LEARNING BRIEF

INCLUSIVE INVESTMENTS IN SUSTAINABLE LAND MANAGEMENT TO HELP ACHIEVE LAND DEGRADATION NEUTRALITY

New insights from the Land Degradation Neutrality Fund and Technical Assistance Facility

MARCH 2021

FOREWORD BY LOUISE BAKER

Healthy and resilient land is increasingly recognized as the foundation of sustainable growth and prosperity in all regions. It could provide the basis of plans to build back better after the COVID19 pandemic and achieve the Sustainable Development Goals.

Investing for healthy and productive land not only supports sustainable development and protects our shared natural resources but can generate commercially attractive returns. In that context, the Land Degradation Neutrality (LDN) Fund offers an effective way for the market to invest in sustainable land management, with land as a new asset class. A trilateral partnership between IDH, Mirova, and UNCCD is setting new industry standards and developing a sustainable business model for investment in land and land restoration by bringing together de-risking public investors and private sector investors.

As you will see in this fascinating publication, the Technical Assistance Facility (TAF), run by IDH as the grant-making arm of the LDN Fund, plays a pivotal role at the heart of the LDN Fund Initiative. The Facility has successfully provided resources and technical assistance to a range of project developers in developing and emerging economies worldwide. It is constructing a common platform that promotes strong social and environmental safeguards, enhances rights for people in and around project areas and links restoration to projects that generate decent jobs and livelihoods. To my mind, the TAF really reinforces the credibility of the overall investment process and that strong verifiable restoration results are obtained from the use of LDN Fund capital.

This brief showcases the groundbreaking work of the TAF and the LDN Fund. It introduces cutting-edge lessons learned from the latest LDN Fund investments that have benefited from the tailored services of the TAF. The brief provides a wealth of knowledge generated from various sustainable land management projects across the globe that can transform our understanding of land stewardship. It offers a pathway for smarter and more impactful investment in our collective future.

Louise Baker

Managing Director of the UNCCD Global Mechanism

FOREWORD BY GAUTIER QUÉRU AND NIENKE STAM

This publication marks two years of the Land Degradation Neutrality (LDN) Fund and Technical Assistance Facility (TAF) being operational. It is our second joint learning publication since the LDN Fund and linked TAF were launched at the UNCCD COP 13 in Ordos, China, in 2017.

The efforts by our teams and partners are beginning to bear fruit; the LDN TAF is supporting over ten projects pre- and post-investment to help achieve financial close, reduce risks, and maximize social and environmental impacts. And to date, LDN Fund has made five investments, and many more are to come.

Reducing and reversing land degradation requires innovative and impactful business models. Today, despite COVID, strong market demand for sustainable products and carbon neutrality continues to creates further opportunities for land project operators. And we see a new generation of entrepreneurs stepping up, raising more funds and attracting talents.

We are excited to present this learning brief, and especially proud to be able to share case studies on the three most recent investment projects, because after all it is the people in these companies and projects that are making the day-to-day difference, for the farmers and communities they work with, and for the life on land they restore and protect.

Inclusive business and investment also requires investing in building partnerships with governments, NGOs, and stakeholders. We do not hold all answers to the challenges of our times, but we are working, learning and build and contribute to such partnerships to be part of the solution.

By sharing the insights gained so far, our aim is to inspire, spark and speed-up again more innovation, transparency and partnership, for the development of an inclusive and sustainable land management business sector, and for meeting our global goals.

Gautier Queru

Fund Director, Mirova

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Program Director Landscape Finance IDH

