiency. Whilst changes in the energy sector are important in reaching the Paris targets, forestry has potential to significantly exceed these effects. In forestry carbon is sequestered, i.e. negative emissions are achieved. Thereby forestry has the potential to make a major contribution to climate change mitigation. This potential is particularly powerful in regions where the biophysical growth conditions are good and adequate land with low competition is available and remaining natural forests are in jeopardy due to increased product demand. Together with the significant mitigation benefits, forestry provides significant adaptation co-benefits through improved livelihoods and hence increase resilience of the rural communities but also by contribution to improved resilience of the surrounding landscapes.

Patient capital and risk-taking capital – both public and private – is necessary to create evidence and catalyze bigger investments into the sector. The sector is yet to reach these in the emerging markets. Hence, a successful launch of the Arbaro Fund has the potential to prove the environmental, social and economic concept of commercial forestry plantations and stimulate further – urgently needed – investment into the sector. It can contribute to bringing climate change mitigation and adaptation through forestry from a broad concept on paper to scalable and replicable on-the-ground climate action.

From depleting natural forests to establishing profitable carbon sinks that reduce the vulnerability of communities

Arbaro's target regions are home to many low-income countries that are focused on achieving growth and development to reduce poverty and raise standards of living. Given the significance of natural resources in these countries, there is a danger of achieving short-term growth through over-utilizing resources and under-estimating the need of being prepared for future demand. This trend is evident in the rapid depletion of indigenous forest resources in the target regions and a lack of investment in sustainable forestry.

Ca. 24 million ha of forests have been lost in Sub-Saharan Africa (ca. 14 million ha) and Latin America (ca. 10 million ha) between 2010 and 2015 alone, making the two regions the deforestation hotspots globally. Deforestation and forest degradation is mainly driven by conversion pressure from the agricultural sector and unsustainable wood extraction. While doing so helps to spur economic growth today and meet the basic needs of current generations, continuing on such a path not only reduces options for future generations but could counter economic progress made because of the important contribution that forests make to people's livelihoods, several economic sectors and climate change.

The detrimental effects of over-utilizing natural forest resources are already felt in several countries in the target regions, e.g. Paraguay or Ghana, once had flourishing wood processing industries that are now suffering. The low level of investment in the forest sector, both in processing technology and in securing long term sustainable raw material supply is paralyzing the industry. Despite outstanding biophysical growth conditions, many of such countries have slipped from significant export proceeds from these products to importing a significant share of their forest product demand. Paraguay for example went from being a net exporter of forest products to becoming a net import in the last decade. This development is expected to continue unless the sector receives significant investment in new forest plantations, improved knowledge and technology.

In addition, these developments tend to result in the market operating largely on an informal basis which in turn means less formal employment opportunities, unsustainable production, low technical and knowledge capacity as well as lost revenue in the form of license fees, taxes and tax-like payments to the local authorities. Finally, if these developments continue, the industry will further deteriorate and after some years it may be that the local supply will completely rely on imports and the informal sector, neither of which will support the long-term sustainable development goals.

Arbaro aims to work in partnerships with the local industry players, both public and private to spur and revitalize local forest industries. By investing in sustainable forestry, Arbaro will contribute as a first mover and example setter on building an industry around a renewable and reliable sustainably managed resource.

Market innovation through forest plantations

Forest plantations have existed globally for decades but in many of the Arbaro target countries, they are not an integral part of the industry and developments have been slow and few. For example, Sierra Leone has just seen its first private investment in commercial plantation forestry a few years ago. In other countries, where more investments have already been made, e.g. in Peru, silvicultural management practices are oftentimes poor and internationally

recognized sustainability criteria such as the FSC are not followed. By investing in forest plantations that will be managed to the highest economic, technical, environmental and social standards, Arbaro will contribute to innovation in the local forest industries. In addition, global timber markets have already started moving away from forest products such as sawnwood from large diameter native species logs to more engineered products (e.g. finger jointing) from smaller diameter plantation logs from species like pine and eucalyptus. By providing the necessary raw materials and actively developing markets for its products, Arbaro will contribute to the necessary innovation in developing countries in the target regions to catch up with such global trends and become firstly self-sufficient in these products but going forward also export competitive.

Removing of barriers, scalability

Arbaro will contribute to scaling up the scope and impact of plantation forestry in the target regions. Commercial plantation forestry is largely at an infant stage in many of the target countries, forest industries tend to be underdeveloped and governments are just starting to appreciate the economic and climate benefits of plantation forestry, with public frameworks (e.g. regarding forest classifications, land tenure systems, community engagement, infrastructure, taxation) having significant potential to become more conducive. All this creates barriers for early movers such as Arbaro who have to invest significant time in understanding oftentimes large opaque markets and educating different local stakeholders such as policymakers, permitting agencies, financial institutions, communities or buyers about the dynamics of plantation forestry. In particular, being able to sell plantation grown timber in local markets that are both largely informal, oftentimes supplied with illegally source timber and used to native species, takes great efforts and patience.

Investments made after Arbaro's will benefit from removal of barriers and easier entry to this sector. Similarly, as forestry becomes more significant in a country, the more interest it will attract from ambitious individuals, more knowledge will grow around it and high-quality human capital will be more widely available locally.

Replicability

Similar programmes can subsequently be established in other regions or be further scaled up with additional funding. However, it is crucial to provide the example and scale it up to a level where it can be financially, ecologically and socially sustainable.

D.3. Sustainable development (max. 500 words, approximately 1 page)

Arbaro is highly committed to inducing sustainable development in developing countries, as evidenced by the sponsors' previous activities and track record. Every investment decision will be made based upon a triple bottom line approach that takes into account the economic, environmental and social sustainability of a project as measured against quantitative and qualitative performance criteria. Next to its mitigation potential, the sustainable development impact of every project will be an integral component of the investment decision making process. Arbaro will always seek to cooperate with local project partners (e.g. forestry companies or NGOs), whose values – as demonstrated by tangible evidence – are aligned with Arbaro.

Social co-benefits including adaptation co-benefits from project level operations

Providing alternative livelihoods

Smallholder farming is an important source of employment and income for rural people in most of Arbaro's target countries but in particular in those located in the Sub-Saharan African countries. The distinctive characteristics of rural areas make them uniquely vulnerable to the impacts of climate change because of greater dependence on agriculture and natural resources makes them highly sensitive to climate variability, extreme climate events, and climate change (IPCC). Shifting cultivation remains a dominant form of agriculture across these countries. Given these practices the rural population is especially vulnerable to climate change impacts; and for example, changing rainfall patterns (prolonged dry conditions) can have a devastating impact to the livelihoods of these people. This is further exacerbated by the low financial capacity and no or limited options for provision of income. Providing alternative livelihoods through formal employment opportunities in the forestry projects or supporting services improves the resilience of the rural communities and decreases dependence on the climate sensitive subsistence practices such as shifting agriculture.

Passing best practices, incl. employment formalization

The programme will establish and pass on best practices through its operations and thereby contribute to sustainable development. For example, a large contribution will be made through the formalization of labour, which especially in rural areas is widely unknown in several of the initial target countries. If applicable, this will allow people employed under the programme to benefit from wider social services like public social security or health insurances, which they would miss if informal employment standards continued to prevail. Similarly, best practices regarding working hours,

health and safety standards, vacation, etc. will be followed, which will benefit people employed under the programme beyond the monetary value of their salaries.

Contributing to developing local communities (incl. infrastructure, health and education)

Every project realised under the programme will have a community development/engagement component where investments are made into e.g. local infrastructure (e.g. wells, roads or bridges), health services (e.g. community clinics, nurses, malaria/HIV prevention) or education (e.g. school buildings, learning materials or scholarships) for the direct betterment of the livelihoods of local communities beyond the other wider benefits described in the sections above. Regarding infrastructure, it needs to be noted that oftentimes communities will also directly benefit from infrastructure developed by the project companies for commercial purposes such the expansion and improvement of road networks or building of bridges.

Reducing the vulnerability of local communities through improved agricultural practices

Rural areas in developing countries are characterized by dependence on agriculture and natural resources; high prevalence of poverty; isolation and marginality; neglect by policymakers and lower human development. The distinctive characteristics of rural areas make them uniquely vulnerable to the impacts of climate change and existing vulnerabilities caused by poverty, lower levels of education and isolation can all aggravate climate change impacts in many ways. The livelihoods of rural communities in the target regions of the programme rely on subsistence agriculture with no or only limited alternative employment opportunities, making them particularly vulnerable. Projects realised under the programme might involve outgrower schemes or community development programmes that will improve agricultural practices and hence reduce the vulnerability of local communities to climate change. Outgrower schemes will allow local farmers to use their land more efficiently and diversify their income base. In addition, certain tree species can be more resilient to climatic fluctuations than certain agricultural crops. Outgrower schemes will support such farmers to select crops that are suitable for their land, thereby reducing climatic risks. Similar outcomes can be achieved through community development programmes (see above) that improve agricultural practices e.g. through education or the provision of improved planting materials.

Mitigating the causes of urbanization

By establishing forest plantations in the countryside, the programme will generate labour in rural areas with no or only limited alternative employment opportunities – with subsistence agriculture oftentimes being the only form of economic activity. Doing so, the programme will help to mitigate the causes of urbanization, as particularly young people tend to migrate to cities to find employment and overcome economic disparities. Retaining such talent in rural areas will support the betterment of local communities and their well-being in the long run.

Gender-sensitive development impact

The projects realised under the programme will seek to offer employment opportunities or other benefits following a gender responsive approach. This means that Arbaro will use its best endeavours to ensure that the social and economic benefits that its stakeholder groups derive from the operations of its portfolio companies will be distributed in an equal basis taking into account the needs of the various groups and noting that such needs may vary between the groups.

From the sponsoring entities' previous experience, it is clear that forestry projects generally have certain areas of operation which are well suited and liked by female employees. Female planting teams have been successful in other projects for example in East Africa. Also, nursery operations typically attract female employees. It is therefore estimated that between 15 -30 % of the workforce will be female. This is seen as both reducing gender inequalities in the target regions and the vulnerability of local communities to climate change. Firstly, women living in rural areas of the target regions are oftentimes left with no employment opportunities other than – at most – subsistence agriculture, charcoal production or gathering non-wood forest products. Secondly, providing employment to women diversifies the income streams of families away from subsistence agriculture and employment of working men and thus reduces the vulnerability of their livelihoods.

Environmental co-benefits

Conserving natural forests and other natural ecosystems

The design and layout of FSC certified plantations is required to protect and conserve natural ecosystems, particularly natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods must be taken into account in the layout of the plantation. FSC requires that in each certified operation multi-stakeholder processes take place to identify high conservation value areas. Hence, when developed and managed in a sustainable manner and following best practises, a plantation project will always in itself include an element of direct conservation. FSC requires that at least 10% of the project area is set aside for conservation. However, in Arbaro's projects, on average 20% of the total land area of a project will be conserved, in an active manner, i.e. such

that the project is truly responsible for it. Through these practises, Arbaro envisages, through its projects to actively conserve approximately 200 ha for every 1 000 ha planted. Hence the overall direct and active conservation target of the Arbaro Fund is 15 000 ha, assuming a total investment volume of USD 200 million and depending on the final target project selection..

Enhancing degraded landscapes and improving resilience

All projects realised under the programme will seek to become FSC certified and hence follow strict environmental requirements. The environmental impact of forest plantations depends on the baseline. The programme will under no circumstances support the conversion of natural forests into forest plantations. In contrast, the programme will seek to afforest or reforested degraded landscapes for the commercial, yet sustainable production of timber resources. Besides creating additional carbon sinks, establishing forest plantations on degraded land helps to regulate soils and water flows. For example, by preventing soil erosion and water run offs, forest plantations contribute to halt the detrimental effects of land degradation. Furthermore, when forest plantations are established in between mosaics of still existing natural forests (e.g. in areas where deforestation is still on-going, but did not yet fully unfold) coupled with conservation efforts, they can provide migratory corridors to insects and other animals, hence contributing to preserving the biodiversity in such areas.

Reducing pressure on natural forests

One of the key drivers of natural forest degradation and ultimately deforestation in the target regions, especially in Sub-Saharan Africa, is informal and unsustainable timber extraction for multiple end uses such as charcoal, sawnwood or plywood production – oftentimes driven the high demand of a growing domestic population. By generating a sustainable timber resource, the programme will provide an alternative to natural forests as a source of raw material and thereby indirectly contribute to wider conservation efforts by reducing extractive pressures on natural forests over time.

Raising environmental awareness among local communities

Each project realized under the programme will actively raise the environmental awareness of local communities partly through operational risk mitigation practices and partly through community development activities. For example, raising awareness among local communities about the causes and detrimental effects of fires, landscape degradation through anthropogenic forest fires will be reduced. Similarly, the planting and conservation efforts of the different projects will raise the appreciation of local communities for the environmental value of forests as such and transfer knowledge of best practices in efficiently and sustainably utilising land. For example, outgrower schemes and community development programmes – if applicable – will educate subsistence farmers about improved agricultural practices and support them in increasing the biodiversity on their land and improve in selecting fit species for their sites.

Economic co-benefits

Generating employment

Arbaro's projects are estimated to provide direct employment to more than 5 000 people. In addition, it is assumed that each direct job will create another 2-4 jobs along the value chain, i.e. that another 10 000-20 000 jobs will be created indirectly. Further on, it is estimated that 8-10 people per each employee are supported as part of employee's extended family or through increased economic affluence and activity. This results in improved livelihoods for 200 000 people in rural communities. Importantly, generating employment especially in rural areas is key to providing alternative livelihoods to subsistence agriculture and thus to reducing the vulnerability of local communities to climate change.

Widening the local tax base

The programme will widen the local tax base in several ways. Among many other things, the plantation investments will generate profits, create employment, and fuel further investment in the resource starved processing sector. The forest sector in many of the initial target countries is dwindling due to a shortage in raw materials and the forest sector tends to be highly informal, i.e. taxes, both at individual employee level and at company level, as well as other payments such as licence fees, royalties etc. are not paid. This informality also leads to low participation in social welfare structures such as healthcare plans and pension schemes. Further growth and formalization in the forestry industry will create significant tax income for local governments, both directly through corporate income taxes and tax-like payments such as licensing fees or harvesting royalties paid by the project companies and indirectly through personal income taxes of employees and payments of other companies that benefit from the programme indirectly (e.g. contracted service providers or processing companies). This increase in tax and tax-like revenues for local governments has the potential to free up public finances that can be used elsewhere to spur sustainable economic development or climate action. While the positive impact on public finances is definite, particularly spillover effects are

difficult to quantify. The below table gives an indication of the potential improvements of public finances that the Arbaro Fund is expected to induce based on broad simplified average assumptions for both target regions.

Table 5 – Approximate tax revenues

Approximate tax revenues	USD million per annum
Corporate income taxes - plantations	3
Corporate income taxes - processors	4
Corporate income taxes - contractors	0.2
Individual income taxes - direct employment	7
Individual income taxes - indirect employment	6
Total	20

In total, the Arbaro Fund is foreseen to generate some USD 20 million of annual tax income for local governments once the plantations mature. The biggest contribution will be made through individual income taxes paid by direct employees of the project companies (ca. USD 7 million per annum), followed by individual income taxes from employment generated indirectly along the value chain (ca. USD 6 million per annum). For the sake of estimating tax revenues for the government, the calculations above conservatively assume one formal tax paying job to be generated indirectly per direct job in the project companies (5 000 in total), whereas the multiplier can actually be expected to be in the range of two to four (see previous parts of the proposal). While every project will take some time to reach full scale, individual income taxes can be collected relatively early, i.e. will generate immediate tax revenues for local governments. Once the plantations start harvesting trees and reach sustainable harvesting cycle (i.e. a balanced age structure), additional direct corporate income taxes of ca. USD 3 million per annum are foreseen to be generated through the project companies. In addition, the project companies are expected to hire local contractors (e.g. for planting, maintenance and harvesting operations) and supply local wood processors such as sawmills that will generate further tax revenues of ca. USD 4 million per annum. In addition, further public revenue can be expected from tax-like payments such as licensing or land lease fees and harvesting royalties as well as formalization spillover effects along the value chain, i.e. wider positive effects on the capability and willingness of individuals and companies to pay taxes in the countries of operation (e.g. through improvements in labour standards, invoicing or electronic payments). Similarly, the above estimates do not account for the increase in tax revenues for local governments from wider positive economic spillover effects of the Arbaro Fund, for example from attracting further investments into the forestry sector by contribution to market creation and a reduction in perceived country risks.

Substituting costly imports and thereby improving the current account balance

According to FAO statistics, Latin America and Sub-Saharan Africa imported forest products worth on average USD 17 billion per year from 2011-2015; forest product imports are likely to increase in the future with on-going economic and population growth in the target regions. While some countries like Brazil, Chile, Uruguay or South Africa have advanced forest sectors that generate significant forest product trade surpluses and other countries especially in Sub-Saharan Africa like Ghana or Mozambique export basic products like sawnwood or unprocessed logs on large scale e.g. to Asia, many developing countries in the target regions rely on importing several key, mostly higher value processed forest products, such as higher grade lumber, plywood, structural/engineered timber or treated utility poles, at high costs from overseas. For example, several African countries import utility poles from destinations as far as Chile, Finland or Australia due to a lack of domestic resources. Such dynamics put the already strained current account balances and local currencies of many countries in the target regions under additional pressure. By generating sustainable domestic timber resources, Arbaro will foster the development of local forest industries and thus contribute to improving the forest trade balance of such countries. Thereby it can ultimately support the betterment of their current account balances and foreign currency reserves.

Increasing economic diversification and reducing vulnerability to external shocks

Several countries in the target regions of the programme are highly reliant on a few export products and economic growth thus very sensitive to price swings in such products. For example, Paraguay's real GDP grew by 13% in 2010, followed by a slowdown to 4% in 2011 and a contraction of -1% in 2012, only to surge again to 14% in 2013. Paraguay's economy is highly dependent on soy and beef exports (almost 50% of exports) and thus vulnerable to external price shocks and extreme weather phenomena like "El Nino". This is seen in the economic contraction of 2012 that was mainly driven by country-wide drought coupled with a slump in global prices for agricultural products. By contribution to the development of a significant local forest sector, the programme can support countries like Paraguay in diversifying their economies and becoming less vulnerable to external shocks. In fact, in the case of

Paraguay, its economy used to be more diversified because the country was home to a flourishing forest sector that however relied heavily on supply from natural forests and now crumbles due to depleting natural resources.

Transferring knowledge and building capacities

Arbaro will invest in projects that will be guided by international best practices such as the FSC Principles and Criteria and the IFC Performance Standards. The projects will be managed towards economic sustainability by becoming inherently profitable and worthwhile economic ventures. At the same time, the projects will seek to utilize local labour to the highest extent possible and invest in training employees. Coupled with the on-the-job experience, this will lead to a transfer of knowledge and best practices as well as capacity building in the target regions, hence ultimately contributing to long-term economic growth and sustainable development.

Contributing to R&D potential in developing countries

Forestry is a R&D intensive business, for example in terms of matching different tree species with local site conditions or monitoring and controlling pest and diseases and development trials or programmes on native species and their suitability for plantation purposes. As an example, in Arbaro's second investment in Paraguay, an R&D trial has been commenced. This trial will establish plantation lots with native species under different silvicultural set-ups co-operating with a local research project for the production of high quality planting materials. The programme will contribute to the widening of the local and regional knowledge base of forestry, as commercial plantation forestry in several countries is either at a nascent stage or largely untested. Hence, the programme will increase the R&D potential of local enterprises or research institutions in forestry (and potentially agriculture) in the target regions.

Supporting local SMEs along the value chain

The programme is expected to have significant spillover effects to local forest industries and related economic sectors. First and foremost, the well-being and survival of local wood processing industries such as furniture highly depends on the availability of affordable raw materials, i.e. timber. Many companies in the wood processing industries of the initial target countries are small or medium sized enterprises, e.g. carpentry businesses employing a handful of workers. Such enterprises still are or used to be significant in several of the initial target countries, but are suffering from surging raw material costs due to dwindling timber resources, low quality roundwood supply and ultimately import competition as a result of increasing prices. Such dynamics with more and more enterprises going out of business can be observed in both countries that mainly rely on natural forests as source of raw material (e.g. Ghana or Paraguay) and countries where processors mainly source timber from (constrained) plantations Arbaro will contribute to reversing such trends by establishing sustainable local timber resources in the target regions.

Secondly, the projects realised under the programme – where available and suitable – will contract local service providers, e.g. for tree maintenance or transport activities. Many such contractors in the target regions are SMEs, meaning the programme is expected to spur their local business activity. Finally, if such enterprises are contracted, they will be required to ultimately abide by the same business practices like the project companies, e.g. in terms of health and safety. This way the programme will contribute to passing best practices along the value chain and create wider economic (e.g. increased productivity) or social (e.g. increased safety standards) benefits.

D.4. Needs of recipient (max. 500 words, approximately 1 page)

Countries in Arbaro's target regions are to a large extent recipients of development assistance and classified as such in the OECD DAC listing. In these countries rural population is largely dependent on subsistence agriculture and natural resources for their livelihoods; formal employment being scarce. Large proportion of households are below the poverty line, with rural poverty being much higher than urban poverty. Since large proportion of natural resources are effectively subject to open access, these resources act as safety nets to households that have little or no other means of income, and as a means of reducing risks and smoothing income by providing the option for deriving food and income from multiple sources. With population growth, increase in population density in rural areas, as well as the general overutilization of the resources, in many areas the resources around villages have been depleted so that households are finding it more difficult to access these benefits further increasing the vulnerability of these communities.

Arbaro will make a significant contribution to improving the position of the rural communities located within the its project areas primarily by providing formal employment opportunities. It is estimated that livelihoods of up to 200 000 people will be improved through the Arbaro's activities.

In addition to providing employment and source of income, the formal employment also shifts these people to the reach of healthcare and vocation education services as well as pension and social security system.