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ACKNOWLEDGEMENTS

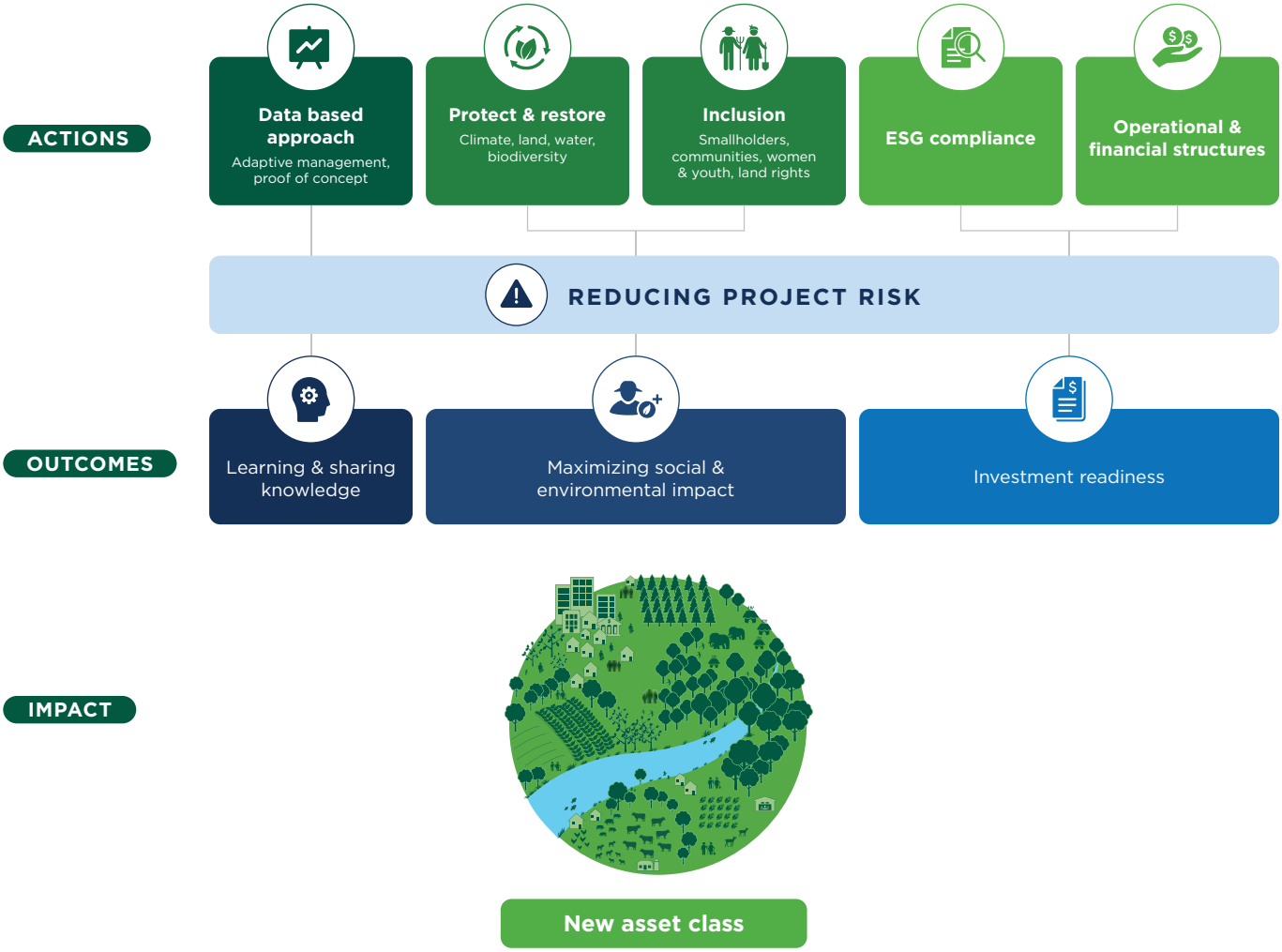
IDH, The Sustainable Trade Initiative wishes to thank the following people for their cooperation and valued contributions (in alphabetical order by organization): John Warrington from Cacao Oro; Kate Mathias, Andrew Mitchell and Stephanie Doig from Miro Forestry; Gautier Quéru, Johann Fourgeaud and Sarah Maillard from Mirova; Sheryl Loke and Teresa Law from Mountain Hazelnuts; James Rawles from WWF.

The report and its contents are the sole responsibility of IDH.