D.5. Country ownership (max. 500 words, approximately 1 page)

Table 6 Country policies

Summary		Policies in detail						
Country	Arbaro aligned with political strategy?	National development plan	National climate policy	INDC	NAMAs	NAPAs	National forest policy	National REDD+ strategy
Sub-Saharan Africa								
Ethiopia	✓	X	X	X		X	X	X
Ghana	✓	X	X	X			X	X
Sierra Leone	✓	X	(X)			X	X	
Uganda	✓	X	X	X		X	X	X
Latin America								
Ecuador	✓	X	(X)	X			(X)	X
Paraguay	✓	X	X	X			X	X
Peru	✓	X	X	X			X	X

The Arbaro Fund’s mission is aligned with the political strategy of every target country. The Arbaro Fund will contribute to climate change mitigation, and provide adaptation co-benefits to climate change and to social development in the target countries. This mission is aligned with the political strategy of each target country as evidenced in various national policies, incl. national development plans, national climate policies and INDCs submitted under the Paris Agreement. When a policy refers explicitly to reforestation/afforestation or sustainable forestry as a challenge or target for climate change mitigation/adaptation or social development, the Arbaro Fund’s mission is considered aligned with the policy, i.e. a “X” was assigned in the table above. If only indirect evidence exists, e.g. because a national climate policy does not yet exist, but documentation for its preparation (Sierra Leone) or only general targets for the LULUCF exist (Ecuador) do, the Arbaro Fund’s mission is considered indirectly aligned with the policy, i.e. a “(X)” was assigned in the table above. Blank fields do not indicate a conflict between the Arbaro Fund’s mission and the respective country policy, but either the lack of such a policy or the absence of a reference to reforestation/afforestation or sustainable forestry in that policy. No conflict between any reviewed national strategic policy and the Arbaro Fund’s mission was identified.

Every target country except for Sierra Leone explicitly intends to promote sustainable forest plantations. The main quoted motives are carbon sequestration and income generation. Sierra Leone identifies “reforestation, afforestation and agroforestry” as a mitigation opportunity in its third national communication to the UNFCCC and forestry is considered a key pillar of addressing vulnerabilities and building resilience in the medium-term national development plan. Several countries formulate forest plantation strategies, incl. Chile, Ecuador, Ghana and Paraguay. The INDCs of every target country except for Sierra Leone list reforestation/afforestation or sustainable forestry as important mitigation options, typically emphasizing the contribution of reforestation/afforestation to carbon sequestration. Only few target countries have already developed NAMAs or NAPAs, but the existing action plans oftentimes cover reforestation/afforestation or sustainable forestry. All countries except for Sierra Leone have drafted or passed national REDD+ strategies, all of which consider sustainable forest plantations as a strategic option. While most of the target countries link reforestation/afforestation or sustainable forestry with social or rural development, several countries consider reforestation/afforestation or sustainable forestry ways to adapt to climate change, incl. Ethiopia, Paraguay, Sierra Leone and Uganda. Please refer to annex 23 for country-specific summaries of the alignment of the Arbaro Fund’s mission with the national political strategies.

Capacity of AE and Executing Entities to deliver

MUFG Bank (Accredited Entity)

Building on over 350 years of financial expertise, Mitsubishi UFJ Financial Group (“MUFG”) has grown to become one of the largest comprehensive financial groups in the world. Today MUFG’s global network spans over 50 countries and regions, and employs 150,000 financial professionals in over approximately 2,300 offices, providing customers with a deep and diverse range of services and resources, to meet their local, regional and global financial needs.

The project finance practice within MUFG provides clients access to its global lending and capital markets businesses. MUFG has been Global No.1 in MLA League Table of Project Finance International (PFI)¹⁶ for seven years in a row from 2012. MUFG was also ranked Global No.1 for the third straight year since 2016 in Clean Energy & Energy Smart Technology under Bloomberg New Energy Finance Asset Finance Lead Arrangers League Table.

MUFG Bank plays an active role in the Project, will channel the resources to the Project as a private accredited entity and monitor the Project's compliance with the Arbaro Fund's standards (social, environmental, fiduciary and gender). MUFG Bank's supervision of the Project will be based on a periodic review of the Project provided by the Executing Entities.

Arbaro level

The Executing Entities needs to succeed in the following aspects for the Programme / Arbaro Fund to be successful:

- 1) Attract additional capital first to first closing and secondly to scale the Fund to USD 200 million
- 2) Set up the Arbaro Fund structures
- 3) Originate and execute the Arbaro Fund investments in a timely manner and in accordance with the fund target impact and financial returns
- 4) Run the investment such that they will increase in value and provide the desired impact
- 5) Exit the investments

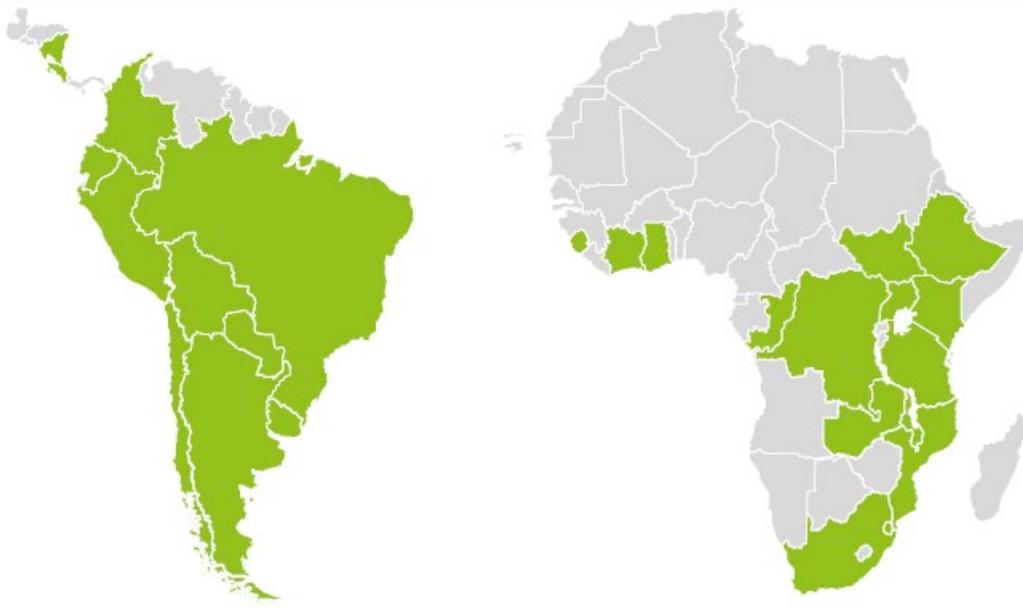
Arbaro Advisors GmbH is the Investment Advisor of the Arbaro Fund. Arbaro Advisors is owned by the Fund promoters, Finance in Motion GmbH ("FiM") and Unique Works AG ("Unique"). The Arbaro Fund promoters have a strong track record in emerging markets, working with a wide range of investors as well as in (in case of Finance in Motion) fund structuring and developments.

Arbaro Advisors will employ the investment team which will be dedicated to the Arbaro Fund. The key members of the Investment team have significant experience in the target countries and sectors as follows:

- Dr Markus Grulke, previous head of the forest investment team at Unique. Dr Grulke has experience in deal sourcing, due diligence and structuring of investments in Africa and Latin America. He has been involved in the development and co-management of different forest companies. He has also explored investment opportunities in Latin America and Africa (Paraguay, Uruguay, Chile, Peru, Nicaragua, Ecuador, Argentina, Mozambique, Tanzania, Uganda), accumulating long-standing experience in conducting forestry, economic, environmental and social due diligence missions and feasibility studies and pre-structuring of forest investments in these regions.
- Hanna Skelly has sourced, executed and managed a portfolio of approximately EUR 170 mm, focusing on forestry investments and development finance in Sub-Saharan Africa and Latin America, specifically in several of the main target countries of the Arbaro Fund (Ghana, Sierra Leone, and Uganda) among others.
- Marco Kaiser, with experience in product and strategy development and planning of FiM, overseeing FiM's Asset and Liability Management. Lead several transactions of FiM and the advised funds, with the latest investment in an African SME holding. He has broad experience in emerging countries, mainly focused on Western Balkan, South East Europe, Caucasus, Middle East, North Africa and Latin America.
- Thomas Ruf, who has developed and managed forest and timber industries in South America. He has experience in preparation of business plans for future investment projects, timber market research, valuation of forest based on natural and economic criteria, financial and legal due diligence and in forest management and production.
- Patricia del Valle, with experience in economic modelling of forestry projects, development of monitoring and forest information systems, E&S issues and assessments of forest investments in Paraguay, Argentina, Brazil, Nicaragua, Ethiopia, Mozambique, among others.
- Francisco Gomes, an investment professional with 5 years of experience in private equity deals, focusing in financial modelling, due diligence and deal execution.
- Mikko Reinikkala, a finance professional with 3 years of experience in support functions in asset management industry.

The following map highlights the countries where Arbaro team has direct experience:

¹⁶ <http://www.pfie.com/Journals/2018/01/23/m/i/k/PFIFLeagueTables2017.pdf>



Arbaro Advisors' owners

FiM is an investment advisor specialized in triple bottom line investments that advises development finance funds in achieving significant economic, social and environmental impact in emerging markets and developing countries. FiM is invested in 25 countries advising funds with currently outstanding assets under management of USD 1.8 bln. Cumulatively, FiM has advised more than USD 3 bln assets since its inception in 2009. The company is particularly strong and known as a leading advisor to public-private partnership funds leveraging donor contributions (e.g. BMZ, EC) and DFI investments (e.g. KfW, IFC, EBRD, EIB, FMO, OeEB) with private institutional investors. In addition to the investment funds FiM is operating technical assistance facilities for several donors with average annual approvals of ca USD 6m (400+ projects approved in last 5 years). FiM has an office network of 18 offices in three continents, including Latin America and Africa.

UNIQUE is an independent land use, timber advisory and forest management company, with experience in forest management planning, structuring forest investments, investment scoping and feasibility studies, technical, economic environmental and social due diligence of forestry projects and companies, development of forest investment projects in compliance with FSC; forest planning and operational management, process optimization and coaching of local forest company managers, market intelligence and value chain integration, forest product commercialization, forest information systems, forest valuation as well as monitoring and evaluation of productions, costs and E&S impact, FSC certification. UNIQUE has subsidiaries in Kampala (Uganda) and in Asunción (Paraguay). Also, it has regional and project offices in Uruguay, Kenya, Serbia, Vietnam, Kyrgyzstan, Ethiopia and Argentina.

Since its foundation, UNIQUE has carried out over 650 assignments in more than 75 countries.

D.6. Efficiency and effectiveness (max. 500 words, approximately 1 page)

Adequacy of the financing structure

Sustainable plantation forestry achieves its highest mitigation and adaptation impact when new forest plantations are established, e.g. on degraded land. However, the cash flow profile of such greenfield investments creates barriers to significant investment in the sector. Greenfield plantations require large upfront investments (ca. 3 000-4 000 USD/ha), but only start generating positive cash flows several years, sometimes decades after the first investment depending on several factors. For example, if eucalyptus trees are mainly produced for biomass or pulpwood under favourable growth conditions, they can be harvested 5-8 years after planting. If, however the target is to produce higher value timber e.g. for the construction or furniture industry, trees can take more than 20 years to mature depending on species selection and growth conditions. Even fast-growing species like eucalyptus will need 10-12 years under favourable growth conditions to reach a sufficient height and diameter for high value end uses.

The stretched-out cash flow profile – especially of long rotation projects with a high mitigation potential – puts the financing structure of a greenfield project under strain, as not only initial establishment costs but also maintenance costs in the early years of operation have to be financed up front until operational costs can (at least partially) be covered by cash inflows from commercial thinnings. Hence, greenfield plantation projects are not bankable for conventional debt financing and thus in dire need for flexible and patient equity financing. In fact, domestic debt

financing e.g. through commercial banks in the target regions is largely non-existent and only some DFIs have provided mezzanine debt to greenfield plantation companies – although typically with equity like features.

Plantation forestry in many of the countries in Arbaro's target regions has seen only little investment to date. Despite offering attractive risk-adjusted returns and significant impact potential, especially private investors have largely shunned plantation forestry in the target regions for different reasons, incl. the sector being at a nascent development stage and high perceived operational or country risks. The proposed financing structure foresees GCF to invest at the same terms like other investors into the Arbaro Fund, i.e. the GCF investment will not be concessional. Nonetheless, it is expected that GCF's investment will catalyse further co-investments into the Arbaro Fund and into plantation forestry in the target regions over the long run. This is because the GCF investment will help Arbaro to realize more projects in more countries and thereby create additional track record to attract future investors. Similarly, the GCF investment will support Arbaro in reaching a critical scale to ensure an efficient fund structure and sufficient project diversification. As the Arbaro Fund foresees to reach an ultimate size of USD 200 million, there is plenty of room for further co-investments, meaning GCF's investment is not expected to crowd out, but rather to encourage other private and public investors to follow suit.

Cost effectiveness and efficiency

Capital mobilisation

A GCF investment of USD 25 million would contribute to 12.5% of the ultimate fund size of USD 200 million targeted for Arbaro. Hence, every USD invested by GCF is expected to catalyse seven USD of further capital mobilised from other private and DFI investors direct into the Arbaro Fund. In addition, further capital can be mobilized indirectly on project level. Arbaro will typically not be the sole investor in the investee forestry companies, but provide financing alongside equity co-investors, such as the project developers, high net worth individuals or shareholders of the Arbaro Fund seeking direct exposure to certain projects, and mezzanine investors such as DFIs; in certain cases, Arbaro will also become a minority shareholder. On average, Arbaro assumes to contribute 50% of the funding needs of a project; 20-35% are expected to be financed with debt or mezzanine and the rest to be provided by other equity co-investors. Hence, GCF's investment into Arbaro is likely to be multiplied by a factor of 15x, potentially more depending on the financing structure of Arbaro's investments. Please refer to section E.6.2 for more details on the co-financing ratio. Finally, Arbaro would be one of the first private equity funds to solely invest into sustainable forestry in the target regions and thus has the potential to spark follow-up investments by creating more track record for sustainable forestry as an asset class and by reducing perceived risks; however, the resulting indirect capital mobilisation potential is difficult to estimate.

CO₂ sequestration

Based on a total fund size of USD 200 million, it is estimated that a total of ca. 20 million tons of CO₂ will be sequestered directly over Arbaro's lifetime. Hence, every 10 USD invested will contribute to the sequestration of approximately 1 ton of CO₂. This estimate is deemed conservative because it does not account for (i) emission reductions from indirectly preventing natural forest degradation and deforestation (see section E.3) and (ii) emission reductions after Arbaro's exit. GCF has not funded plantation forestry proposals before, meaning there are no directly comparable benchmarks. Nonetheless, the estimated mitigation costs of 10 USD/tCO₂ are competitive when compared to other – although less comparable – GCF funded projects. While landscape/REDD proposals report mitigation costs of 6-8 USD/tCO₂, renewable energy proposals project mitigation costs as low as 6 USD/tCO₂ up to of ca. 70 USD/tCO₂. Experience from other (non GCF funded) renewable energy projects in developing countries confirms that mitigation costs strongly depend on the technology and scale of a project, but can be significantly higher than what is estimated for the Arbaro Fund.

E. LOGICAL FRAMEWORK

This section refers to the project/programme's logical framework in accordance with the GCF's [Performance Measurement Frameworks](#) under the [Results Management Framework](#) to which the project/programme contributes as a whole, including in respect of any co-financing.

E.1. Paradigm shift objectives

Please select the appropriated expected result. For cross-cutting proposals, tick both.

- Shift to low-emission sustainable development pathways
 Increased climate resilient sustainable development

E.2. Core indicator targets

Provide specific numerical values for the GCF core indicators to be achieved by the project/programme. Methodologies for the calculations should be provided. This should be consistent with the information provided in section A.

E.2.1. Expected tonnes of carbon dioxide equivalent (t CO ₂ eq) to be reduced or avoided (mitigation and cross-cutting only)	Annual	1,333,333 t CO ₂ eq
	Lifetime	20,000,000 t CO ₂ eq
E.2.2. Estimated cost per t CO ₂ eq, defined as total investment cost / expected lifetime emission reductions (mitigation and cross-cutting only)	(a) Total project financing	<u>200 million</u> USD
	(b) Requested GCF amount	<u>25 million</u> USD
	(c) Expected lifetime emission reductions	<u>20 million</u> t CO ₂ eq
	(d) Estimated cost per t CO₂eq (d = a / c)	<u>10</u> USD / t CO ₂ eq
	(e) Estimated GCF cost per t CO₂eq removed (e = b / c)	<u>1.25</u> USD / t CO ₂ eq
E.2.3. Expected volume of finance to be leveraged by the proposed project/programme as a result of the Fund's financing, disaggregated by public and private sources (mitigation and cross-cutting only)	Post GCF participation (excluding 1 st closing and public investors already engaged prior to GCF interest):	
	(f) Total finance leveraged	<u>205 million</u> USD
	(g) Public source co-financed	<u>10 million</u> USD
	(h) Private source finance leveraged	<u>195</u> USD
	(i) Total Leverage ratio (i = f / b)	<u>8.2</u>
	(j) Public source co-financing ratio (j = g / b)	<u>0.4</u>
	(k) Private source leverage ratio (k = h / b)	<u>7.8</u>
E.2.4. Expected total number of direct and indirect beneficiaries, (disaggregated by sex)	Direct	14 000 men / 6 000 women
	Indirect	100 000 men / 100 000 women
	<i>For a multi-country proposal, indicate the aggregate amount here and provide the data per country in annex 17.</i>	
E.2.5. Number of beneficiaries relative to total population (disaggregated by sex)	Direct	
	Indirect	
	<i>For a multi-country proposal, leave blank and provide the data per country in annex 17.</i>	

E.3. Fund-level impacts						
<p>Select the appropriate impact(s) to be reported for the project/programme. Select key result areas and corresponding indicators from GCF RMF and PMFs as appropriate. Note that more than one indicator may be selected per expected impact result. The result areas indicated in this section should match those selected in section A.4 above. Add rows as needed.</p>						
Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
M4.0 Reduced emissions from land use, reforestation, reduced deforestation, and through sustainable forest management and conservation and enhancement of forest carbon stocks	M4.1 Tonnes of carbon dioxide equivalent (t CO ₂ eq) reduced or avoided (including increased removals) - forest and land use	Portfolio company data using agreed methodology of Arbaro	0	7 million tCO ₂ eq sequestered	20 million tCO ₂ eq sequestered	<p>Arbaro Fund reaches its target size of 200M USD and deploys funding in 8-12 projects in its target regions.</p> <p>Targets may be adjusted following guidance by the COP related to GHG emission level assessments under the NDCs. An additional indicator related to contribution to NDCs might be added following future changes in the GCF result management framework.</p>

E.4. Fund-level outcomes						
<p>Select the appropriate outcome(s) to be reported for the project/programme. Select key expected outcomes and corresponding indicators from GCF RMF and PMFs as appropriate. Note that more than one indicator may be selected per expected outcome. Add rows as needed.</p>						
Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
	Number of technologies and innovative solutions transferred or licensed to promote low-emission development as a result of Arbaro Fund support.	Portfolio company data	0	1	1	The portfolio companies use and further develop sustainable forest management practices leading to CO ₂ sequestration.
M5.0 Strengthened institutional and regulatory systems	M5.1 Institutional and regulatory systems that improve incentives for low-emission planning and development and their effective implementation	FAO data Public data of the associations and other such institutions	<p><u>Regulatory:</u> Regulation exists but it is outdated</p> <p>Enforcement is lacking</p> <p><u>Sectoral:</u> No association</p>	<p><u>Regulatory</u> Changes in regulation</p> <p>Enforcement is improved but not consistent</p>	<p><u>Regulatory:</u> New regulation is in place</p> <p>Enforcement is consistent</p>	Target levels will be reassessed as part of the due diligence process of the investments.

		<p>Portfolio company data</p>	<p>s exist or the have weak capacity</p>	<p>Sectoral: 1 new association or improved capacity of 2 associations</p>	<p>Sectoral 2 new associations, or improved capacity of 5 existing associations:</p>	<p>Qualitative indicator with two aspects:</p> <p>Regulatory: The forestry sector moves towards formalization and sector regulation is improved and enforced more efficiently</p> <p>Sector associations and other such institutions: Portfolio companies are active in sector associations and other such institutions in lobbying for more formalization.</p>
<p>M9.0 Improved management of land or forest areas contributing to emissions reductions</p>	<p><i>M9.1 Hectares of land or forests under improved and effective management that contributes to CO2 emission reductions</i></p>	<p>Portfolio company data</p> <p>FSC certification report</p> <p>FAO country data</p>	<p>0</p>	<p>25,000 ha of new forest area</p> <p>5,000 ha of conservation area</p>	<p>75,000 ha of new forest area</p> <p>15,000 ha of conservation area</p>	<p>Arbaro Fund reaches its target size of 200M USD and invests in 8-12 portfolio companies.</p> <p>Each portfolio company develops between 6,000-9,000 hectares of new forests.</p> <p>Each portfolio company achieves FSC certification</p> <p>In each project, on average 20% of the total land area is conserved.</p> <p>Targets are reassessed as part of the due diligence process of the investments.</p>

E.5. Project/programme performance indicators

Arbaro will choose its investment projects during the investment period of the Arbaro Fund. As of today, the Arbaro Fund has made two investments. For details please refer to section [xx].

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
<i>Sustainable supply of wood products increases in target markets</i>	<i>Volume in m3 of sustainably produced wood products entering the market or in forest stock</i>	<p>Portfolio company data</p> <p>FSC certification reports on portfolio companies' assets</p>	0	5 million m3	20 million m3	<p>Arbaro Fund has a limited lifetime of 15 years. Arbaro will seek a project-specific exits that ensure the long-term sustainability of the projects beyond Arbaro's involvement. Therefore, it can be reasonably assumed that the positive impacts that the Arbaro Fund's projects provide, will continue beyond the Fund's involvement in the portfolio companies. However, the result assessment in this proposal is limited to the Arbaro Fund lifetime.</p> <p>Arbaro Fund reaches its target size of 200M USD and invests in 8-12 portfolio companies.</p> <p>Each portfolio company develops between 6,000- 9,000 hectares of new forests.</p> <p>Each portfolio company achieves FSC certification</p> <p>In each project, on average 20% of the total land area is conserved.</p> <p>Targets are reassessed as</p>

						part of the due diligence process of the investments.
<i>New forested areas are created and managed under sustainable management practices</i>	<i>Number of hectares planted and sustainably managed</i>	Portfolio company data FSC certification reports	0	25,000 hectares	75,000 hectares	Fund size of 200M USD Each fund project will plant approximately 6,000-9,000 ha of new forest area. Each portfolio company achieves FSC certification Targets are reassessed as part of the due diligence process of the investments.
<i>New areas are placed under conservation</i>	<i>Number of hectares conserved</i>	Portfolio company data FSC certification reports on portfolio companies' assets	0	5,000 hectares	15,000 hectares	Fund size of 200M USD Each portfolio company develops between 6,000-9,000 hectares of new forests. Each portfolio company achieves FSC certification In each project, on average 20% of the total land area is conserved. Targets are reassessed as part of the due diligence process of the investments.
<i>Formal jobs are created in rural areas providing alternative livelihoods to subsistence agriculture and unsustainable practices such as charcoal production</i>	<i>Number of formal jobs</i> <i>Number of people with improved livelihoods</i>	Portfolio company data	0 0	2,500 100,000	5,000 200,000	Arbaro Fund reaches its target size of 200M USD and deploys funding in 8-12 projects. Against each formal direct job another 3 jobs are created in the value chain or

						<p>service sectors supporting the value chain.</p> <p>Each employed person contributes to improved livelihoods of 8-10 persons.</p> <p>Increased economic activity in the rural areas provide alternative income sources.</p> <p>Targets are reassessed as part of the due diligence process of the investments.</p>
<p><i>New SMEs are created in the sustainable plantation forestry value chain or in supporting service industries</i></p>	<p><i>Number of new entities</i></p>	<p>Portfolio company data</p> <p>Baseline is assessed as part of the environmental and social due diligence</p>	0	20	100	<p>Arbaro Fund reaches its target size of 200M USD and deploys funding in 8-12 projects.</p> <p>Increased economic activity in the rural areas provide alternative income sources.</p> <p>Targets are reassessed as part of the due diligence process of the investments.</p>
<p><i>Local communities' capacities are enhanced through community programmes such as outgrower schemes</i></p>	<p><i>Number of community programmes (e.g. outgrower schemes)</i></p> <p><i>Number of people reached by these programmes.</i></p>	<p>Portfolio company data</p> <p>Portfolio company data</p>	0	15	30	<p>Arbaro Fund reaches its target size of 200M USD and deploys funding in 8-12 projects.</p> <p>Increased economic activity in the rural areas provide alternative income sources.</p> <p>Portfolio companies roll out out-grower schemes and other community programmes (e.g. training on sustainable</p>
			0	1,500	5,000	

						<p>agriculture) where communities in the proximity of the portfolio company operations will be trained to apply modern silviculture to their own land, thus providing several benefits such as additional and diversified income, economic empowerment and improving rural capacities.</p> <p>Targets are reassessed as part of the due diligence process of the investments</p>
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E.6. Activities

All project activities should be listed here with a description and sub-activities. Significant deliverables should be reflected in the implementation timetable. Add rows as needed.

Activity	Description	Sub-activities	Deliverables
<p>1) Pipeline development</p> <p>2) Assessment of project opportunities following Arbaro's investment strategy and ESMS</p>	<p>Arbaro continues to develop pipeline in the target countries and invests in 8-12 projects.</p>	<p>1.1) Project identification and screening based on Arbaro's investment strategy climate eligibility criteria and ESMS</p> <p>1.2) Due diligence on the potential investee projects</p> <p>2.1) Approval of the proposed investments by the Arbaro Investment Committee</p> <p>2.2) Execution of the investments</p>	<p>Funding is deployed.</p> <p>Project level operations commence.</p>
<p>3) Investments in project level operations</p>	<p>The investee companies commence the Arbaro funded operations.</p>	<p>Arbaro ensures that investment proceeds are used for the Arbaro approved operations such as:</p> <p>4.1) Planting and forest management activities</p> <p>4.2) Nursery operations</p> <p>4.3) Harvesting, processing and wood sales as well as other portfolio company operations</p> <p>4.4) Conservation activities</p>	<p>Carbon sequestration increases through the project activities.</p> <p>Employment is created</p>

<p>4) Arbaro Fund investment monitoring</p>	<p>Arbaro monitors the portfolio companies' operations to insure adherence to Arbaro's investment strategy and ESMS.</p>	<p>Fund level:</p> <p>3.1) Monitoring of portfolio company operations through reporting from the companies as well as active dialogue, including on-site visits, with the portfolio companies</p> <p>3.2) Performance reviews to assess performance against targets</p>	<p>Annual reports to Arbaro fund investors on Arbaro fund's activities.</p>
<p>5) Reporting throughout the Arbaro Fund lifetime</p>	<p>Arbaro reviews the portfolio companies' performance against the set targets</p>	<p>Reporting:</p> <p>5.1) Quarterly reports on the performance of the portfolio companies</p> <p>5.2) Annual E&S and impact report</p>	<p>Annual reports to Arbaro Fund investors on Arbaro Fund's activities</p> <p>Annual Sustainability report</p>
<p>6) Exit from investments</p>	<p>Arbaro negotiates and executes the exit documentation.</p> <p>The exit proceeds are received.</p>	<p>6.1) Assessment of potential exit channels</p> <p>6.2) Decision on final exit</p> <p>6.3) Negotiation and execution of all exit documentation</p> <p>6.4) Receipt and subsequent distribution of the exit proceeds</p>	<p>Final fund lifecycle target achievement on carbon sequestration, job creation, livelihood support and financial returns are realized and can be reported.</p>

E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

Arbaro's reporting obligations are stipulated in the limited partnership agreement which is entered into between the Arbaro Fund and its investors. There may also be further reporting requirements under the accreditation master agreement which will be incorporated into the Arbaro Fund legal documentation, namely the side letter of the AE / GCF.

In addition, Arbaro provides comprehensive impact reporting.

The key reports that Arbaro prepares for its investors will include:

Quarterly reports (unaudited) which will be delivered no later than 60 calendar days after the end of each quarter and include:

- a summary of the key terms of the Arbaro Fund;
- a balance sheet of the Arbaro Fund, as of the end of such quarter;
- a year-to-date income statement of the Arbaro Fund;
- the amount of the manager remuneration (whether accrued and owing but not paid, or actually paid) paid by the Arbaro Fund to its manager (Arbaro Advisors) during the applicable quarter and fiscal year-to-date;
- a summary of the key developments in the preceding quarter (e.g. Drawdowns, new fund investments, investment pipeline, new investors, etc.);
- an overview of the Arbaro Fund investments, (i.e. commitments, stakes in the projects, drawdowns, IRR, valuation, compliance with the investment strategy) as well as a portfolio breakdown by country, counterparty and investment type; and
- a statement of changes in the relevant investor's capital account for the preceding quarter

Annual report (audited) which will be delivered four months after the end of each fiscal year and include a report audited by the Auditor setting forth:

- a balance sheet of Arbaro Fund as of the end of such fiscal year;
- a year-to-date income statement of Arbaro Fund for such fiscal year;
- a year-to-date statement of changes in the relevant investor's capital account for such fiscal year.

E&S and Impact reporting

The fund management team will report regularly and in a transparent manner about activities, results, and challenges of its business operations in line with its vision and mission. ESG issues shall be reported in depth to investors at least once a year, mainly through the publications of the Arbaro Sustainability Report. Furthermore, ESG key performance indicators will also be reported regularly. In years 5, 10 and 15 the report will include an assessment on whether similar initiatives have been developed in the regions of intervention, which would reflect the replicability of Arbaro activities.

Arbaro's Key Performance Indicators (KPIs) will be monitored and reported as follows:

- Financial: Arbaro follows the accounting standards of Lux GAAP. Net Asset Value calculation is performed quarterly and reported to the investors as part of the quarterly reporting
- CO₂ sequestration: Arbaro follows the overall guidance of the Intergovernmental Panel on Climate Change (IPCC) as well as methodologies from the Verified Carbon Standard (VCS). The carbon sequestered by Arbaro's projects corresponds to the net CO₂ sequestration as follows:

The net CO₂ sequestration is estimated by applying the following equation:

Net CO₂ sequestration (tCO₂) =

CO₂ sequestration in the project – Baseline – Leakage – Other project emissions

- Job creation: Employment generation is measured as full-time equivalent. More detailed breakdowns of the employment generation will be available as well.

In addition, the annual sustainability report will provide details on the impact, final methodologies used will partly depend on each case and impacts thereof.

The Arbaro Fund performance will be compared to the Arbaro fund targets in mid-term and final assessment report based on Arbaro's KPIs.

F. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

Investments made into the Arbaro Fund are subject to market fluctuations and to the risks inherent in all investments. Accordingly, no assurance can be given that the investment objective of Arbaro will be achieved. The risk factors related to Arbaro can be categorized as fund risks and as risks related to investing in emerging markets and in the forestry sector. No exhaustive list of these risks can be given, and the risks may result in substantial net asset value volatility and depreciation or not achieving the impact targets of the fund.

General fund risks include risks related to individual investors, the fund structure and how it operates, and external environment related to both, e.g.:

- Currency risk (be it between individual investor's home currency and the fund currency; or the target project currencies)
- Changes in applicable law
- Reliance on the investment committee and investment managers
- Risk of non-payment by investors
- Use of leverage
- Dependency of key personnel

The risk mitigation strategy of the Arbaro Fund is pursued at both project and Fund level:

- Cautious and highly professional project planning and implementation, in strict compliance with FSC and IFC standards, allows for risk mitigation at project level
- Balanced project portfolio in terms of investment types (Greenfield, Brownfield, downstream), regions and products, allows for risk diversification at Fund level

Specific risk factors are continuously assessed throughout the entire investment process and are strictly monitored. Appropriate mitigation strategies are analyzed and implemented proactively from the earliest stage possible.

In the below section the key risk factors related to the investee projects, the investment operations in emerging markets and forestry sector and the mitigation measures to those are discussed in more detail.

Selected Risk Factor 1 Biotic Risks

Category	Probability	Impact
Technical and operational	High	Low

Description

In plantation investments, inadequate planning and implementation of silvicultural measures, as well as the occurrence of pests and diseases, can result in poor growth and quality of wood products. Since wood products are the major source of revenues for these investments, the underperformance of plantations will have a direct negative impact on the financial performance of the investment

Mitigation Measure(s)

Plantation investments will be conducted according to best silvicultural practices. This starts in the planning phase, with proper selection of species for the given site conditions, definition of silvicultural operations for selected species and production targets, and acquisition of high-quality planting materials; and continues throughout the production cycle through the timely implementation of silvicultural operations, conducted by skilled staff under close supervision. Proper planning and implementation of operations will minimize deviations from the plan of plantation performance and will reduce the vulnerability of plantations against any pests and diseases. In addition, pest and disease management programs will be put in place, including preventive measures such as species diversification. Finally, plantation investments will be strictly monitored to ensure early detection of pests, diseases and performance deviations, making it possible to take prompt measures whenever necessary.

Selected Risk Factor 2 Abiotic Risks		
Category	Probability	Impact
Technical and operational	Medium	Medium
Description		
<p>In addition to biotic factors described above, abiotic calamities, such as floods, storms, and fire events, can have a negative impact on the performance of plantations, and thereby on the financial performance of the investments. Such events can weaken plantations, making them more vulnerable against future events, pests and diseases, and even result in the loss of part of the planted area.</p>		
Mitigation Measure(s)		
<p>Plantation investments will be managed in a way that they improve landscape resilience. Management practices such as species diversification and high-quality silvicultural management will reduce the vulnerability of plantations against extreme climate events that might occur in the region, thus reducing any negative impacts on their performance.</p> <p>Fire events need special consideration in plantation investments. Forest fires can cause the loss of significant planted areas and in some cases, they are the result of social conflicts and agricultural practices in surrounding areas, since fire a common practice used to prepare agricultural and pasture land. Proper fire management strategies will be put in place, focusing on preventive measures and contingency plans. Fire prevention measures are integrated in technical operations, by ensuring an adequate level of diversification and avoiding large areas of homogenous vegetation, as well as conducting maintenance operations in a timely manner. Other measures include the construction and maintenance of the firebreak network, providing regular training and equipment for firefighting to employees, implementation of procedures for early detection and emergency plans, monitoring of fire events and record of statistics. Sufficient resources for fire management must be planned in annual budgets. The risk of fire events will be managed as well through proactive social strategies, targeting cooperation and aligning interests with local communities, through employment generation, enhancement of livelihoods and promotion of out-grower schemes, as well as fire awareness campaigns.</p>		
Selected Risk Factor 3 Global market risks		
Category	Probability	Impact
Technical and operational	Medium	Low
Description		
<p>Unfavorable changes in forest product markets, namely a decrease in demand and product prices, can compromise the financial performance of plantation investments.</p> <p>Global trends indicate that the probability of such events is low. Population growth and economic development, together with increasing wood supply gaps, suggest that favorable market conditions will persist.</p>		
Mitigation Measure(s)		
<p>Arbaro will mainly target countries that face a significant gap in sustainably produced industrial roundwood. Forecasts on population growth and economic development in target regions anticipate increasing product demand. Along with this, deforestation pressures and insufficient reforestation efforts suggest that this situation will become more critical in the future, resulting in severe problems for domestic forest industries. Furthermore, forest investments will be developed in regions with good growing conditions, ensuring the cost competitiveness of the wood produced.</p> <p>Arbaro will seek an adequate level of diversification in its portfolio in terms of species, forest products and domestic / export markets, as well as a balance between emerging / semi-mature forest markets.</p>		
Selected Risk Factor 4 Market risks at project level		
Category	Probability	Impact
Technical and operational	High	Medium

Description		
<p>Beyond global forest product market trends, the decrease in demand or wood prices in the target market of a specific plantation investment will directly damage its financial performance. Also, operational issues with service providers, on which the timely and proper implementation of operations depends, and with clients, that ensure successful marketing of products, will have an impact on the long-term viability of the investment.</p>		
Mitigation Measure(s)		
<p>Plantation investments will be planned and implemented following a strict site-species-market approach. Market intelligence will be an essential part of the planning process, through species selection according to target products and markets, assessment of market access and deep understanding of forest industries and competitive landscape.</p> <p>Market development will be strictly monitored. Alternative market options will be assessed in all investments, ensuring a certain level of flexibility in case of unexpected market changes.</p> <p>Arbaro pursues long-term sustainable business, for which a high level of satisfaction among employees and customers is crucial. For this, investments will be managed by highly professional teams, will generate formal employment and will create high-standard working conditions.</p>		
Selected Risk Factor 5 Social and Environmental Risks		
Category	Probability	Impact
Governance	Medium	Medium
Description		
<p><u>Pests and diseases</u></p> <p>Many pest and disease problems in plantations arise from the nature of forest operations, and not directly from growing trees in plantations. Planting of one species, whether indigenous or exotic, inevitably results in some areas where trees are ill suited to the site and suffer stress. This sometimes occurs in large-scale planting programmes where insufficient attention is paid to sites or where exotics are used extensively before sufficient experience has been gained. Also poor establishment and maintenance of plantations will increase their susceptibility to pests and diseases.</p> <p><u>Fire and Storms</u></p> <p>Plantation uniformity possibly increases risk from hurricane and storm damage if only because trees may be planted in locations that increases their susceptibility. This is particularly true at young ages and when plantations are not properly managed. These risks are best mitigated by careful planning and site species matching and by applying best silviculture practises. Finally, depending on location these risks can sometimes be insured.</p> <p>Most forest fires in plantations are caused by arson; only a few by lightning or encroachment of fires from neighbouring land. While there are a few examples of frequent fires preventing plantation development, it is more often due to poor community relationships than any inherent shortcoming with forest plantations. Fire risk is considered as one of the most important risks due to its potentially devastating impact.</p> <p><u>Poor stakeholder relations</u></p> <p>Poor stakeholder relations often develop from misinterpreting who the stakeholder groups are, poor communication and practises that are not transparent. At its worst, poor relations may lead to significantly increased fire risk in plantations due to arson or the project losing its social license to operate.</p>		
Mitigation Measure(s)		
<p><u>General</u></p> <p>Arbaro will select and manage investments according to its ESG policy and guidelines. IFC performance standards will be strictly applied in all projects to assess and effectively address potential social and environmental risks. All investments will be FSC certified. Arbaro will apply a rigorous internal red flag system and will involve communities to</p>		

support development and reduce risks. Environmental and social risk mitigation strategies will be applied in all projects and they include:

- No establishment of plantations in natural forests
- Strict site-species matching ensures planting only in suited areas (suited biophysics, particularly annual precipitation > 1,000 – 1,200 mm; no competition with other land uses)
- Professional planning and site selection, including demarcation and management of conservation areas
- Professional application of best practices in forest operations, minimizing environmental impacts
- Risk management strategy related to genetic variability and fire prevention
- Transparent communication and participative relations with local communities and stakeholders
- Monitoring and evaluation of plantation performance, social and environmental impacts
- FSC certification, involving external audits and continuous improvement of applied practices

Pests and diseases

These risks are mitigated by careful planning of silvicultural management, site species matching and by applying best silviculture practises (e.g. diversifications of species, high-quality planting materials, timely execution of operations by well-trained staff).

Fire and storm damage

In all Arbaro's projects fire prevention measures, such as firebreaks in the plantations, monitoring and early detection, training as well as pre-agreed action plans in case of such occurrence are applied. Arbaro projects will also maintain good relations with the surrounding communities, with transparent practises and open communication. In addition to providing significant employment opportunities in their area of operation, Arbaro's projects will also actively educate the local communities of the benefits of forestry and promote out-grower and small-holder schemes where local communities can participate in the sector

Poor stakeholder relations

Arbaro projects will apply participatory approach to make sure that the local communities are well informed and involved in the project development. In identifying relevant stakeholders and assessing various approaches to be taken, Arbaro will follow the guidelines of the IFC Performance Standards, IFC's Stakeholder Consultations -Good Practises Handbook as well as the recommendations of the FSC.

Selected Risk Factor 6 Political and FX risks

Category	Probability	Impact
Other	Medium	Medium

Description

Expropriation

Expropriation or other such political risk event is considered extremely unlikely.

Corruption

Arbaro will implement an absolute zero tolerance to corruption. This may mean in the short term that e.g. licencing or approvals are delayed or other such administrative stumbling blocks will appear, however previous experience has evidenced that over medium term, zero tolerance policy will gradually remove these practises from the vicinity of zero-tolerance projects / companies.

Transfer restrictions / currency inconvertibility

Due to long term nature of forestry investments these risks could materialise

Legal risks

Inadequacy of local regulatory environmental.

Mitigation Measure(s)

Political risks can to an extent be mitigated by making sure that the projects are implemented in a transparent manner and making sure that the local stakeholders (from grassroots level to local and national government level) are appropriately informed and heard of throughout the implementation process. In addition, the mitigation measures include local participation schemes, integration of neighbouring communities as well as good cooperation with the local administration.

Risk related to transfer restrictions can be mitigated by timber sales in hard currency, possibility to speed up/reduce harvesting during challenging times as well as structuring investment via politically stable jurisdictions.

Arbaro's primary target countries are known to the management team from previous experience, and hence it is also known that the basic regulatory environment exists. Regardless of level of regulation, Arbaro's projects will always be implemented following the highest industry standards, including those related to environmental and social aspects of the projects. However, it is possible that either with time there will be adverse developments in regulation or that other players, e.g. competitors take advantage of such lacking regulation and through this enjoy competitive advantages. This could, over time, put Arbaro's project in adverse situation. To mitigate these Arbaro will work closely and transparently with local stakeholders including the local administration to communicate the benefits of the high standards followed. Arbaro's projects will also participate in e.g. local lobby groups such as industry associations to influence regulatory development as well as educate the decision makers on the industry.

G. GCF POLICIES AND STANDARDS

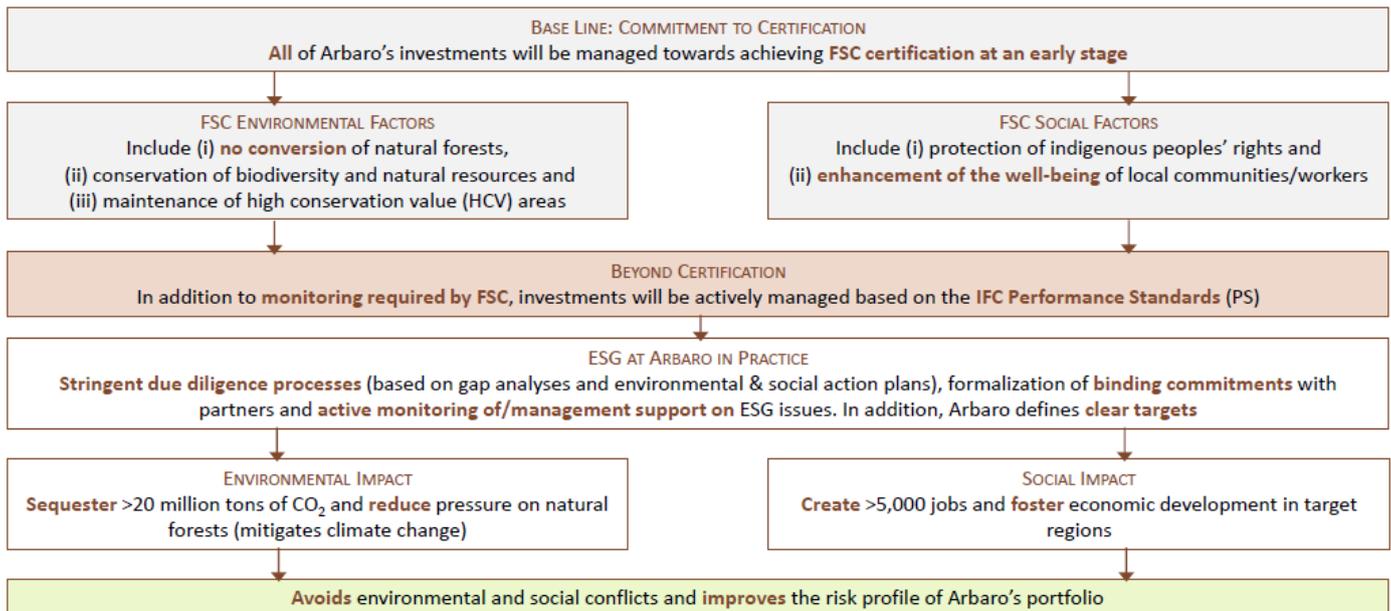
G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

Arbaro's approach to E&S matters is governed by its ESMS. This is based on the International Finance Corporation (IFC) Policy and Performance Standards on Social and Environmental Sustainability (IFC PS), the related Environmental, Health and Safety Guidelines (EHS Guidelines) and the European Investment Bank's Environmental and Social Handbook. In addition, the Arbaro's E&S guidelines are compatible with the United Nations Principles for Responsible Investment (PRI).