ABOUT IDH, THE SUSTAINABLE TRADE INITIATIVE

IDH convenes companies, civil society organizations, governments and others in public-private partnerships. Together, we drive the joint design, co-funding and prototyping of new economically viable approaches to realize green and inclusive growth at scale in commodity sectors and sourcing areas. IDH is supported by multiple European governments, including our institutional donors: the Netherlands Ministry of Foreign Affairs (BUZA); the Swiss State Secretariat of Economic Affairs (SECO); and the Danish International Development Agency (DANIDA). We also receive support on specific projects and programs from donors, including the Norwegian, American, British, and French governments. We work with over 500 companies, civil society organizations, financial institutions, producer organizations and governments in 11 sectors and 15 landscapes in over 50 countries worldwide.

idh the sustainable trade initiative



ABOUT THE LDN FUND AND LDN TAF

The Mirova Natural Capital platform, established by responsible investment specialist Mirova, is dedicated to providing innovative investment solutions to fight climate change and protect landscapes, biodiversity, soils, and maritime resources.

The Land Degradation Neutrality (LDN) Fund, co-promoted by the United Nations Convention to Combat Desertification (UNCCD) and Mirova, is a first-of-its-kind impact investment fund investing in profit-generating sustainable land management and land restoration projects worldwide. The LDN Fund has secured over US $150 million in commitments from investors. The Fund has 5 investments in its portfolio and this number is expected to continue to grow rapidly.

The Land Degradation Neutrality Technical Assistance Facility (LDN TAF) is the grants-making arm of the LDN Fund and is managed by IDH. The LDN TAF can provide grants and repayable grants to (potential) LDN investment projects. The aim is to improve technical quality and strengthen environmental and social impacts, strengthening project design and enabling the investment project to meet the LDN Fund investment criteria. The TAF also supports projects post-investment to reduce project risks and increase positive social and environmental impacts, as well as to better monitor their impacts and practice adaptive management more effectively. Current donors to the LDN TAF are AFD and the GEF/WWF.

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The services of the Mirova Natural Capital platform are only available to professional clients and eligible counterparties. They are not available to retail clients.

INTRODUCTION

The vast demand for agricultural commodities worldwide continues to create an increasing pressure on natural resources. Farmers, as well as rural communities are, however, challenged by the interrelated impacts of ecosystem degradation, climate change, competition for scarce resources, poverty and food insecurity. Land use must therefore be managed intelligently in order to halt land and forest degradation and provide opportunities for inclusive rural development.

INVESTMENT IN SUSTAINABLE LAND MANAGEMENT

This is where investments in sustainable land use, are needed. Examples of investing in sustainable land management include financing of businesses that contribute to biodiversity and adaptation, including sustainable forestry and agriculture; green infrastructure investments; climate mitigation projects; and payment for ecosystem services[1]. Not only do such activities generate income for local communities, protect natural assets such as forests and water, and restore degraded lands, the corresponding investments can also generate financial returns. These practices are also widely recognized as a cornerstone for achieving the Paris climate goals and the Sustainable Development Goals (SDGs), including SDG 15.3 to contribute to Land Degradation Neutrality (LDN). Already, forward-looking banks, companies and other investors have in recent years made commitments to increasingly make capital available that not only takes financial returns into account, but also socially equitable and environmental returns.

But to scale up investments in sustainable land management, more capital is needed. Recent estimates of the natural capital financing gap have been in the range of US $598–824 billion per year, with current levels of funding covering only 16–19% of the overall need to halt biodiversity loss[2]. In addition to more capital, also more projects are needed. Today there is still a shortage of investment-ready projects and developing these takes time. This is also because such projects often require new types of collaboration, and the criteria of the investment funds can be challenging to meet. Many investment opportunities are perceived