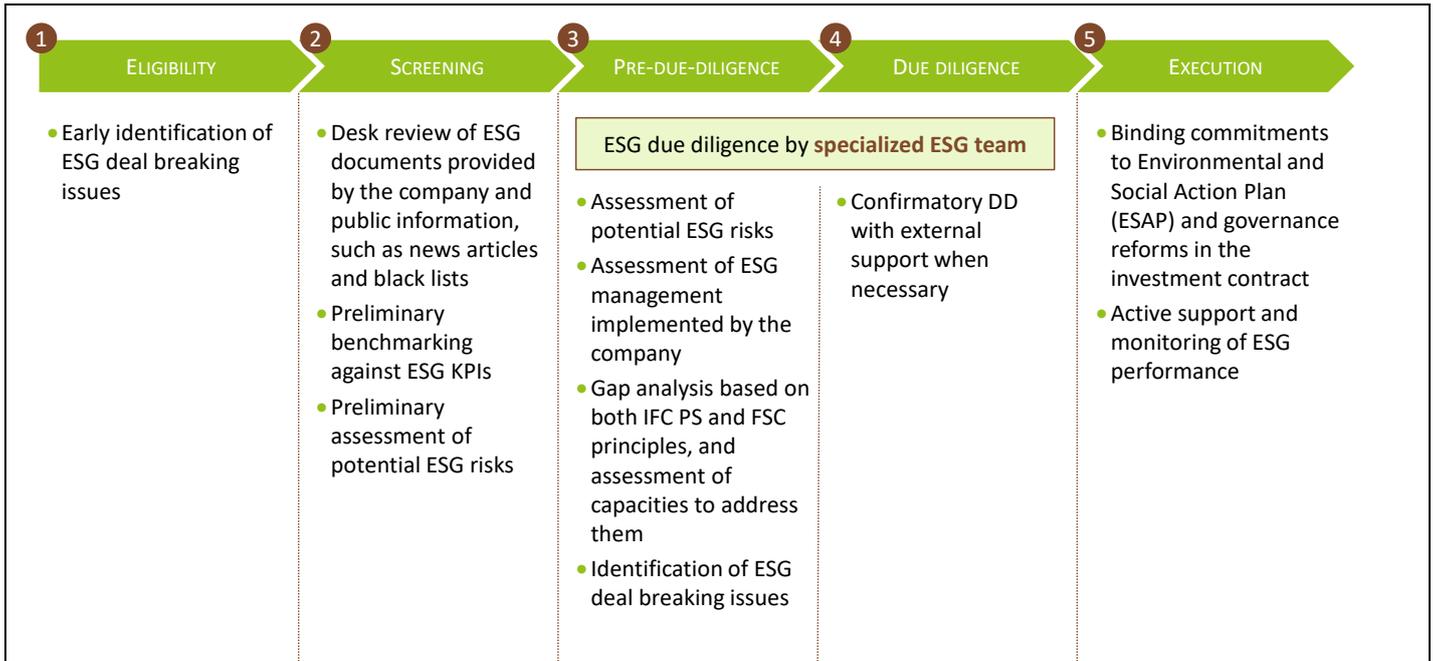
General principles of these E&S guidelines are:

- Finance only business operations that can comply with all applicable local and national laws, as well as international conventions and agreements ratified by the host country
- Operate according to the mitigation hierarchy, seeking to avoid, and where this is not possible, minimize adverse impacts and enhance positive effects on the environment, workers and stakeholders
- Actively seek for senior level endorsement of, and adherence to E&S guidelines of financed businesses, establishing formal commitments through appropriate E&S policies and practices, targets, budgets and timetables for implementation
- Integrate its E&S principles early in the planning process of each investment project in order to establish management systems subject to continuous improvement which effectively address E&S risks and realize E&S opportunities
- Set in place appropriate indicators and realize the follow-up of E&S measures throughout the investment process
- Promote and work towards the implementation of relevant international best practice standards, particularly FSC certification

Overview of Arbaro's ESG framework:



The E&S principles are a fundamental part of the Arbaro's business operations and compliance will be achieved through the means of an appropriate E&S management system. An effective E&S management system requires E&S principles to be respected from the initial phase of the investment process throughout the entire project cycle as described in the below graph:



ESIAs, as well as assessments related to resettlement or indigenous peoples will be conducted when and if applicable on a project level. As the projects are only chose during the implementation period (the investment period of the fund) such documents and assessments are not yet available. However, attached are the relevant policies and fund level documents [see Annex 6].

The programme will develop 8-12 projects that may fall under different risk categories:

- Category A: Potential significant adverse environmental or social risks and/or impacts that are diverse, irreversible, or unprecedented
- Category B: Potential limited adverse environmental or social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures
- Category C: Minimal or no adverse environmental or social risks and/or impacts

Given that projects are not defined at this stage, the overall programme is rated as Category A which is the highest possible risk category of projects.

G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

Gender equality is especially important factor to consider in forestry, as it has traditionally been male-dominated industry. Arbaro is committed to promoting gender equality and the basis for Arbaro's Gender Policy is formed by the IFC's Sustainability Framework and the Performance Standards as well as the FSC standards, both of which have specific sections on gender equality. The Fund seeks to promote gender equality throughout the whole investment process in four thematic areas:

- True participation: Arbaro recognizes that minimum number of women represented is not always enough, but their actual participation and ability to influence is more relevant.
- Equal benefits: Arbaro will use its best endeavors to ensure that the social and economic benefits that its stakeholder groups derive from its operations will be distributed in an equal basis considering the needs of the various groups and noting that such needs may vary between the groups.
- Capacity development: Arbaro is committed to contribute to capacity development as part of its activities and will seek to understand the specific needs of the target groups of these activities to understand their usefulness, and where applicable organize trainings to empower women and strengthen their capacities.
- Gender-disaggregated data: The Fund will seek to develop and apply transparent assessment and reporting methods that will include gender-disaggregated data. The objective of this data is to be able to provide meaningful information and regular feedback on the impact and effectiveness of the fund's gender-responsive approach.

Project level gender assessment can only be provided at a later stage and on a project to project basis as the target projects will only be chosen during the implementation period (the fund investment period).
 When assessing project opportunities Arbaro will seek to understand the prevailing socio-economic and cultural context as well as gender norms and perceptions related to the project area and all of its stakeholders. Where applicable, a gender-responsive social analysis as part of the overall social and environmental impact assessment will be undertaken to understand the underlying causes and drivers of gender inequalities.
 Where laws and regulations disadvantage one gender over the other (often women, but men can also be affected), the Arbaro will seek to ensure that disadvantaged populations are protected and not further disadvantaged.
 Where applicable, Arbaro will seek to address systemic and structural practices that create barriers to the realization of women's rights and gender equality.
 Arbaro's investee companies will be encouraged to provide and operate in an environment that aspires to creating equal opportunities for both women and men, which in some instances may result in going "beyond the law". Investee companies will be required to have a gender policy, and a timetable and procedures for monitoring its implementation. Gender equality is included as a company performance indicator.
 For details please refer to Annex 8.

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

The Fund Manager, FiM Asset Management S.à r.l. is registered with the Luxembourg financial sector regulator CSSF as an Alternative Investment Fund Manager (AIFM).

EY Luxembourg has been chosen as the auditor of the Fund.

Alter Domus is the selected as administrative and depositary agent for the Fund. Alter Domus is a leading provider of Fund and Corporate services. Established in 2003 its 1,100 employees serve most of the largest debt, real estate and private equity fund in the world. Alter Domus is certified according to SSAE AT Section 801 / ISAE 3402 SOC 1 Type II.

The annual accounts of the Fund will be audited as of the end of each fiscal year by the Fund's independent auditor. All annual accounts provided to the Limited Partners will be prepared in accordance with Lux GAAP.

The valuation approach of the Fund follows the general principles of the International Private Equity and Venture Capital Valuation Guidelines dated December 2015 (as amended from time to time) published by Invest Europe

Other procurement

The major part of the investment process will be performed by the Arbaro Advisors team itself. Contrary to many other timber funds, the Arbaro team will also perform the technical due diligence internally. Arbaro will be supported by transaction support services provided by Finance in Motion and UNIQUE at no additional costs to the Fund, which is why the use of third-party external consultants and professional services firms will be limited.

Any external services, such as the legal, tax, audit or technical service, will be procured in a professional and commercial manner based on well-defined terms of references, competitive rates, monitoring and control of service delivery, and evaluation for future assignments. Where possible, the Fund aims to efficiently work together with a recurring panel of external service providers.

G.4. Disclosure of funding proposal

Note: The Information Disclosure Policy (IDP) provides that the GCF will apply a presumption in favour of disclosure for all information and documents relating to the GCF and its funding activities. Under the IDP, project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Information provided in confidence is one of the exceptions, but this exception should not be applied broadly to an entire document if the document contains specific, segregable portions that can be disclosed without prejudice or harm.

Indicate below whether or not the funding proposal includes confidential information.

No confidential information: The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.

With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:

- full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
- redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.

H. ANNEXES

H.1. Mandatory annexes

- Annex 1 NDA no-objection letter(s) [\(template provided\)](#)
- Annex 2 Feasibility study - and a market study, if applicable
- Annex 3 Economic and/or financial analyses in spreadsheet format
- Annex 4 Detailed budget plan [\(template provided\)](#)
- Annex 5 Implementation timetable including key project/programme milestones [\(template provided\)](#)
- Annex 6 E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3):
[\(ESS disclosure form provided\)](#)
 - Environmental and Social Impact Assessment (ESIA) or
 - Environmental and Social Management Plan (ESMP) or
 - Environmental and Social Management System (ESMS)
 - Others (please specify – e.g. Resettlement Action Plan, Resettlement Policy Framework, Indigenous People’s Plan, Land Acquisition Plan, etc.)
- Annex 7 Summary of consultations and stakeholder engagement plan
- Annex 8 Gender assessment and project/programme-level action plan [\(template provided\)](#)
- Annex 9 Legal due diligence (regulation, taxation and insurance)
- Annex 10 Procurement plan [\(template provided\)](#)
- Annex 11 Monitoring and evaluation plan [\(template provided\)](#)
- Annex 12 AE fee request [\(template provided\)](#)
- Annex 13 Co-financing commitment letter, if applicable [\(template provided\)](#)
- Annex 14 Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

H.2. Other annexes as applicable

- Annex 15 Evidence of internal approval [\(template provided\)](#)
- Annex 16 Map(s) indicating the location of proposed interventions
- Annex 17 Multi-country project/programme information [\(template provided\)](#)
- Annex 18 Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
- Annex 19 Procedures for controlling procurement by third parties or executing entities undertaking projects financed by the entity
- Annex 20 First level AML/CFT (KYC) assessment
- Annex 21 Operations manual (Operations and maintenance)
- Annex 22 Carbon Methodology
- Annex 23 Sustainable Forestry
- Annex 24 Country Context



- Annex 25 Climate Eligibility
- Annex 26 LPA

MINISTERIO DEL **AMBIENTE****Oficio Nro. MAE-MAE-2019-1383-O****Quito, D.M., 10 de diciembre de 2019**

Asunto: Funding proposal for the GCF by MUFG BANK (formerly, Bank of Tokyo-Mitsubishi UFJ, Ltd.) regarding the programme Arbaro Fund- Sustainable Forestry Fund.

Señor
Yannick Glemarec
Executive Director
GREEN CLIMATE FUND
En su Despacho

Dear Mr. Glemarec,

We refer to the project programme Arbaro Fund – Sustainable Forestry Fund in Ecuador as included in the funding proposal submitted by MUFG Bank (formerly, Bank of Tokyo-Mitsubishi UFJ, Ltd.) to us on October 8, 2019.

The undersigned is the duly authorized representative of the Ministry of the Environment of Ecuador, the National Designated Authority of Ecuador.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

1. The government of Ecuador has no-objection to the programme as included in the funding proposal;
2. The programme as included in the funding proposal is in conformity with Ecuador's national priorities, strategies and plans;
3. In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Atentamente,

Documento firmado electrónicamente

Abg. Raúl Clemente Ledesma Huerta
MINISTRO DEL AMBIENTE

Copia:
Señorita Bióloga
Karina Patricia Salinas Heredia
Subsecretaria de Cambio Climático, Subrogante

MINISTERIO DEL **AMBIENTE**



Oficio Nro. MAE-MAE-2019-1383-O

Quito, D.M., 10 de diciembre de 2019

Señorita Ingeniera
Gabriela Jeanneth Vargas Luna
Directora Nacional de Adaptación al Cambio Climático, Subrogante

Señor Magíster
Jose Francisco Diaz Izurieta
Director Nacional de Mitigación al Cambio Climático

Señorita Economista
Janneth Cristina Garcia Sotomayor
Especialista de Mitigación del Cambio Climático 3

Señor Ingeniero
Ricardo Mauricio Proaño Cardenas
Especialista de Políticas de Cambio Climático

Señor Abogado
Steven Augusto Petersen Rojas
Subsecretario de Cambio Climático

Señor Magíster
Carlos Arturo Espinosa Gallegos Anda
Director Nacional de Adaptación al Cambio Climático

rp/gv/ks



ቁጥር 3/12.1/1184/12
Ref. No.
ቀን 7/2/2020
Date

To: The Green Climate Fund ("GCF")

Songdo International Business District
175, Art Center-Daero
Yeonsu-gu, Incheon 22004
Republic of Korea

**Subject : Endorsing Funding proposal entitled " Arbaro Fund – Sustainable Forestry Fund "
designed by MUFG Bank**

Dear Madam/Sir,

We refer to **Arbaro Fund – Sustainable Forestry Fund** as included in the Funding Proposal submitted to us by **MUFG Bank** acting as accredited entity for the Green Climate Fund .

In my capacity as GCF-NDA (National Designated Authority) for the Federal Democratic Republic Ethiopia, pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the project as included in the Funding Proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Ethiopia has no-objection to the project as included in the Funding Proposal ;
- (b) The project as included in the Funding Proposal is in conformity with Ethiopia’s national priorities, strategies and plans;
- (c) In accordance with the GCF’s environmental and social safeguards, the project as included in the Funding Proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the project as included in the funding proposal has been duly followed. We also confirm that our no-objection applies to all activities to be implemented within the scope of the project.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,



Wordy Hashim Abdullahi
Wordy Hashim Abdullahi
Director General ,Resource
Mobilization and Projects
Administration



In case of reply, the
number and date of this

MINISTRY OF FINANCE

Our Ref: MOF/ESRD/NREC/ARC VOL.IV
Your Ref:
Tel No:

15TH
OCTOBER, 2019

Dear Mr. Yannick Glemarec

RE: ARBARO FUND – SUSTAINABLE FORESTRY FUND

We refer to the “Arbaro Fund - Sustainable Forestry Fund” programme as included in the funding proposal submitted by MUFG Bank to the NDA, Ghana, on 9th October, 2019.

2. The undersigned is the duly authorized representative of the Ministry of Finance, the National Designated Authority/Focal Point of the Republic of Ghana.

3. Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the Programme on Arbaro Fund- Sustainable Forestry Fund as included in the funding proposal.

4. By communicating our no-objection, it is implied that:

(a) The government of the Republic of Ghana has no-objection to the Arbaro Fund- Sustainable Forestry Fund as included in the funding proposal;

(b) The Arbaro Fund- Sustainable Forestry Fund as included in the funding proposal is in conformity with the Republic of Ghana's national priorities, strategies and plans;

(c) In accordance with the GCF's environmental and social safeguards, the Arbaro Fund- Sustainable Forestry Fund project as included in the funding proposal is in conformity with relevant national laws and regulations.

5. We also confirm that our national process for ascertaining no-objection to the Arbaro Fund- Sustainable Forestry Fund as included in the funding proposal has been duly followed.

6. We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

7. We acknowledge that this letter will be made publicly available on the GCF website.

DR. ALHASSAN IDDRISU
DIRECTOR, ESRD/NDA, MOF
FOR: MINISTER

The Executive Director
Green Climate Fund (“GCF”)
G-Tower, 24-4 Songdo-dong, Yeonsu-gu Incheon City,
Republic of Korea.

Cc: The Hon. Minister, MoF
The Hon. Deputy Minister, MoF
The Chief Director, MoF
The Chief Executive, FC





Misión: Coordinar e impulsar el diseño, implementación, seguimiento y evaluación del desarrollo sostenible con enfoque inclusivo.

Asuncion, October 02 , 2019

STP/S.E./N° 1892 /2019

Mr. Yannick Glemarec
Executive Director
Green Climate Fund (GCF)

Subject: Funding proposal for the GCF by MUFG Bank regarding Arbaro Fund Programme

Dear Sir,

We refer to the Arbaro Fund programme in Paraguay as included in the funding proposal submitted by MUFG Bank to us on July 24 of 2019.

The undersigned is the duly authorized representative of Secretariat of Planning for Economic and Social Development, the National Designated Authority of Paraguay.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- a. The government of Paraguay has no-objection to the programme as included in the funding proposal;
- b. The programme as included in the funding proposal is in conformity with Paraguay's national priorities, strategies and plans;
- c. In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Yours sincerely,



Patricia Marchewka Brooking
General Secretary



Carlos Alberto Pereira Olmedo
Minister - Executive Secretary
Secretariat of Planning for Economic and
Social Development
GFC National Designated Authority



PERÚ

Ministerio de
Economía y FinanzasDespacho Viceministerial de
EconomíaDirección General de Asuntos
de Economía Internacional,
Competencia y Productividad

**"DECENIO DE LA IGUALDAD DE OPORTUNIDADES PARA MUJERES Y HOMBRES"
"AÑO DE LA UNIVERSALIZACIÓN DE LA SALUD"**

To: The Green Climate Fund ("GCF")

Lima, February 5th 2020

Re: Funding proposal for the GCF by the MUFG Bank regarding the Sustainable Forestry Fund programme

Dear Madam, Sir,

We refer to the Sustainable Forestry Fund programme in Peru as included in the funding proposal submitted by the Arbaro Fund to us on December 16th, 2019.

The undersigned is the duly authorized representative of the Ministry of Economy and Finance, the National Designated Authority/focal point of Peru.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the Sustainable Forestry Fund programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Peru has no-objection to the project the Sustainable Forestry Fund programme as included in the funding proposal;
- (b) The Sustainable Forestry Fund programme as included in the funding proposal is in conformity with Peru's national priorities, strategies and plans;
- (c) In accordance with the GCF's environmental and social safeguards, the Sustainable Forestry Fund programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the Sustainable Forestry Fund programme as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

CARLOS GALLARDO TORRES

General Director

General Directorate of International Economic
Affairs, Competition and Productivity



SIERRA LEONE GOVERNMENT
 Environment Protection Agency-Sierra Leone
 Office of the President
 21 Old Railway Line, Freetown

9th September 2019

To: The Green Climate Fund ("GCF")

Re: Funding proposal for the GCF by MUFG Bank regarding Arbaro Fund Programme

Dear Sir/madam

We refer to the Arbaro Fund Programme as included in the funding proposal submitted by MUFG Bank acting as accredited entity for the Green Climate Fund to us on the 2nd of July 2019. The undersigned is the duly authorized representative of the Environment Protection Agency, the National Designated Authority/focal point of Sierra Leone.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of Sierra Leone has no-objection to the programme as included in the funding proposal;
- (b) The programme as included in the funding proposal is in conformity with Sierra Leone's national priorities, strategies and plans;
- (c) In accordance with the GCF's environmental and social safeguards, the programme as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed as well as that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,


 Prof. Foday M. Jaward, PhD
 Executive Chairman, EPA-SL

Telephone : 256 41 4707 000
 : 256 41 4232 095
 Fax : 256 41 4230 163
 : 256 41 4343 023
 : 256 41 4341 286
 Email : finance@finance.go.ug
 Website : www.finance.go.ug



THE REPUBLIC OF UGANDA

Ministry of Finance, Planning &
 Economic Development
 Plot 2-12, Apollo Kaggwa Road
 P.O. Box 8147
 Kampala
 Uganda

In any correspondence on
 this subject please quote No. ALD 79/251/03

27th January, 2020

The Executive Director
 Green Climate Fund
 Songdo Business District
 Republic of Korea

LETTER OF NO OBJECTION FOR THE ARBARO FUND PROGRAMME BY THE MUFGBANK LTD.

I refer to the Arbaro Fund Programme Proposal, which has been prepared and submitted to you by the MUFGBank Ltd for funding by the Green Climate Fund. The National Designated Authority in Uganda has reviewed the above proposal and established that it will enable our private sector entities to access the vital funding for investment in the country's Green Growth priorities.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the above programme as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The Government of the Republic of Uganda has no-objection to the funding proposal;
- (b) The programme is in conformity with Uganda's national priorities, strategies and plans;
- (c) In accordance with the GCF's environmental and social safeguards, the program as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the programme as included in the funding proposal has been duly followed and that it applies to all projects or activities to be implemented within the scope of the programme.

The undersigned is the duly authorized representative of the Ministry of Finance, Planning and Economic Development, the National Designated Authority focal point of Uganda.

We acknowledge that this letter will be made publicly available on the GCF website.


 Keith Muhakanizi

**PERMANENT SECRETARY/ SECRETARY TO THE TREASURY/NATIONAL DESIGNATED AUTHORITY
 FOCAL POINT FOR THE GREEN CLIMATE FUND**

Mission

"To formulate sound economic policies, maximize revenue mobilization, ensure efficient allocation and accountability for public resources so as to achieve the most rapid and sustainable economic growth and development"

Environmental and social safeguards report form pursuant to para. 17 of the IDP

Basic project or programme information	
Project or programme title	Arbaro Fund
Existence of subproject(s) to be identified after GCF Board approval	Yes
Sector (public or private)	Private
Accredited entity	MUFG Bank, Ltd.
Environmental and social safeguards (ESS) category	Category I-1
Location – specific location(s) of project or target country or location(s) of programme	Sub-Saharan Africa and Latin America. Specific countries have not been determined until a specific fund investment project appears.
Environmental and Social Impact Assessment (ESIA) (if applicable)	
Date of disclosure on accredited entity's website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Environmental and Social Management Plan (ESMP) (if applicable)	
Date of disclosure on accredited entity's website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Environmental and Social Management (ESMS) (if applicable)	
Date of disclosure on accredited entity's website	Monday, September 9, 2019 (Except Amharic) Wednesday, November 6, 2019 (Amharic)
Language(s) of disclosure	English, Amharic, Portuguese, and Spanish
Explanation on language	The program will target countries with English, Amharic, Portuguese, or Spanish as official languages.
Link to disclosure	English: Environmental and Social Management System https://www.bk.mufg.jp/global/productsandservices/corpaninvest/gcf/af/pdf/V2_ESMS.pdf

	<p>Amharic: የአካባቢ እና ማህበራዊ አስተዳደር ሥርዓት (Environmental and Social Management System Amharic translation) https://www.bk.mufg.jp/global/productsandservices/corpaninvest/gcf/af/pdf/ESMS_Amharic.pdf</p> <p>Portuguese: SISTEMA DE GESTÃO AMBIENTAL E SOCIAL (Environmental and Social Management System Portuguese translation) https://www.bk.mufg.jp/global/productsandservices/corpaninvest/gcf/af/pdf/V2_ESMS_Portuguese.pdf</p> <p>Spanish: SISTEMA DE GESTION AMBIENTAL Y SOCIAL (Environmental and Social Management System Spanish translation) https://www.bk.mufg.jp/global/productsandservices/corpaninvest/gcf/af/pdf/V2_ESMS_Spanish.pdf</p>
Other link(s)	<p>Arbaro Fund webpage https://www.bk.mufg.jp/global/productsandservices/corpaninvest/gcf/af/index.html</p>
Remarks	An ESMS consistent with the requirements for a Category I-1 programme is contained in the 'Environmental and Social Management System (ESMS)'.
Any other relevant ESS reports, e.g. Resettlement Action Plan (RAP), Resettlement Policy Framework (RPF), Indigenous Peoples Plan (IPP), IPP Framework (if applicable)	
Description of the report	N/A
Description of report/disclosure on accredited entity's website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
Disclosure in locations convenient to affected peoples (stakeholders)	
Date	Monday, September 9, 2019 (For Mozambique) Wednesday, November 6, 2019 (For Ethiopia, Ghana, and Paraguay)
Place	<p>Arbaro Fund c/o Professor Almeida A. Siteo Center for Agriculture and Natural Resource Studies (CEAGRE) Faculty of Agronomy and Forestry Eduardo Mondlane University Main Campus 3453 Julius Nyerere Ave. Maputo Mozambique</p> <p>Arbaro Fund c/o Kibebework Getachew, Directorate Director Ethiopian Forest and Climate Change Commission (EFCCC) Forest Ecosystem Service Valuation Carbon Measuring (MRV)</p>

	<p>Around 4 killo, about 200 meters away from Tourist Hotel and neighbor to Danu bone treatment center Addis Ababa Ethiopia</p> <p>Arbaro Fund c/o Miro Forestry (Ghana) Limited The Grey House Pan Africa, Hwidiem Post Office Box 3 Asante Akyem, Agogo The Republic of Ghana</p> <p>Arbaro Fund c/o UNIQUE WOOD Paraguay S.A. Teniente Rivarola 840 Fernando de la Mora Asunción Paraguay</p>
Date of Board meeting in which the FP is intended to be considered	
Date of accredited entity's Board meeting	Tuesday, March 10, 2020
Date of GCF's Board meeting	Tuesday, March 10, 2020

Note: This form was prepared by the accredited entity stated above.

Independent Technical Advisory Panel's assessment of FP128

Proposal name: Arbaro Fund – Sustainable Forestry Fund

Accredited entity: MUFG Bank, Ltd.

Project/programme size: Medium

I. Assessment of the independent Technical Advisory Panel

1.1 General background

1. According to a recent World Wildlife Foundation (WWF) report,¹ demand for wood-based products is expected to increase globally in the coming decades. Economic growth, growing population, increasing urbanization and greater prosperity are expected to further drive up the consumption of wood-based products. Since forests provide the materials for these products, the increasing demand will exert greater pressure on already stressed forest resources, thus calling for greater supply of timber. To put this growing demand in perspective, the WWF Living Forests Model projects that wood harvesting will more than double by 2030, and almost quadruple by 2050: from 3.4 million cubic metres (m³) in 2010, to 7.6 million m³ in 2030 and 13.1 million m³ by mid-century. Given these forecasts of wood harvesting and the fact that many forests are already stressed, there are clearly limits to the rate at which we can harvest from the natural forest resources of many countries.

2. In order to mitigate the stress on natural forests as a result of the expected future increase in wood harvesting, options to optimize sourcing will include, among other interventions: more efficient saw mills and pulp mills; greater recycling; less wasteful consumption in rich countries; and energy-efficient improved wood stoves in developing ones. These will be inadequate if they are not implemented as complementary to the development of sustainable planted forest plantations. Unfortunately, planted forests to meet the increased demand for wood-based products are not common in many countries. To put this in very clear perspective, planted forests make up only around 7 per cent of forest cover worldwide, but supply a third of the total global production of industrial roundwood. Therefore, sustainable forest plantations can provide an effective tool to efficiently produce the wood in smaller land areas.

3. Arbaro Fund is proposing to implement the development of sustainable forest plantations to produce wood logs for production purposes in selected countries in Latin America (LA) and sub-Saharan Africa (SSA). The selected countries in both of these regions are not only already seeing unsustainable stress in their natural forests, which is expected to be exacerbated by the increasing demand for wood-based products, but they also have very insignificant areas of sustainable planted forest. Also, in these countries, investments in sustainable forest plantations, particularly by private investors, have so far been very weak. Development financial institutions (DFIs) and international financial institutions (IFIs), which are usually frontrunners for new asset classes in less developed markets and can, as anchor investors, demonstrate confidence in new asset classes, have limited involvement in forest plantation investments in these nations. Therefore, in targeting these countries the Arbaro Fund

¹ WWF 2012

will be delivering substantive sustainable forestry that will result in real and measurable greenhouse gas (GHG) emission reduction benefits through:

- (a) Production of wood from planted forests in a sustainable manner;
- (b) Significant conservation of forests;
- (c) Reduction and/or complete elimination of illegal logging in the selected countries;
- (d) Providing an effective climate change mitigation outcome by investing in sustainable forest projects in the emerging forestry markets of LA countries and SSA countries;
- (e) Identifying and executing forestry projects focused on sustainable timber production such as greenfield projects, preferably on degraded lands, and the expansion and upscaling (with technical improvements that will enhance sustainable forestry) of existing brownfield forest plantations; and
- (f) Investing USD 10–25 million per project with a final portfolio of 8 to 12 underlying project investments per portfolio company.

4. Key objectives of the project proposed by the Arbaro Fund can be summarized as follows:

- (a) In each of the selected countries and regions, close the timber supply gaps. Roundwood supply gaps exist or are forecast to exist in the near future in the countries targeted;
- (b) Include effective climate change mitigation strategies in the development of the forest plantations by planting trees on non-forested land, in order to capture and store additional carbon from the atmosphere. Such effective climate change mitigation strategies will also be implemented at existing brownfield forest plantations that have either not been planned, or do not operate, with sustainable forest conservation;
- (c) In each of the forest plantations developed under the project proposed by Arbaro Fund, forest conservation practices will be implemented. A key conservation practice that will be adopted in all Arbaro Fund forest plantations will be Forest Stewardship Council (FSC) certification;
- (d) According to an FSC key conservation strategy for certified plantations, on average, for each 1,000 ha of forest planted, 200 ha will be actively conserved; and
- (e) Apart from ensuring the delivery of sustainable climate change mitigation benefits, key investment strategies of Arbaro Fund will also be to promote positive social, economic and environmental impacts through delivery of the plantations.

5. The project proposed by Arbaro Fund is also expected to deliver, in addition to the sustainable climate mitigation benefits, the following co-benefits:

- (a) Climate change adaptation co-benefits, which are expected to include:
 - (i) Improved resilience, which is expected to be delivered in each target country by adaptive management practices (use of correct species in the afforestation process, practice of good rotation choices, etc.). The developed plantation under the proposed project can also contribute to reduced vulnerability of nearby natural forests and other natural ecosystems through soil conservation, improved watersheds and the provision of ecological corridors; and
 - (ii) The proposed intervention is also expected to provide alternative livelihoods which will replace the more common climate-dependent smallholder farming. The alternative livelihoods will be formal employment opportunities either directly in the project or indirectly by provision of needed services to the project. The presence of alternative livelihoods is expected to improve resilience

of the rural communities and decrease dependence on climate-sensitive subsistence practices. It has been estimated that about 200,000 people will benefit from this project intervention in the two regions where it will be implemented;

- (b) The proposed projects will empower local communities and enhance their economic capacities through:
 - (i) Engagement of the communities close to the forest plantation in out-grower (contract farming) schemes for the plantation. These communities will be trained to apply modern silviculture practices to their own land, where they will implement the out-grower schemes, thus diversifying their income base, providing them with economic empowerment and improving their rural capacities; and
 - (ii) The out-grower schemes will be supported by technical assistance from the Arbaro Fund's investee projects and by grant funding; and
 - (c) The Arbaro Fund project will provide formal employment opportunities for people in the target countries and regions. It has been estimated that:
 - (i) Direct employment will be provided to about 5,000 people through the investment;
 - (ii) It is estimated that as a result of the investment, indirect employment opportunities will be available to 15,000 people; and
 - (iii) About 200,000 people will benefit from livelihoods in the two regions.
6. The climate rationale for the proposed project is focused on the delivery of climate mitigation through the development of new permanent carbon sinks. The ways in which climate mitigation benefits will be delivered by the project can be summarized as follows:
- (a) Trees will be planted on lands that are currently not forested; at existing plantations improved and more sustainable forestry management will be implemented. The planted trees will capture and store additional carbon dioxide (CO₂) from the atmosphere;
 - (b) In sustainable forest plantations, the forest is created over time;
 - (c) Once the first planted trees reach their harvesting age, they are harvested but new ones are planted to replace them. This cycle is continued perpetually;
 - (d) With such forest management, a permanent carbon stock is created, while also providing raw materials to the market; and
 - (e) For the proposed project, Arbaro Fund will target a total of 75,000 ha of new forest areas with the following climate change mitigation benefits and management principles:
 - (i) About a total of 20 million tonnes of carbon dioxide equivalent (MtCO₂eq) will be sequestered by the projects planned in all the countries targeted in the two regions; and
 - (ii) To ensure that plantations are implemented sustainably, FSC forest management principles will guide plantation development. Key requirements of the FSC include:
 - (1) New forests will be planted in non-forest areas; or
 - (2) Planting will be in areas that have been deforested for a long time, for example degraded land; and

- (3) Arbaro Fund will not replace or convert existing natural forests or other vulnerable ecosystems into forest plantation.

7. The programme plans to implement this intervention in the following countries of the two geographical regions:

(a) Region 1: SSA countries:

- (i) Ethiopia;
- (ii) Ghana;
- (iii) Sierra Leone; and
- (iv) Uganda.

(b) Region 2: LA countries:

- (i) Ecuador;
- (ii) Paraguay; and
- (iii) Peru.

8. The financial details and structure of the project described in the funding proposal and analysed by the independent Technical Advisory Panel (TAP) cover the intervention in seven countries in two regions. No-objection letters (NOLs) from four of the countries (LA countries: Ecuador, Paraguay; and SSA countries: Ghana and Sierra Leone) have been obtained and included in the documents reviewed by the independent TAP. During TAP interactions with the Secretariat and project team members from MUFG Bank, Ltd. (MUFG)/Arbaro Fund, the independent TAP was informed that the remaining three NOLs, from Ethiopia, Uganda and Peru, will be delivered before finalized documents reach the Board.

9. The financing structure for this programme can be summarized as follows:

(a) Total financing: USD 200 million;

(b) Of which:

- (i) GCF equity contribution: USD 25 million;
- (ii) DFI investor(s) – equity: USD 25.00 million;
- (iii) Private investors – equity: USD 100 million;
- (iv) Other DFIs – equity: USD 46 million; and
- (v) Arbaro Fund Team – equity: USD 4 million; and

(c) The project funds described in paragraph 9(b) above were designed to be raised in two financial closure stages. The first financial closure was reached in July 2018 with the raising of USD 60.2 million from several non-GCF sources. The second financial closure, which will include funds from GCF and others, was expected to be achieved by the end of 2019 with the funding proposal reviewed having firm commitments for this stage. By the end of the second financial closure, it is expected that GCF funding (USD 25 million) will flow in as well as an additional amount of USD 60 million making a total of USD 145.2 million raised by this closure. Furthermore, commitments from private sector investors/DFIs are expected to amount to around USD 60 million, leveraged by the GCF commitment, and thus meeting the Arbaro Fund's target of USD 200 million; and

(d) The total USD 200 million in funding raised will be appropriated according to the structure presented in the table below.

Table: Appropriation of funding*

COMPONENT	INDICATIVE COST (USD MILLION)	FROM GCF (USD MILLION)	FROM CO-FINANCING (USD MILLION)
Investment into plantation establishment and operations	133.1	16.6	116.5
Investment in land purchase/land lease	34.9	4.4	30.5
Fund management, transaction, custody costs	32	4	28
	200	25	175

* Confidential information in table has been redacted.

1.2 Impact potential

Scale: High

10. GHG emissions reduction pathway and estimation:

As the forest plantation is developed, the pathway to GHG emissions reduction by the project is through carbon sequestration by the forest and can be summarized as follows:

- (a) As the plantation grows, carbon stock in the forest changes and is monitored on a regular basis, such as annually;
- (b) Only carbon pools occasioned by the changes in carbon stock, where these are considerable, are selected for the carbon sequestration calculations;
- (c) In a forest plantation, the following assumption is made in the calculation of carbon sequestered:
 - (i) Most of the carbon changes happen in the tree biomass – mainly in the stems but also in the branches, leaves and roots;
 - (ii) Carbon is also stored in dead organic matter and the soil;
 - (iii) The timber volume in the plantations is measured first-hand through annual forest inventories;
 - (iv) Stem volumes (and other pertinent parameters) are thereafter converted into tCO_{2e} based on approved conservative conversion factors; and
 - (v) Arbaro Fund claims only net carbon sequestered in forest plantation that is additional and permanent;
- (d) The following general equation is utilized in the estimation of annual carbon sequestration achieved by the project:
 - (i) $NCO_{2s}(t) = PCO_{2s}(t) - BCO_{2s}(t) - LCO_{2e}(t) - OPCO_{2e}(t)$
 - (ii) Where:
 - (1) $NCO_{2s}(t)$ = Net CO₂ sequestered in the forest plantation boundary in year t
 - (2) $PCO_{2s}(t)$ = CO₂ sequestered in the forest plantation boundary in year t

- (3) $BCO_{2s}(t)$ = CO_2 that would have been sequestered in the project boundary in the absence of the project in year t
 - (4) $LCO_{2e}(t)$ = CO_2 emissions outside the boundary of the project that would have occurred as a result of the project
 - (5) $OPCO_{2e}(t)$ = other project CO_2 emissions that would occur as a result of the project in year t ; and
- (e) In using the analytical approach described above, Arbaro Fund uses the following considerations:
- (i) Approaches from clean development mechanism, verified carbon standard and gold standard methodologies are applied;
 - (ii) Stored carbon in harvested wood from the forest plantation in a particular year is not included in the net sequestered CO_2 calculation; and
 - (iii) To account for losses due to harvesting, a maximum sequestration that can be claimed is the long-term average that is set using recognized approved methodologies.

11. Mitigation impacts:

The impacts of the proposed project as estimated using the methodology framework described above can be summarized as follows:

- (a) The proposed Arbaro Fund projects in the selected countries of the two target geographical regions are estimated to sequester 20 million tCO_2 during the project's lifetime of 15 years;
- (b) Even if several of the portfolio companies engaged to implement the project decide to register under the verified carbon standard, it has been estimated that this will only discount out about 2.7 million tCO_2 from the sequestration impact stated above. The funding proposal argued that overall positive net sequestration cannot be less than 17.3 million tCO_2 ; and
- (c) As stated earlier in this report, while other adaptation co-benefits are expected to be delivered by this intervention, such benefits are not claimed by Arbaro Fund in this presentation. However, it is important to include the relevant impact of the project on people:
 - (i) About 5,000 direct employment opportunities will be delivered by implementation of the forest plantation project in the two regions covered;
 - (ii) About 15,000 indirect employment opportunities will also be created; and
 - (iii) About 200,000 individual livelihoods will be positively impacted by the implementation of the project in the seven LA and SSA countries that will be targeted by the intervention.

12. The project impacts (climate mitigation and human impacts) summarized above that will be delivered by this intervention are convincing evidence that the successful project will deliver robust GHG reduction benefits and deliver impacts for an appreciable number of people in the countries and regions. The necessary project monitoring parameters will be delivered by the FSC certification process which requires an in-depth monitoring protocol prior to the certification process, annual audits and a re-certification audit every five years. As such we are convinced that the various metrics mentioned in this section of the TAP report will be robustly monitored throughout the 15-year lifetime of the projects, hence ensuring the metrics are delivered.

13. The Technical Advisory Panel therefore decided to score the overall impact potential of this project as high.

1.3 Paradigm shift potential

Scale: High

14. Paradigm shift potential measures the degree and the capability of the proposed activity (implementation of sustainable forest plantations) to catalyze impacts beyond a one-off project. The discussion in this section will centre around the extent to which the process and methods that have been proposed for the development, effective implementation and operationalization of sustainable forest plantations in the seven target countries can catalyze a paradigm shift in other countries in the LA and SSA regions and other regions after completion of this intervention. The paradigm shift potential of the proposed project will be discussed and elucidated along the following lines:

1.3.1. Potential for scaling up and replication

15. Two key metrics that will facilitate scaling up and replication potentials of the proposed activities will include:

- (a) The successful development and implementation of forest plantations under the intervention proposed by Arbaro Fund will change the following baseline narratives:
 - (i) In the two target regions and seven countries where Arbaro Fund is proposing to develop the project, mitigation and adaptation efforts in the forest sector are still in their infancy and climate action is centred around energy, especially renewables or increasing energy use efficiency. Successful implementation of the proposed project will enhance the potential for scaling up and replication of mitigation actions in forests in targeted countries and globally; and
 - (ii) The requested funding from GCF is expected to crowd in more private and public funding to finance the proposed forest plantation investment. Public and private capital are needed to reach the kind of investment that will enable forest plantations to play a role in climate change mitigation. Hence, a successful launch of the Arbaro Fund has the potential to prove the environmental, social and economic concept of commercial forestry plantations and stimulate further – urgently needed – investment into the sector;
 - (1) In many of the countries in the two regions targeted by Arbaro Fund, natural forests are depleting and therefore establishing profitable carbon sinks that reduce the vulnerability of communities, such as those planned in this intervention, if successful, will facilitate scaling up of such interventions in the two regions, and replication in other regions of the world. As natural forest depletion has been significant in LA and SSA in recent years it is important that high performance is achieved. For example, a total of about 24 million ha of natural forests have been lost in these regions between 2010 and 2015, (in SSA, ca. 14 million ha; in LA, ca. 10 million ha) making the two regions global deforestation hotspots; and
 - (2) The detrimental effect of over utilizing natural forests in many of the countries targeted by the proposal is actually already evident in the downturn, and in some cases the complete paralysis, of the forest sector business; both in the processing technologies and long-term supply of sustainable raw materials are affected. Some countries that had been net exporters of wood products have gradually slipped to being significant

importers of logs and wood products. Paraguay, for example, went from being a net exporter of forest products to becoming a net importer in the last decade. The intervention proposed by Arbaro Fund will enable a paradigm shift from the baseline situation described above and its success will enhance scalability and replicability of the intervention.

1.3.2. Potential for knowledge and learning

16. Another potential paradigm shift is the extent to which the project structure is designed to enhance knowledge and learning. The project structure as presented in the funding proposal showed that the intervention will be carried out in parallel in the seven countries in the two target regions. Although Arbaro Fund is the overall project implementation agency, it will deliver activities on the ground through project portfolio companies. This strategy will offer a platform for knowledge-sharing and learning across countries and regions. Given the fact that all the forest plantation projects will be FSC certified, the large amount of data that will be generated from the initial FSC certification audits, the mandatory annual audits and the re-certification audits will create a veritable database that can form the basis of learning and knowledge-sharing across regions.

1.3.3. Contribution to enabling environment

17. The creation of an enabling environment where forest plantations will be developed and will thrive by adding value to the countries' climate mitigation activities will be made possible by successful implementation of the proposed Arbaro Fund intervention. Prior to submitting this proposal to the Board for funding approval, Arbaro Fund had been able to achieve a total of about USD 60 million at financial closure in 2018. This has partly been used to start the intervention in some of the countries targeted. Information provided by Arbaro Fund and the accredited entity (AE) during interactions indicated that the Ghanaian intervention is proceeding well and will be catalysed by approval of this proposal. It has also been stated that approval of the requested funding from GCF will crowd in more private and public sector funds for investment in forest plantation and other associated industries as a result of this project. Successful implementation of the projects, as well as the sustainable operation of the forest plantations, will not only encourage the development and implementation of activities in other countries in the targeted regions, but will also strengthen the enabling environment created within the two regions.

18. Given these various sub-metrics of the paradigm shift potential of this present submission, the independent TAP scored the overall paradigm shift potential of this project as high.

1.4 Sustainable development potential

Scale: High

19. According to the information provided in the funding proposal, a cardinal focus of the Arbaro Fund investment in general, and in this intervention in particular, is the evaluation of the sustainable development performance of an investment. Every investment decision made by Arbaro Fund takes into account the economic, environmental and social sustainability of a project as measured against quantitative and qualitative performance criteria. We have utilized information contained in the funding proposal and its various annexes as submitted by MUFG to the Secretariat, as well as communications with the AE, to properly understand the potential for sustainable development. The following is the result of this review:

1.4.4. Social co-benefits including adaptation co-benefits from project-level operations

20. The social and adaptation co-benefits that are expected to be delivered by the Arbaro Fund intervention will include:

- (a) **Providing alternative livelihoods.** In the baseline, a significant percentage of people living near the project site are smallholder rural farmers. This is especially true for the target SSA countries. These rural farmers are particularly vulnerable to the impacts of climate change. Because of greater dependence on agriculture and natural resources, their livelihoods are highly sensitive to climate variability, extreme climate events, and climate change. For many of these farms, shifting cultivation remains a dominant form of agriculture across these countries, as well as in LA countries. Changing rainfall patterns (prolonged dry conditions) can have a devastating impact on the livelihoods of these rural farmers. This problem is compounded by their low financial capacity, which also limits their ability to look for alternative income generation outside rural farming. The proposed Arbaro Fund will directly employ about 5,000 people in the two regions in the forest plantation activities and provide indirect employment to a total of about 15,000 people. It will also provide alternative livelihood activities whereby the farmers living close to the plantations are engaged in out-grower schemes in which they are trained to apply modern silviculture on their own land. This will provide diversified income, economic empowerment and improved capacity for these rural dwellers;
- (b) **Passing on best practices, including employment formalization usually unknown in rural areas.** Through the direct employment opportunities that will be provided to the rural inhabitants, labour best practices not usually known in such areas will be passed on to them. This will allow people employed under the programme to benefit from wider social services like public social security or health insurance, which is not available to them under the informal employment standards that prevail at baseline. Similarly, best practices regarding working hours, health and safety standards, vacations, etc. will be followed, benefiting people employed under the programme beyond the monetary value of their salaries;
- (c) **Contributing to the development of local communities.** Arbaro Fund's proposed forest plantation projects in the target countries will also deliver some infrastructure, either as a component of the project or as a deliberate contribution to the social welfare of the community. As discussed in the funding proposal review, such infrastructure intervention will include: wells, roads or bridges; health services (e.g. community clinics, nurses, malaria/HIV prevention); and education (e.g. school buildings, learning materials, scholarships). These services and structures will directly improve the livelihoods of local communities; and
- (d) **Mitigating the causes of urbanization.** In many developing countries including the ones targeted by the proposed Arbaro Fund intervention, a key urbanization problem is the extensive migration of young people to urban centres in search of jobs and other opportunities. Such migration has caused an explosion of the population in urban areas thus putting undue pressure on the capacity of infrastructure in urban centres. The rural location of forest plantations proposed in the project can contribute to reducing migration of youths to urban areas in search of jobs and livelihoods. By so doing the project will deliver social cohesion benefits with young people remaining in rural areas and benefiting rural communities in the long run.

1.4.5. Economic co-benefits

21. Some of the economic co-benefits that will be delivered by the intervention proposed in this submission can be summarized as follows:

- (a) **Generating employment.** As stated earlier, the project intervention in the two target regions will create direct employment for about 5,000 people. It has also been estimated in the submission that each direct employment will create between two and four more jobs along the value chain. It has also been estimated by Arbaro Fund that each employee will support about eight to ten people in the extended family or through increased economic affluence and activity. The result is that improved livelihoods will be created for about 200,000 people in the rural areas of these target countries where the planted forest plantations will exist;
- (b) **Widening the local tax base.** In the absence of this project intervention, many of the sources of input wood for wood processing industries in the target countries are regulated informally. Also, in many of the target countries, activities of the forest sector are decreasing due to the increasing scarcity of raw materials from natural forests. The dwindling economic activity means a reduction in the payment of taxes; meanwhile, in those countries where timber logging is not, or is informally, regulated, no taxes are paid. The intervention by Arbaro Fund in the target countries will introduce formalization in the forestry industry, thus creating significant tax income for local governments. Such income will be achieved both directly through corporate income taxes and tax-like payments, such as licensing fees or harvesting royalties paid by the project companies, and indirectly through personal income taxes of employees and payments of other companies that benefit from the programme indirectly. This is a significant economic benefit that will enhance the viability of local government finances in the impact areas of each target country. It has been estimated (as presented in the funding proposal) that this intervention by Arbaro Fund will generate about USD 20 million of annual tax income for local governments once the plantations mature;
- (c) **Substituting costly imports and improving balance of trade.** As presented in the funding proposal, LA and SSA imported forest products worth, on average, USD 17 billion per year from 2011–2015 (Food and Agriculture Organization of the United Nations Statistics). By generating sustainable domestic timber resources, Arbaro Fund will foster the development of local forest industries and thus contribute to improving the forest trade balance of these countries, with an eventual likely positive impact on the national balance of payment; and
- (d) **Contributing to research and development potential in developing countries.** Research and development activities are inherent components of the Arbaro Fund intervention. As clearly described in the funding proposal, such research and development activities will include: matching different tree species with local site conditions; monitoring and controlling pests and diseases; and development trials or programmes on native species and their suitability for plantation purposes. Arbaro Fund has already started some of these research and development activities in Paraguay, where trials are currently underway to establish plantation lots with native species under different silvicultural set-ups in cooperation with a local research project for production of high-quality planting materials. During a recent discussion between Arbaro Fund and the independent TAP, we were informed that research on the implications for water balance of planting some species in particular is also ongoing. Hence, it is expected that implementation of the Arbaro Fund programme will increase in the target countries as it benefits from close cooperation with the research and development activities (in forestry and potentially agriculture) of local enterprises or research institutions.

1.4.6. Environmental co-benefits

22. The following environmental co-benefits are expected to be delivered by the Arbaro Fund intervention:

- (a) **Conserving natural forests and other natural ecosystems.** A key component of the project delivery planned in each of its forest plantations is the mandatory FSC certification. The FSC certification requires that natural ecosystems, especially natural forest endowments located near the forest plantation, are conserved and protected. In addition, at and near an FSC certified forest plantation, wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods must be taken into account in the layout of the plantation. Furthermore, it is a requirement for FSC certified forest plantations that very robust stakeholder interactions must be carried out during development of the plantation to ensure stakeholder inputs; in particular, high conservation value areas are to be identified and factored into the management of the plantation. The FSC certification also requires that direct conservation should be practiced at the forest plantation. FSC requires that at least 10 per cent of the project area is set aside for conservation. However, in the Arbaro Fund's projects, on average 20 per cent of the total land area of a project will be actively conserved with the project fully responsible for it. The Arbaro Fund envisages that through its projects it will actively conserve approximately 200 ha for every 1,000 ha planted;
- (b) **Enhancing degraded landscapes and improving resilience.** A key requirement of the FSC certification of forest plantations relates to the quality of environmental benefits delivered by the plantation. Since the environmental impact of forest plantations depends on the baseline, in order to deliver optimum environmental benefits FSC certification requires that under no circumstances should natural forests be converted into forest plantations. Instead, for a forest plantation to be FSC certified it must seek to afforest or reforest degraded landscapes for the commercial, yet sustainable, production of timber resources. Besides creating additional carbon sinks, establishing forest plantations on degraded land helps to regulate soils and water flows, thus halting the detrimental effects of land degradation; and
- (c) **Reducing pressures on natural forests.** By providing a more sustainable way to source logwood for the timber processing industry, this project intervention will reduce and eventually eliminate the sourcing of these products from natural forests. The unsustainable sourcing that is occurring in natural forests in many of the SSA countries and some of the countries in LA are key drivers of deforestation in these regions. The proposed Arbaro Fund project will therefore indirectly contribute to wider conservation efforts by reducing extractive pressures on natural forests over time.

1.4.7. Gender sensitive development impact

23. Key gender sensitive development co-benefits of this project were articulated in the funding proposal and the relevant annexes and can be summarized as follows:
- (a) The project to be realized by the Arbaro Fund will ensure that employment opportunities or other benefits that will be delivered will follow a gender responsive approach; and
- (b) From Arbaro Fund's previous experiences it has been identified that forestry projects generally have specific areas of operation that are well suited to and appreciated by female employees, for example:
- (i) Female planting teams have been successful in other projects such as in Tanzania; and
- (ii) Nursery operations are typically well suited to female employees.
24. It has therefore been estimated that between 15 and 30 per cent of the workforce will be female. This will be a positive development in countries where women, especially those living in

rural areas, usually have great difficulty in finding employment. A robust gender assessment and action plan document was made available in the annex of this submission.

25. The independent TAP therefore scored the gender sensitive development potential of this project as high.

1.5 Needs of the recipient

Scale: High

26. Rural populations in the target countries of the proposed interventions by Arbaro Fund are heavily dependent on subsistence agriculture and access to other natural resources near them to maintain their livelihood. These resources are inadequate to provide above poverty line living for many rural people, hence many rural dwellers in the target countries of this proposed intervention live below the poverty line. In these rural areas, formal employment is scarce and hence income generation is limited to subsistence agriculture and dependence on natural resources that are fast being negatively impacted by climate change and variability, deepening the level of poverty.

27. The proposed intervention will develop and implement sustainable forest plantations near these rural communities, will provide direct employment to an estimated 5,000 people in the target countries, and will create improved livelihoods for over 200,000 people as a result of the proposed project. In addition to providing employment and a source of income, the formal employment of people who live in areas near to the forest plantations will provide them with access to healthcare and vocational education services, as well as the pension and social security system.

28. Given the fact that the proposed Arbaro Fund intervention will address some crucial needs of people in rural areas of the targeted countries, the independent TAP scored the needs of the recipient as high.

1.6 Country ownership

Scale: High

29. Some of the key considerations presented in the funding proposal and relevant annexes and reviewed by the independent TAP in consideration of potential for country ownership are summarized below:

1.6.1. Alignment of the proposed project to country policies

30. The mission of the Arbaro Fund is aligned with the political strategy of all the target countries. The Arbaro Fund will contribute to climate change mitigation and provide co-benefits to climate change adaptation and to social development in the target countries. Policy documents such as national development plans and intended nationally determined contributions, which were submitted by the target countries to the United Nations Framework Convention on Climate Change under the Paris Agreement, are aligned with the objective of contributing to global climate change mitigation and adaptation, which the proposed Arbaro Fund interventions will help to fulfil. As stated in the funding proposal reviewed by the independent TAP, no conflict was found between any of the national strategic policies and the Arbaro Fund's mission. As stated in the funding proposal, the target countries, with the exception of Sierra Leone, explicitly intend to promote sustainable forest plantations. In Sierra Leone too, afforestation, reforestation and agroforestry were identified as mitigation opportunities in the country's third national communication submitted to the United Nations Framework Convention on Climate Change. Forestry was also considered a key pillar of addressing climate change vulnerabilities and building resilience in the medium-term national

development plan. We can therefore conclude that the project proposed for GCF funding support is aligned with policies of the target countries.

1.6.2. Capacity of accredited entity and executing entities

31. MUFG is the AE for this proposed project. The bank will bring to this project about 350 years of financial expertise and has grown to become one of the largest comprehensive financial groups in the world. The bank is present in over 150 countries and employs about 150,000 people worldwide. The AE will be responsible for channelling the resources to the Project as a private accredited entity and will monitor the project's compliance with Arbaro Fund's standards (social, environmental, fiduciary and gender). Supervision of the project by the MUFG will be based on a periodic review of the project provided by the executing entities (EEs). The capability of the AE in understanding financial structuring and implementation is very strong and its capacity for climate finance is also buttressed by its previous work in the energy sector, under which for three consecutive years since 2016 it has been ranked No. 1 Global Lead Arranger for Clean Energy and Energy Smart Technology under Bloomberg's Annual New Energy Finance League Table. Since the energy climate finance activities of MUFG were focused on mitigation intervention, experiences from this will work perfectly with the financial capability of the Bank to deliver sound management and supervision for the proposed Arbaro Fund projects in the target countries. This will be strengthened by the effective and demonstrated climate change mitigation in forestry projects of Arbaro Fund who will work with MUFG.

32. Arbaro Fund will be the lead EE for this proposed project. In each of the target countries it will identify entities with capabilities to develop and manage forest plantations and to execute the forest plantation projects in the target countries as project portfolio EEs under the close supervision of Arbaro Fund. The work that will be delivered by Arbaro Fund as lead EE will be supported technically by Arbaro Advisors GmbH as the investment advisor of the Arbaro Fund. The advisors have a very strong track record of success in emerging markets and will bring this to bear on the success of the proposed Arbaro Fund intervention in the target countries. The advisors will provide this technical support by making available an experienced investment team dedicated to this project and the Arbaro Fund. The impressive short write-up on the experiences of this team, provided in the funding proposal, showed that all the members of the team have relevant experiences in forest management and some of their previous experiences have been in projects in countries of the two targeted regions.

1.6.3. Availability of no-objection letter

33. A measure of country ownership is whether the country's government has shown interest in the proposed project through issuing an NOL to the AE to go ahead with the commencement of project planning and possible implementation. The availability of an NOL can be interpreted to mean that the AE has presented the project ideas to the government of the country where the project is planned to be implemented, discussed the project with relevant stakeholders and obtained necessary buy-ins regarding the AE plans for the project. By the time the independent TAP reviews the project documents made available and discusses the project with the Secretariat and the AE and EE representatives, NOLs should have already been received from all participating countries.

34. Given the discussions in (a) to (c) above, the independent TAP scored the country ownership potential of this project as high.

1.7 Efficiency and effectiveness

Scale: Medium

35. Efficiency and effectiveness of the proposed project have been assessed based on the following considerations.

1.7.4. Adequacy of the financing structure

36. Optimal mitigation and adaptation impacts of forest plantations are achieved when the plantation is established in land-use areas where little or no forest exists at baseline, for example in degraded lands. The low financial buoyancy of such greenfield projects, due especially to the high cost of development and typically slow revenue generation from forest investment in general, creates barriers to significant investment in the sector. For example, large upfront investment that can be as high as USD 3,000 to USD 4,000 per ha may be needed, with positive cash flows being generated decades after the first investment is made. The stretched cash flow profile – especially of long rotation projects with a high mitigation potential – puts the financing structure of a greenfield project under strain, as not only initial establishment costs but also maintenance costs in the early years of operation have to be financed up front until operational costs can (at least partially) be covered by cash inflows from commercial thinning.

37. Hence, greenfield forest plantation investments are usually not bankable under traditional debt-based funding but require equity funding that is more suitable and does not rely on short-term positive cash flow. Domestic commercial debt financing is not available in many of the countries targeted by the Arbaro Fund intervention and only some DFIs have provided mezzanine debt to greenfield plantation companies – although typically with equity-like features. Forest plantation in the countries in Arbaro Fund’s target regions has seen only little investment to date. The proposed financing structure foresees that GCF will invest at the same terms as other investors in the Arbaro Fund, namely the GCF investment will not be concessional. Nonetheless, it is expected that the GCF’s investment will catalyse further co-investments into the Arbaro Fund and into plantation forestry in the target regions in the long term.

1.7.5. Cost effectiveness and efficiency

38. The cost effectiveness and efficiency metrics of the proposed Arbaro Fund intervention are evident in the following project characteristics:

- (a) **Capital mobilization.** This is a measure of how far GCF funding can crowd in more needed funding from other sources. According to the project plan, the GCF funding of USD 25 million will be 12.5 per cent of the USD 200 million required by Arbaro Fund. This implies that for every USD invested by GCF about seven USD of additional capital must be mobilised from other private and DFI investors for the Arbaro Fund. It is expected that further capital will be mobilized indirectly into the underlying projects. Arbaro Fund will typically not be the sole investor in the investee forestry companies, but provide financing alongside equity co-investors, such as the project developers, high net worth individuals or shareholders of the Arbaro Fund seeking direct exposure to certain projects, and mezzanine investors such as DFIs. It has been estimated that additional crowding in of funds will eventually multiply the GCF investment no less than 15 times. It is stated in the funding programme that Arbaro Fund will be the first private equity fund to solely invest in sustainable forestry in the target regions and thus has the potential to spark follow-up investments by creating a good track record for sustainable forestry as an asset class and by reducing perceived risks. Thus, the multiplying effect of the GCF funding requested is likely to have a multiplying effect even greater than the 15-fold increase mentioned above, representing a sound mobilization effect; and

- (b) **CO₂ sequestration effectiveness.** The conservative estimate of CO₂ sequestration that will be delivered by the project is 20 million tCO₂ for the USD 200 million investment expected. This translates into the following: every USD 10 invested will contribute to the sequestration of approximately 1 ton of CO₂. If the fund that will be made available as the equity contribution of GCF (USD 25 million) is assumed to deliver this amount of sequestration, the price of carbon sequestration that will be delivered by the GCF investment becomes USD 1.25/tCO₂. Since this is the first time that GCF will fund forest plantation projects, there are no benchmarks to compare the efficacy of the investment. However, it is explained in the funding proposal that these prices are competitive when compared to other – although less comparable – GCF funded projects.

1.7.6. Summary of project effectiveness

39. The estimated delivery metrics of the intervention from the climate change mitigation perspective are summarized below:

- (a) Estimated project carbon sequestration = 20.0 MtCO₂
- (b) Cost/tCO₂ sequestered (for total investment) = 10.0 USD/tCO₂
- (c) Cost/tCO₂ sequestered (for GCF investment) = 1.25 USD/tCO₂

40. To ensure that these and other important project metrics are met during the lifetime of the project, there will be a need to monitor the GHG emissions achieved as well as the people impacted by the project throughout the project operations. In order to ensure replicability of the project beyond the targeted countries and regions not only must these monitoring protocol be in place, but effective reporting protocols and a well-articulated communication plan must also be in place. Forest inventories, which provide the first step in the mitigation impact calculation, are based on scientifically approved methodologies and protocols and procedures accepted and globally used in the forestry sector. These consist of the physical, on-the-ground measurement of trees in representative forest samples, which allows for the calculation of the estimated existing volume in the plantations and growth over time. This data must be kept in the portfolio company records and, in the case of FSC, be available for FSC to study, and, in the case of Arbaro Fund, be available for Arbaro Fund to access and monitor.

41. Arbaro Fund will monitor this data annually, and it will be used in the calculation of the carbon sequestration.

42. The carbon sequestration results (among other items) are reported to GCF as part of the annual reporting cycle. Similarly, the FSC certification process has in place protocols to communicate audit findings.

43. The independent TAP therefore has ranked the efficiency and effectiveness of this funding proposal as “high”.

II. Overall remarks from the independent Technical Advisory Panel

44. The independent TAP recommends that the Board approve this funding proposal.

Reply to the Independent Technical Advisory Panel assessment findings (FP128)

Proposal name: Arbaro Fund – Sustainable Forestry Fund

Accredited entity: MUFG Bank, Ltd.

Impact potential
MUFG has noted the independent Technical Advisory Panel (iTAP) assessment with appreciation. MUFG is pleased that the iTAP considers the project intervention to have a high impact potential.
Paradigm shift potential
MUFG has noted the independent iTAP assessment with appreciation. MUFG is pleased that the iTAP considers the project intervention to have a high paradigm shift potential.
Sustainable development potential
MUFG has noted the iTAP assessment with appreciation. MUFG is pleased that the iTAP considers the project intervention to have a high sustainable development potential.
Needs of the recipient
MUFG has noted the iTAP assessment with appreciation. MUFG is pleased that the iTAP considers the project intervention to have high scores on the needs of the recipient.
Country ownership
MUFG has noted the iTAP assessment with appreciation. MUFG is pleased that the iTAP considers the project intervention to have a high country ownership potential.
Efficiency and effectiveness
MUFG has noted the iTAP assessment with appreciation. MUFG is pleased that the iTAP considers the project intervention to have a medium to high efficiency and effectiveness. As this is the first case for the GCF to fund forest plantation projects, MUFG believes that the project will set an exemplary benchmark for the GCF that will be utilised when considering investments in similar projects in the years to come.
Overall remarks from the independent Technical Advisory Panel:
MUFG is very much grateful for the overall remarks made by the iTAP upon thoroughly reviewing the project, and its unconditional endorsement for the project. MUFG has no further comments on the iTAP's overall assessment.

Annex to the GCF Funding Proposal

Gender assessment and action plan

1 Gender analysis/assessment

1.1 Methodology

The gender analysis/assessment has been prepared based on the “Gender Analysis/Assessment and Gender and Social Inclusion Action Plan Templates” and covers “Part I: Gender Analysis/Assessment: Template (Project/Program Level)” based on the guiding questions listed therein and the Gender Policy of the Arbaro Fund. The gender analysis/assessment is based on quantitative data and qualitative evidence derived from a desk review of existing literature and secondary databases, including:

- CIF (2017): Gender and sustainable forest management. Entry points for design and implementation;
- CIFOR (2012): Forests, trees and agroforests. A strategy for gender-responsive research and action;
- CIFOR (2012): Women, men and forest research. A review of approaches, resources and methods for addressing gender;
- FAO Gender and Land Rights Database;
- FAO (2007): Gender Mainstreaming in Forestry in Africa;
- FAO (2011): Governing Land for Women and Men. Gender and Voluntary Guidelines on Responsible Governance of Tenure of Land and Other Natural Resources;
- FAO (2013): Forests, food security and gender: linkages, disparities and priorities for action;
- FAO (2013): Governing Land for Women and Men. A Technical Guide to Support the Achievement of Responsible Gender-Equitable Governance Land Tenure;
- FAO (2014): State of the World’s Forests. Enhancing the socioeconomic benefits from forests;
- FAO (2016): How to mainstream gender in forestry. A practical field guide; and
- World Bank Development Indicators Database.

Specific analysis of gender issues in the forestry sectors of the target countries is largely not existing. Where available the conclusions do not differ significantly from the outcomes of more general gender analyses for the forestry sector in developing countries. Therefore, the gender analysis/assessment is separated into two broad sections. Section 1.2 analyses wide-spread gender issues in the forestry sector in developing countries that are relevant to the Arbaro Fund’s operations. Section 1.3 provides a gender analysis/assessment for each target country with a special emphasis on national gender strategies/policies and gender issues in land rights.

1.2 Sector analysis: gender issues in forestry

Methodology and overview

While the forestry sector is clearly not gender-neutral, data is scarce – especially on country level. The presented gender issues (Table 1) were identified through a desk study of secondary literature and data mainly furnished by the FAO and CIFOR. Most reviewed studies analyse rather general gender issues in forestry. While the conclusions apply to the Arbaro Fund’s target regions and will very likely apply to most of the investments, country- and project-specific aspects will need to be considered, too. However, gender analyses for the forestry sectors in the Arbaro Fund’s target countries are largely not available – and where available do not provide significantly different insights compared to the meta studies. Moreover, most of the presented conclusions were derived from qualitative rather than quantitative evidence. In 2016, the FAO published a practical field guide about how to mainstream gender in forestry. The authors note:

“There is a major lack of sex-disaggregated and socioeconomic data in the forestry sector – only some employment data exist for the formal forestry sector. Moreover, women’s activities in the forestry sector are often concentrated in the informal sector, particularly those related to wood energy, SMEs, and NWFP value chains. ... The gap in sex-disaggregated data has posed a significant challenge to policy planning.”

TABLE 1: IDENTIFIED GENDER ISSUES IN FORESTRY RELEVANT TO THE ARBARO FUND

Issue	Data type	Source
Informal economies and markets are the dominant source of livelihoods in rural areas; the engagement in forestry value chains is often crucial for rural women’s livelihoods and the well-being of their household	Qualitative	FAO
The share of formal female employment in forestry sector is low (9% in Africa, 17% in Latin America and the Caribbean) and significantly lower than in the overall economy (42% in Africa, 40% in Latin America and the Caribbean)	Quantitative	FAO
Women employed in the forestry sector tend to earn lower wages and to suffer from bad working conditions	Qualitative	FAO
Formal forestry management is dominated by men, particularly in Africa	Qualitative	FAO
In Africa, female foresters have limited chances to advance in forestry organisation due to cultural constraints; women’s work is appreciated less than men’s	Qualitative	FAO
Women tend to prefer flexible working conditions that do not clash with their day-to-day household responsibilities	Qualitative	FAO
Women’s time poverty and physical safety concerns limit their access to and use of forest resources and related activities	Qualitative	CIF
In Africa, forestry is influenced by patriarchal and socio-cultural norms and the division of labour between the sexes,	Qualitative	FAO

which makes it difficult for some women to enter the forestry sector and remain in it		
In Africa, employment opportunities for women tend to be constrained to areas considered suitable for women such as tree nursing or planting	Qualitative	FAO
In Africa, women working the forestry sector sometimes suffer from sexual harassment	Qualitative	FAO
Women play a minor role in the formal forest sector and in informal activities that generate income; their role is confined to the collection of forest products for subsistence use; typically, rural women rely on forests for products such as firewood, fodder and non-timber items such as honey or medicinal herbs for household consumption, while men generally view forests as a source of timber for construction or trade	Quantitative	FAO
Changes in tree cover and loss of community access to forests can have a disproportionately adverse impact on women, with indirect impacts on households and consequently on the livelihoods of five to ten times as many people	Qualitative	CIFOR
Women's access and property rights to forest, tree and land resources are insecure, e.g. by exclusion from decision making	Qualitative	CIFOR
(Customary) law and socio-cultural norms prevent women from accessing resources and land, having control and ownership rights and restrict their participation in decision-making processes; lack of tenure rights limits women's access to financial resources and income-generating opportunities	Qualitative	CIF
Customary law represents a challenge to women's land ownership, which is of particular concern in forest restoration and plantation settings, and agroforestry systems; men remain the principal landowners, limiting women's land and tree ownership	Qualitative	CIF
In agroforestry systems, women only rarely share ownership of trees and have little authority over high-value tree products; processing, marketing and many high-value woody goods are considered male domains; men tend to control the use of income generated from tree sales	Qualitative	FAO
In Africa, due to wide-spread patriarchy, gender issues tend to be trivialised; women tend to have no property rights or access to land or forests and the benefits derived from them	Qualitative	FAO
Women lack formal education, employment and personal networks	Qualitative	CIFOR

Sex-disaggregated employment statistics for the forestry sector are not always available	Qualitative	FAO
Non-participatory approaches might not address the specific local constraints of women effectively	Qualitative	CIFOR
Issues such as HIV/AIDS, prostitution and childbirth might be comfortable for managers to analyse and address	Qualitative	CIFOR
Women often have highly specialized knowledge of trees and forests in terms of their species diversity, management and uses for various purposes, and conservation practices; women often have a strong body of knowledge and expertise that can be used in climate change mitigation, disaster reduction and adaptation	Qualitative	FAO
High illiteracy rates among women limit their participation in capacity programmes; technical or written communication or the use of non-native languages can hinder women's understanding	Qualitative	IUCN
Inappropriate gender advocacy, such as confrontations, will hamper the support of men for gender mainstreaming	Qualitative	IUCN

Synopsis

Women rarely formally own land or trees. Women are generally underrepresented in forest user groups, such as village forest committees or community forest associations. Women's participation in stakeholder consultations is often nominal (see country analysis) and women tend to be enlisted for decision making only when resources are degraded.

In rural areas of the target countries women tend to mostly engage in subsistence activities such as cultivating food crops and collecting fuelwood and non-wood products from natural forests. Women tend to disproportionately bear the costs of subsistence tree and forest management – yet realise only a fraction of the benefits. Climate change, deforestation and loss of community access to forests can have a disproportionately adverse impact on women, with indirect impacts on female-headed households and their extended members.

Gender equality is not only a social and moral imperative, but also an economic need. Women represent nearly 50% of the world's population, yet they account for only about 41% of the formal workforce. In forestry, this share is much lower; forestry is often perceived as a male sector. Formal female employment in the forestry sector is low and comparable to other land use sectors such as agriculture or mining, ranging from 9% to 27%, with the lowest values in Sub-Saharan Africa (9%) and Latin America (17%) (Figure 1).

FIGURE 1: FEMALE EMPLOYMENT IN THE FORESTRY AND SELECTED WOOD PROCESSING SECTORS (2011)

Region	Female employment as a proportion of total employment (%)				
	Forestry	Sawnwood and panels	Pulp and paper	Forestry sector	All economic activities
Africa	n.a.	8	10	9	42
Asia and Oceania	21	30	28	27	39
Europe	15	20	27	20	46
North America	n.a.	16	24	20	47
Latin America and Caribbean	10	14	28	17	40
World	18	23	27	24	41

Source: FAO

Officially, the global forestry sector employs almost 14 million formal workers. However, especially in developing countries, the share of the informal workforce in the sector is significant and assumed to be many times higher than the formal workforce. In the forestry sector of the target regions women tend to participate in informal subsistence or non-cash activities significantly more than men, as seen in wood fuel and charcoal production statistics (Figure 2).

FIGURE 2: WOOD FUEL AND CHARCOAL PRODUCTION BY GENDER AND ENGAGEMENT (2011)

Region	Full-time (in millions)		Part-time (unpaid) (in millions)	
	Men	Women	Men	Women
Africa	19	<1	23	152
Asia and Oceania	11	<1	110	521
Latin America and Caribbean	7	3	2	33
World	37	4	135	706

Source: FAO

1.3 Country analysis

Methodology

Despite its focus on natural forests, available sector level analysis illustrates key gender issues in forestry and subsistence activities in rural communities in developing countries. This section augments these considerations with quantitative and qualitative data related to general national gender issues in the Arbaro Fund's target countries. Selected comparative gender related development indicators such as national employment rates disaggregated by sex will be presented. In addition, national gender strategies/policies, the legal framework and gender issues in land rights will be discussed separately for each target country. Gender in land tenure is of great relevance to the Arbaro Fund because the targeted reforestation/afforestation projects will require relatively large areas of land. In many cases, these areas will be rented or leased from local communities. Gender issues resulting from disparate land rights create one of the biggest gender challenges in rural communities in developing countries, as land use tends to be the main economic or subsistence activity, especially of women. However, women tend to

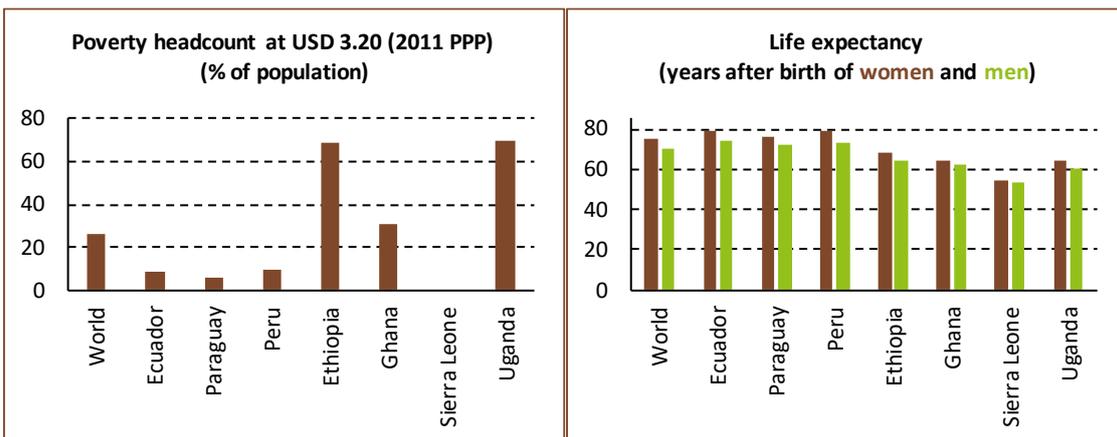
have less land rights than men. In addition, the Arbaro Fund will oftentimes consult community councils when leasing land, where women tend to have only limited decision-making power.

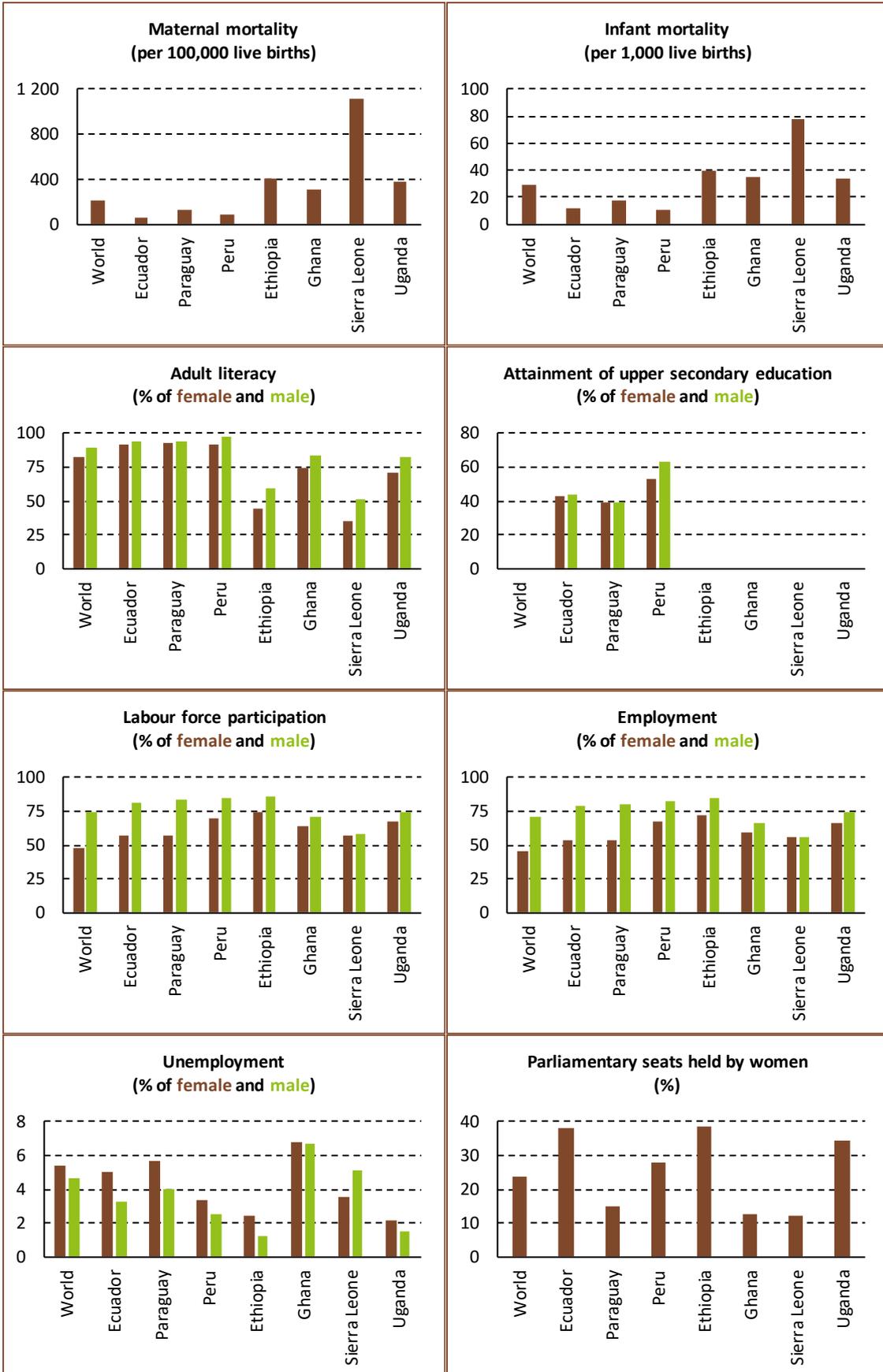
National gender related development indicators

Several national development indicators show significant gender inequality in the Arbaro Fund’s target countries (Figure 3). While women have a higher life expectancy than men in all target countries, the risk for pregnant women to die at birth is still elevated in the Sub-Saharan African target countries, especially in Sierra Leone with 1 120 deaths per 100 000 live births. Educational data is fragmented and not available for the Sub-Saharan African target countries. In the Latin American target countries, adult literacy is high and comparable between women and men, but the attainment of at least upper secondary education is low. Peruvian men achieve the highest value in the sample with ca. 60% compared to ca. 50% for Peruvian women.

Gender inequality becomes most obvious in economic and political participation indicators. Labour force participation and employment rates are roughly equal only in Sierra Leone. Inequality is significantly higher in the Latin American than in the Sub-Saharan African target countries, where both the labour force participation and the employment rate of women is between 15 (Peru) and 27 (Paraguay) percentage points lower compared to men. Similarly, the unemployment rates of women in the Latin American target countries are significantly higher than the unemployment rates of men, however at a lower scale. Only in Sierra Leone, the unemployment rate of women (4%) is slightly lower than of men (5%). The share of seats held by women in the national parliament is less than half in all target countries, but the average of ca. a quarter compares with the world average. The countries with the highest political participation of women in the sample are Ethiopia (39%), Ecuador (38%) and Peru (28%), the countries with the lowest values are Sierra Leone (12%), Ghana (13%) and Paraguay (15%).

FIGURE 3: SELECTED GENDER RELATED DEVELOPMENT INDICATORS FOR THE TARGET COUNTRIES





Source: World Bank

Ethiopia

The constitution prohibits gender-based discrimination. Ethiopian government has set a National policy on Ethiopian women in 1993 with the goal of improving the conditions of women in political, social and economic life. In 2006 the Ministry of Women's Affairs (MOWA) developed a National Action Plan for Gender Equality for the period from 2006 to 2010. Additionally, as part of Growth and Transformation Plan II (GTP II), one of the Major Targets is to "Develop Women empowerment, participation and ensure their benefits". The National Forest Sector Development Programme mentions gender mainstreaming as a key component to be considered. Ethiopia's National Adaptation Plan (NAP) identifies gender as a key consideration and recognizes women as particularly vulnerable to climate change due to socio-economic inequalities that hamper their adaptive capacity.

The country is a federation of ethnically-based administrative states. Eighty-three% of the population lived in rural areas in 2005. Women accounted for 50% of the rural population in 2004. Agriculture is the main source of livelihood for more than eight out of ten people. Agriculture accounted for 44% of GDP in 2009; industry and services accounted for 13% and 43% respectively. In 2005, the agricultural sector employed 85% of the economically active population. Although the country has a potential for agricultural development, only about 20% of the total arable land area is cultivated.

Additionally, agricultural production is extremely vulnerable to climatic conditions and the disruptive impact of war and civil conflict, which have led to several policy reversals since 1990. Subsistence, rainfed farming system dominates agriculture. Almost 12 million smallholder farmers produce about 95% of agriculture's share of GDP; more than half of the country's smallholders have 1 ha or less of land. The main crops include coffee, cereals, maize, sorghum, wheat, barley and millet. Cereals account for about 70% of the agricultural GDP. In 2005, 12 753 000 women were active in agriculture, accounting for 45% of the agricultural labour force and 77% of all economically active women.

Land reform was implemented in 1998. As a result, systematic registration and user-right certification have taken place in four regions: in the Tigray region since 1998 and in the Amhara, Oromiya and Southern Nations, Nationalities and People's Region since 2002. Since 1998, more than 5 million certificates have been delivered, which is the largest delivery of non-freehold rights in such a short time period in Sub-Saharan Africa. The new federal and regional land-use proclamations are the basis of the land reform and they include more detailed rules and regulations for improving tenure security for land users, promoting land conservation and facilitating investment.

Land is state property and citizens have user rights. Inheritance of user rights is allowed, but land use rights may not be mortgaged. Foreign investors are permitted to mortgage leased land. Unlike the rest of the country, the Tigray regional state has a gender-progressive land proclamation and progressively implements it. Here, land registration took place very early and both husbands and wives have equal rights to land: land is registered under both of their names and upon separation and dissolution of marriage, they take away equal shares of the land.

Nevertheless, despite the legal provisions of federal and regional laws envisaging joint land certification of husbands and wives, rural women still do not have effective access to land

resources. In certain areas, such as the southern part of the country, land reforms have not yet been fully endorsed because of traditional patriarchal practices or beliefs centred on male domination, where women's access to land is not officially recognized.

Women's rights to land are sidelined despite the legal provisions that envisage joint ownership of husbands and wives. In practice, issues related to the rights of widows, divorced women and polygamous wives are ignored. Although the Constitution guarantees women's rights upon dissolution of marriage, in reality the only way for widows or divorced women to secure their rights to land is to enter into marriage with one of their brothers-in-law. Indeed, if women return to their natal homes, they will not be provided for because traditional inheritance and marriage practices envisage that a woman's right to land resides with her husband.

Laws related to marriage, ownership and inheritance rights remain ineffective because they often conflict with predominant social practices. For example, although the Constitution prohibits bigamy, polygamous marriages are very common in the southern region. Only the first wife is given the right to place her name beside her husband's on land registration and certification forms, while the right to land ownership for polygamous wives remains marginalized.

In addition to being excluded from land and other natural resources, women have limited access to farm inputs. This is a special concern for women-headed households because their livelihoods and the sustainability of their land depend on such inputs.

Although land reforms promoted an intensive process of decentralization and regionalization in order to improve tenure security for land users, land conservation and land distribution, the levels of confidence in local authorities vary across regions. Tenure insecurity is particularly influenced by issues such as land redistribution and land expropriation on the part of the government. Moreover, a user's absence from land, for a period which varies from two to ten years depending on the regional area, results in the permanent loss of land rights. This causes greater tensions among de facto female-headed households.

Even though land reforms have contributed to egalitarian land distribution, land rental markets are very active and are dominated by sharecropping arrangements. Moreover, land reforms in the form of registration and certification which aim to improve tenure security for women are not yet fully enshrined in practice; the traditional gender bias against women cultivating their own land leads single women to depend on male assistance or on renting and sharecropping their land.

Ghana

The constitution prohibits gender-based discrimination. The overarching goal of the national gender policy is "to mainstream gender equality and women's empowerment concerns into the national development process; in order to improve the social, legal, civic, political, economic and cultural conditions of the people of Ghana, particularly women and men, boys and girls in an appreciable manner and as required by national and international frameworks". In consequence, gender issues in climate change are a focus area of the national climate strategy and gender sensitivity a guiding principle of the national adaptation strategy. Ghana's INDC identifies gender as a key adaptation challenge and an NDC support programme to gender

mainstream Ghana's climate action is ongoing. Similarly, another ongoing project aims to gender mainstream the national REDD+ strategy.

About half of the female workforce engages in agriculture, accounting for 44% of the agricultural labour force. Women produce around 70% of food crops, covering 40% of all the cultivable land. About 90% of women are self-employed or work as unpaid family labour in farming, agricultural enterprises or small-scale manufacturing in the informal sector; only a minority of women working in agriculture are independent farmers.

The 1992 Constitution vested all public lands in the President in trust for the people of Ghana and divided land in to two broad categories held under public and customary tenure systems. Public land is vested in the President and managed by Central Land Commissions. Customary land is vested in the customary governments, called stools or skins, on behalf of and in trust for the subjects of the stool. It is estimated that 80% of the country's lands are held under customary land tenure. The various forms of customary tenure cause widespread disputes over land as a result of the difficulty of traditional authorities in identifying the extent of land boundaries.

The system that regulates customary land ownership and land security varies widely across regions, but it generally ascribes men the exclusive property right to land. Women have access to land mainly through the male members of the family, but they might be allocated plots or cultivate their husbands' fields. Moreover, most women are not aware of the existence of the Intestate Succession Law that strengthens their land inheritance rights. Even when women are aware of the law, they often lack support in the process for claiming their rights. Women seldomly participate in lineage, clan or stool meetings where men take most decisions on land issues. If women do participate, they are generally listeners or resource people.

The expansion of commercial agriculture has driven women out of crop production forcing them into petty trade in order to provide food for their family. Furthermore, women are more likely to be allocated less fertile customary land, where it is not possible to cultivate cash crops.

Rural women have less access than men to training and technical information because extension services usually target men as heads of the household. Traditional biases limit women's access to education and decision-making roles in the family and public life. Women's limited participation in politics and public service does not allow their full integration into national decision-making.

Sierra Leone

The constitution prohibits gender-based discrimination. Empowering women belongs to the policy clusters of the national development strategy. In 2000 the National Policy on the Advancement of Women and the National Policy on Gender Mainstreaming were developed to implement the Beijing Declaration and Platform for Action of 1995. The national forestry policy targets gender sensitive stakeholder education and the NAPA identifies raising public awareness and mainstreaming gender perspectives into climate change issues as priority activity "for urgent and immediate adaptation". The G7-Sierra-Leone Partnership for the Implementation of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT) aims at "addressing issues of gender

inequality across all sectors and issues, including, but not limited to land ownership, inheritance, information, inclusive negotiations and security of tenure”.

In 2010 the agricultural share of the economically active population was estimated at ca. 60%. The female share of the economically active population in agriculture was ca. 62%. Typically, women harvest cassava and process it while men manage rice and tree plantations for cash income. Farms managed by women usually rely on inter-cropping systems that aim to protect the household against crop failure, and vegetable gardens, which provide micro-nutrients, vitamins, minerals, fibre, and slow-release carbohydrates. Women are generally expected to carry the expenditures associated with school fees and medical costs. This makes them prone to entering exploitative debt relationships and being subject to labour exploitation. Traditionally, women are also the primary care-givers in the household. Domestic and farm work mean that there is little leisure time for women or opportunity for their participation in political processes, community activities and training.

The government’s policy on agriculture provides that “there would be an increase and direct access to extension services to women farmers for institutional, information, financial, technical and advisory support”. However, due to the low levels of education, most rural women engage in agricultural activities with no active participation in extension services. Most rural women are self-employed in agricultural activity.

Sierra Leone has a dual system of land tenure: the communal land system where land is vested in the Government and the customary land system where land belongs to a family in the community. The customary system of land tenure is remarkably complex and stems from the historical, cultural and political background of the various communities. In the Provinces, women’s access to land is determined by traditional and religious customs that remain deeply rooted in patriarchal values.

The World Health Organization estimates that more than 90% of Sierra Leonean girls are initiated at puberty into “Bondo”. As part of the rite, a woman known as a “sowei” in the Mende language cuts the clitoris and prepares the girl for adulthood through singing, dancing and teaching domestic skills. This is followed by a three-month initiation in the bush where she is taught how to be a good wife and a good mother. Early marriages hamper the advancement of women and keeps subjugating girls by reinforcing women’s inferior position. Poverty and the premium put on virginity propel many parents into marrying their daughters early, shortly after the “Bondo” initiation rites at puberty.

Uganda

The constitution guarantees gender equality. Several chapters contain provisions that are directly related to women’s equal right to land and that specifically outlaw customs that are against the dignity of women or that undermine their status. Women’s equal right to inheritance has not yet been recognized in national legislation. Regarding the rights of widows, the Succession Act is in violation of the constitution and the country’s international obligations as signatory state to treaties prohibiting sex-based discrimination.

Uganda developed a Gender Policy in 2007 and a roadmap to gender mainstream the REDD+ process. The INDC seeks to “mainstreaming gender into development policies, plans and

strategies as well as observance of human rights in all climate change adaptation and mitigation actions". It is a key priority of the national climate strategy to "mainstream gender issues in climate change adaptation and mitigation approaches in order to reduce the vulnerability of women and children to the impacts of climate change and recognise their key role in tackling the issue" and gender is recognised as a cross-cutting issue. The policy further notes that "climate change response policies and activities must be gender sensitive, and the capacity of relevant stakeholders at national and local levels to promote gender-sensitive approaches to climate change adaptation must be strengthened". Similarly the national forestry policy aims at gender equity, stating:

"The government will ensure that women, youth and poor people are particular beneficiaries in the development of the forest sector. It recognises that there are sections of society that are often marginalised in development processes, and that these groups are frequently the most dependent on forest resources for their livelihoods. The government will ensure the integration of gender concerns and issues into the development of the forest sector. Strategies for implementing the Forestry Policy will specifically account for gender differences in the perceptions and uses of forest products. This will include efforts to:

- increase security of tenure over forest resources for women and youth;
- encourage active participation of women and youth in decision-making, resource management and sharing of benefits;
- promote changes in attitudes and organisational cultures, to break down gender barriers and to provide mutual respect and dignity for all people irrespective of social group, gender or background".

There is a traditional gendered division of labour in the household, with women being responsible for cooking, cleaning and taking care of children and other members of the household. In productive work, women and men have assigned traditional roles, particularly in agricultural production and marketing; men are considered mostly responsible for land clearing and women are responsible for weeding and post-harvest processing. Women also are often responsible for providing food for the household while men are responsible for providing other consumption goods.

Some crops, particularly plantains and tubers, are considered women's crops, while others – mostly cash crops – are considered men's crops. However, the extent to which traditional gender divisions of labour are adhered to varies by region, socioeconomic status and rural/urban and household categories. For example, in households headed by women and in some polygamous households, women perform tasks normally done by men. Women are among the worst affected by poverty because they have scarce access to resources and little or no control over the food they produce. Nationwide, 72% of all employed women and 90% of all rural women work in agriculture. Women are responsible for the production of about 80% of food crops and more than 50% of cash crops.

Customary tenure systems regulate 75% of the total land and are still the most common form of tenure in the country. Customary tenure applies to former public land that has not been registered. Cultural practices related to land dictate that women can access land through their male relatives, such as a father, husband or brother, but in most communities they cannot own land. They can plough the land to produce food crops, but they may not plant perennial crops, sell the land or use it as collateral without permission from men. They may be displaced from

their land or allocated small fragmented plots or marginal lands. Men are also primarily responsible for marketing agricultural products, even those primarily grown by women. Although legal constraints to women's land ownership were eliminated in the new Constitution, women are not always aware of their rights and cultural practices inhibit their access to land.

According to government data, 97% of women have access to land; however, in practice, only 8% of women own land and 7% have property rights. Between 1991 and 1997, 29% of the total female population headed households. As a result of the HIV/AIDS pandemic, many female-headed households are being created following the death of the husband. The country's HIV/AIDS infection rate is 4% and for women it is 3%. Between 1998 and 2003, female-headed households reduced their landholdings by 11%, or 0.3 acres on average, because of the increasing number of distress sales following the death of a husband.

Most women who were being threatened with eviction did not have the necessary documentation as rightful owners of the land upon the death of their husbands. In some cases, it was evident that although women were struggling to keep their land, they were not fully aware of the boundaries of the land for which they were struggling. As land becomes more of a commodity for sale, some women have been able to access user rights and ownership rights from purchasing land. However, this is true for very few women because the cost of land is so high that very few women can afford it.

The consent clause of the Land Law demands that a person who wishes to use a land title as security should seek consent from the spouse and children if the land title in question is the one on which they live and from which they earn their living. However, some women feel that the consent clause would work only in a monogamous setting. In a polygamous setting where most of them live, it would cause conflict. Agreeing or not agreeing to use the land titles could make the other woman or women unhappy, causing them to behave accordingly. Women also feel that the consent clause does not really empower women or protect their land rights. The fact that the woman does not own the land remains. If she consented and somehow the land was taken, she would be landless. If she did not consent, she would still be landless because the mere fact that she has not consented does not give her ownership. In any case, refusal to consent in a rural setting can expose women to violence.

Ecuador

The constitution prohibits gender-based discrimination. Ecuador has developed a national gender policy, the "Política para la Igualdad de Género"; its overarching goal is to gender mainstream policy making. One of the overarching goals of the national development plan is to tackle problems faced by women. The national climate strategy "Estrategia Nacional de Cambio Climático del Ecuador" recognises that women are particularly vulnerable to climate change. The INDC seeks a gender responsive approach to addressing climate change. The national REDD+ strategy targets to pay special attention to the role of women.

In 2005 the participation rate of women in economic activity was 48% compared to 83% for men. An estimated 37% of the female labour force is active in rural agriculture, of which only 4% under formal employment. Employed women earn ca. 10% less than men under similar conditions.

Particularly young women tend to migrate from rural areas to the cities or to neighbouring countries due to a lack of employment opportunities.

The agrarian reform initiated in 1964 awarded land in usufruct to cooperatives. The law gave priority to heads of household, typically men, whose main activity was agriculture and who did not own land or only had very small property. In 1973, another comprehensive agrarian reform maintained these provisions, which effectively excluded women from the allocation of land as a result of cultural impediments that did not recognize women as farmers or heads of households. In addition, then effective regulations exacerbated the situation by stipulating that the husband was the administrator of marital property. The agricultural development act “Ley de Fomento y Desarrollo Agropecuario” of 1979 limited these effects and prioritised smallholders. The mountains and the coast have very different property patterns. Women and couples own a higher share of land in the mountains than on the coast, where land ownership is dominated by men. This is partially explained by the higher share of indigenous people in the mountains.

Paraguay

The constitution prohibits gender-based discrimination. Paraguay developed a national gender in climate change strategy, the “Estrategia Nacional de Género ante el Cambio Climático”; its overarching goal is to promote the active and effective incorporation of gender issues in national climate policy making. Similarly, the national forest strategy aims to reduce gender imbalances in the forestry sector through tailored measures. The INDC intends to pay particular attention to women’s needs.

In 2007 labour force was 2.9 million people, of which ca. 1.1 million (38%) women. Of the female labour force 22% is dedicated to agriculture, 69% to services and 9% to industry. Many women adopt leadership of rural households when men are forced to migrate to the cities for work. It is estimated that 1 of 5 rural households is lead by a woman. In rural areas women are typically active in subsistence agricultural and to some extent small agricultural trade. However, most of these activities are not part of the formal economy. Women in rural areas have only very limited access to education, credit and land.

Almost 9 of 10 productive agricultural units are less than 5 ha large and a tenth of all farms own 80% of the agricultural land. The rapid expansion of intensive agriculture, deforestation, the degradation of natural ecosystems as well as the limited income generation capacity of smallholder farmers are quoted as elevated threats to women in rural areas, as they tend to be relatively more dependent on subsistence agriculture than men.

Peru

The constitution prohibits gender-based discrimination. Peru has developed a national gender in climate change strategy, the “Plan de Acción en Género y Cambio Climático del Perú”; its overarching goal is to gender mainstream national climate change mitigation and adaptation efforts. The national forest and climate strategy “Estrategia Nacional sobre Bosques y Cambio Climático” identifies women as particularly vulnerable to deforestation and lists gender equity

as a strategic principle. The INDC recognises gender as a cross-cutting issue to effective climate change adaptation.

In 2006 the labour force was estimated at ca. 13 million people, of which 43% female. The female labour force was distributed to 33% in agricultural, 8% in industry and 59% in services. On average, women in urban employment earn 30% less than men. The role of women in agriculture varies by region. For example, on the coast, women participate mainly in harvesting activities, while in mountain areas women participate in all agricultural work from livestock, land preparation to irrigation and harvest. In the Amazon region, women participate mainly in subsistence agriculture and in the production of household food. A common element in all regions are numerous household responsibilities of women. In some regions, women became heads of household due to the migration of men and armed conflicts.

The agrarian reform of 1969 allocated almost half of all agricultural land and jungle to one third of rural households. Very few women in rural areas benefited directly from the agrarian reform because the selection criteria effectively favoured men as heads of household. The most recent public policies on access to land aims at supporting the land market. Among the goals are a clarification of rural property rights, modernizing the rural cadastre system and creating an automated system for registering rural property.

Factors that hinder women's access to land are:

- The forced displacement of many women, mainly female heads of household, resulting in marginalization and poverty;
- The limited knowledge of communities and women of women's rights and the limited information disaggregated by gender;
- The strong illiteracy rate mainly of rural women; and
- The absence of identity documentation preventing the exercise of citizenship and civil, political, economic, social and cultural rights, as well as access to numerous basic services.

2 Gender and social inclusion action plan

The Arbaro Fund seeks a gender responsive approach to its investments as described in its Gender Policy. Moreover, the Arbaro Fund is expected to contribute to gender mainstreaming as a co-benefit of its operations. This section describes the intended actions to gender responsiveness on fund level based on prevailing gender issues in the forestry sector and the target countries as identified in the gender analysis/assessment (section 1) as well as the approach at investment / project level.

2.1 Project specific Gender Assessment and Action plans

As part of the investment process, gender issues, following the Arbaro Fund's gender action plan, will be considered in the due diligence where the potential investment is assessed. This due diligence process, which is in detail described in the ESMS of the Arbaro Fund, includes an on-site and location specific due diligence, including stakeholder consultations on women's and men's views of the proposed project.

As a result of the due diligence, project specific requirements are developed using the fund level action plan as guidance. These may include requirements of further assessment or analysis in order to develop a project level action plan.

The project level gender action plans are a requirement as part of the legal documentation with the investee companies. Gender action plans include clear timelines and responsibilities for achieving them as well as remedies in case of non-compliance.

It is envisaged that the Arbaro Fund will make between 8-12 investments. A location specific, on-site gender assessment will be conducted for each of these, leading to a project specific gender action plan. Where necessary, Arbaro Advisors will provide support for the investee companies in developing the action plans and fulfilling the gender targets of the Arbaro Fund. The gender action plans of each investee company will feed into the overall gender action plan and meeting of gender targets of the Arbaro Fund. These will be reported as part of the Arbaro Fund impact reporting.

2.2 Budget and resources

The Arbaro Fund allocates a due diligence budget for each potential investee project. The allocation for gender assessment is part of this due diligence budget. The budget varies from project to project but generally varies from 15-25% of the overall social due diligence budget, overlapping partly with the general stakeholder consultations.

The gender action plan budgets are at the investee company level. Arbaro Fund supervises the appropriate level and allocation of such budgets.

Arbaro will ensure that the necessary capacities are available either internally or with external expert support to conduct the assessment and implement the action plans.

2.3 Fund level action plan

Specific gender issues and the degree to which the Arbaro Fund and its investee companies can mitigate these will differ based on the local context. For example, depending on ethnic, cultural or customary circumstances, organising separate women's groups as means of participation may be more effective than setting representation targets. Particularly cultural and customary barriers belong to the strongest impediments to gender equality, but they tend to differ strongly on regional level, particularly in Sub-Saharan Africa. Therefore, gender issues are analysed as part of the E&S due diligence of an investment opportunity to tailor the presented fund-level action plan (Table 3) to the local circumstances of the investee companies.

Arbaro will use its best endeavours to ensure that the social and economic benefits that the stakeholder groups of its investee projects derive from their operations will be distributed on an equal basis considering the needs of the various groups and noting that such needs may vary between the groups. The Arbaro Fund commits to

- Advance gender equality;
- Advance women's empowerment;
- Minimize gender-related risks and safeguard women's rights; and

- Promote a gender-responsive approach.

The gender analysis/assessment shows that gender inequality and the disproportional exposure of women to climate change is particularly high in rural areas in the target countries. Women mostly engage in subsistence activities and have only limited access to benefits derived from assets such as land or trees. In addition, women rarely participate in decisions over such assets and earn only little to no cash income. Women's formal employment in forestry is marginal and their knowledge and capacity to improve their situation is limited.

The FAO identifies four pillars to mainstream gender in forestry: participation, capacity development, institutions and data collection. The Arbaro Fund can contribute to all areas except for institutions, as it is not involved in public policy making. The Arbaro Fund is expected to contribute most to gender mainstreaming through the four key action areas presented in Table 2. These action areas are mapped against the gender mainstreaming pillars identified by the FAO.

TABLE 2: KEY GENDER ACTION AREAS OF THE ARBARO FUND MAPPED AGAINST THE FAO PILLARS TO MAINSTREAM GENDER IN FORESTRY

Action areas	FAO pillar			
	Participation	Capacity development	Institutions	Data collection
Offer formal employment to women, respecting their specific needs, including on-the-job training opportunities	X	X		
Collect and report gender-disaggregated data on the Arbaro Fund investments				X
In the context of Arbaro Fund's investments promote women's participation in decision making related to land and ensure that benefits derived from by the communities from the Arbaro Fund's operations are distributed equitably	X	X		
Implement community programmes such as training or outgrower schemes in a gender responsive manner	X	X		

The highest impact of the Arbaro Fund is expected in participation and capacity development. Hence, the Arbaro Fund will support tackling several of the most fundamental gender issues in forestry as identified by the FAO:

“Increasing women’s participation in community forest management groups, small- and medium-scale enterprises (SMEs), NGOs, and village administration, as well as in the marketing and sale of non-wood forest products (NWFP) are often the principal entry points for empowering women in the forestry sector. However, aiming for a minimum number of women to be represented among stakeholder groups is not always enough. Women also need higher-level institutional decision-making powers, i.e. at the local and management levels. This will often require a socioeconomic shift that starts with women being empowered through education, training and support for income generation in order to have a say in dialogue and in transformative decisions.”

Based on these considerations the gender and social inclusion action plan (GAP) presented in Table 3 has been developed for the Arbaro Fund. It will serve as a basis for the project specific GAPs of the different investee companies.

TABLE 3: FUND-LEVEL GENDER AND SOCIAL INCLUSION ACTION PLAN

Activities	Indicators and targets	Timeline	Responsibilities	Costs
<p>Impact statement: <i>Provide effective climate mitigation through increased carbon sinks</i> by creating sustainable forest plantations and conserving natural forests, which are part of the overall project areas. Together the plantation area and the conserved natural areas increase the resilience of the overall landscape against climate change impacts, and contribute to:</p> <ol style="list-style-type: none"> 1) <i>Increased resilience of local communities, including women, against climate change</i> through provision of formal employment opportunities in the sustainable forest plantations and related value chains and decreased dependence on climate sensitive subsistence practises (such as slash and burn agriculture or charcoal production); and 2) <i>Empowerment of local communities, including women, and enhanced capacities</i> – promotion of out-grower schemes, where communities in the proximity of a forest plantations are trained to apply modern silviculture to their own land, thus providing several benefits such as additional and diversified income, economic empowerment and improving rural capacities. <p>Outcome statement:</p> <ul style="list-style-type: none"> • In the Arbaro Fund’s projects, communities, including female members, enjoy true participation in decisions making. • In the Arbaro Fund’s projects, the benefits derived from the land, including land lease payments, profit share payments and other such monetary benefits are distributed in an equitable manner. • Formal employment is provided in the Arbaro Fund’s investee projects to up to 5 000 people of which 20% are women. • The livelihoods of up to 200 000 people are improved, of which 50% are women and girls. • The Arbaro Fund’s projects produce investment specific data which is disaggregated based on gender (e.g. on employment, direct and indirect, communities and other stakeholders as well as benefit distribution and other impact). • Each investee project of the Arbaro Fund has implemented at least one community programme, such as an outgrower scheme, in a gender responsive manner. <p>Fund level activities leading to outputs at portfolio company / project level:</p> <p>The output statements and the related actions and indicators form the framework of action plans that Arbaro fund portfolio companies will be required, as a minimum, to follow. Each detailed project level gender assessment may lead to further actions and indicators.</p> <ul style="list-style-type: none"> • Arbaro Fund will make 8-12 investments during its investment period (July 2023) 				

- During the investment process, and as part of the investment analysis, prior to investment decision, a high -level gender assessment of each project takes place. This assessment takes into account the local context and conditions of the country and area of operation of the portfolio company / project as well as Arbaro’s gender action plan outputs and activities
- As part of the investment execution a social and environmental action plan is agreed with the portfolio company, this plan includes the timelines and requirements for a more detailed gender assessment as a separate section, as well as timelines and responsibilities for a portfolio company / project level gender action plan.
- Each gender action plan, as a minimum, sets activity targets leading to outputs and following the timelines as based on Arbaro Fund’s gender action plan. Local special conditions or specific operations, such as outgrower programmes, may lead to additional requirements.
- The activities in the gender action plans become an integral part of the operations of each of the portfolio companies
- Each of the portfolio company is required to follow-up and report on the activities based on the indicators in their gender action plan (which, as a minimum, follow the indicators of Arbaro’s gender action plan)
- The portfolio company level action plans are monitored by Arbaro and where relevant, Arbaro may engage external parties for such monitoring. This monitoring also includes assessment of appropriate budgeting to undertake the required actions.
- Arbaro provides support and guidance to the portfolio companies in fulfilling the action plans and where necessary external experts will be engaged to provide technical support or capacity building.

Output: gender assessment and action plans

<ul style="list-style-type: none"> • Arbaro will ensure that gender assessments are conducted in each of its portfolio company and that appropriate action plans are put in place 	<p>Indicator: number of gender assessments Indicator: number of gender action plans Target: 8-12 gender assessment and action plans</p>	<p>3 years after investment of the Arbaro Fund</p>	<p>Executing Agency and investee companies</p>	<p>Budget is included in the investee company level</p>
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Output statement: suitable and fair livelihood options for local communities, including women

<ul style="list-style-type: none"> • Provide formal employment in investee companies 	<p>Indicator: Number of people employed / Target: 15 % of staff of investee companies is female</p>	<p>3 years after investment of the Arbaro Fund</p>	<p>Executing Agency and investee companies</p>	<p>Budget is included in the investee</p>
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<ul style="list-style-type: none"> • Safeguard that investee companies respect specific working needs of stakeholder groups, incl. women (e.g. working hours or health and safety) • Ensure equal pay in investee companies • Promote participation of all stakeholders in outgrower schemes and to the extent possible safeguard the fair sharing of tree tenure and cash income 	<p>Indicator: Average salary of women and men by position in investee companies / Target: no difference in average salary per position based on gender</p> <p>Indicator: Number of community programmes (e.g. outgrower schemes) / Number of people reached by these programmes</p> <p>Target: 30 % of outgrowers are women</p>			<p>company level, not fund level</p>
<p><i>Output statement: improved access of all stakeholders, incl. women, to benefits derived from leased community land</i></p>				
<ul style="list-style-type: none"> • Support investee companies in institutionalising the equal participation of all stakeholders, incl. women, in decisions related to land in the context of the Arbaro Fund's projects • Safeguard that all stakeholders, incl. women, receive their fair share of benefits (e.g. lease or profit share payments) derived from land in the context of Arbaro Fund's projects 	<p>Indicator: Number of community members participating in consultations / Target: at least 30% of community members present at consultations are women</p> <p>Qualitative indicator: Benefit sharing mechanisms effectively include measures to involve women</p>	<p>During the first half of the implementation period</p>	<p>Executing Agency and investee companies</p>	<p>On Fund level this is part of the due diligence budget which varies across projects; otherwise included in the investee company budget</p>
<p><i>Output statement: knowledge and skills of direct stakeholders, incl. women, fostered</i></p>				
<ul style="list-style-type: none"> • Request investee companies to engage with local stakeholder groups to identify the most urgent capacity gaps of women that can be addressed as 	<p>Indicator: Number of community development programmes / Target: at least one community development programme of each</p>	<p>3 years after investment of the Arbaro Fund</p>	<p>Executing Agency and</p>	<p>Depending on project and</p>

<p>part of the investments and potential barriers (e.g. literacy or language)</p> <ul style="list-style-type: none"> • Support investee companies in implementing gender responsive community development programmes (e.g. direct trainings or scholarships) • Safeguard the equal participation of all relevant employees, including female ones, in suitable on-the-job training opportunities 	<p>investee company is implemented in gender-responsive manner</p> <p>Indicator: Number of attendees at on-the-job trainings in investee companies / Target: at least 15 % or where the overall share of attendees at on-the-job trainings in investee companies are female</p>		investee companies	investee company
<i>Output statement: increased awareness of gender issues among direct stakeholders of the Arbaro Fund and the investee companies</i>				
<ul style="list-style-type: none"> • Request investee companies to collect relevant gender-disaggregated data • Include gender statistics in the sustainability reports for investments • Distribute the collected information among relevant stakeholders in a suitable manner to highlight importance of gender mainstreaming 	<p>All relevant Arbaro fund reporting and investee company reporting includes gender disaggregated data</p>	<p>1 year after GCF investment in to the Arbaro Fund</p>	<p>Executing Agency and investee companies</p>	<p>This is part of the Executing Agency's reporting budget and investee companies' budgets</p>