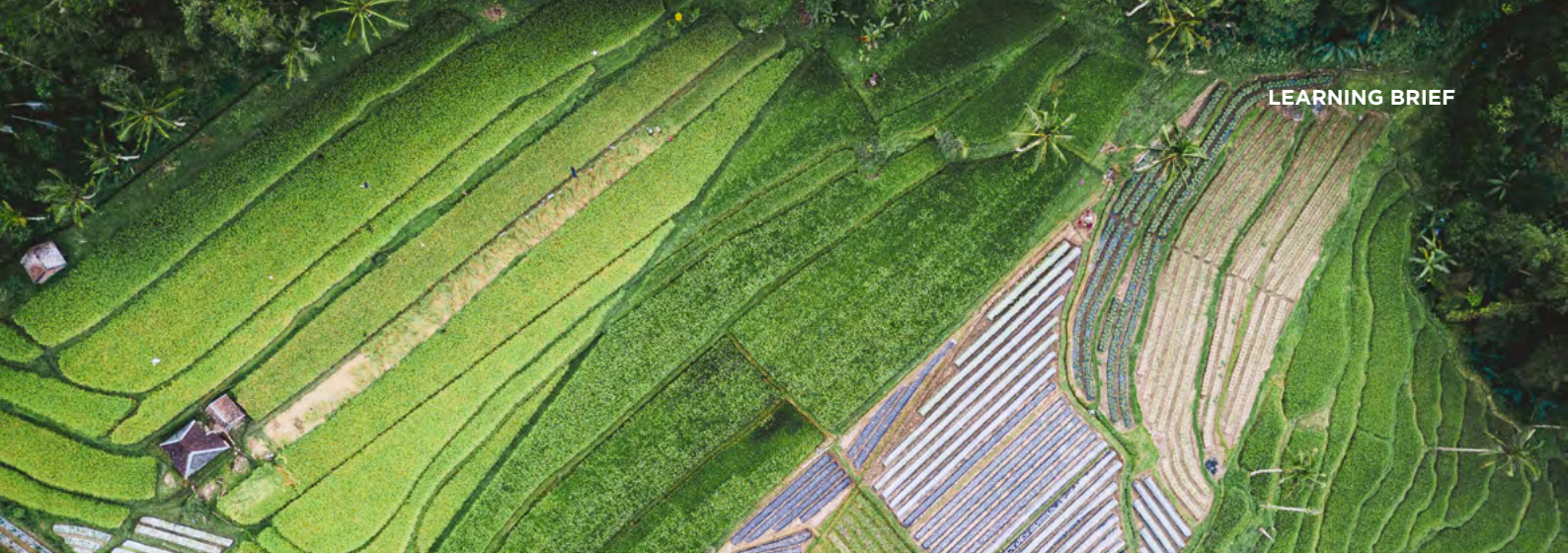
to be too risky, or are overly complex at transaction level, thereby limiting replication potential and becoming too inefficient.

To help overcome these barriers, investors, such as the LDN Fund, can invest in building sector expertise, including its risk, return and impact profiles; develop appropriate financing and risk allocation mechanisms; and invest in building partnerships and a wider ecosystem that supports these innovative deals. With a healthy pipeline of larger-scale investment opportunities with transparent features, more investors would be willing and able to increase their exposure to natural capital investments.

In addition, those supporting projects in the early stages of innovative business models, such as the LDN TAF, can scale up their support and guidance on how to pilot and structure ambitious investment proposals in line with investor requirements.

In this publication, the LDN Fund and TAF, and the investees and project development partners, share practical insights after nearly two years of being operational. Through this, our aim is to contribute to this global action agenda.

1. Source: https://www.eib.org/attachments/pj/ncff-invest-nature-report-en.pdf
2. Source: https://www.paulsoninstitute.org/key-initiatives/financing-nature-report/



LDN FUND INVESTMENT STRATEGY

Based on actual trends and pipeline development, the LDN Fund investment strategy focuses on three types of targeted projects:

1 Innovative programmatic approaches

- Recourse to innovative solutions to coordinate large number of smallholders
- Very high impact per USD invested
- Limited track record, but less capital intensive with access to upside
- Low land tenure risk

2 Nucleus farms and outgrower schemes

- Combination of 'technified' central farms providing extension services to neighboring smallholders
- Existing track record, benefitting local communities, with decent financial returns
- In line with large off-takers requirements (production reliability and impact)

3 Sustainable forestry plantations

- Robust and resilient business models with large collateral and more conservative financial returns
- Long-term employment conditions for local workers and potential for intercropping
- Many plantations have outgrower schemes to support smallholders

ABOUT THIS PUBLICATION

The LDN Fund and TAF have been operational for close to two years, engaging with more than 100 project owners. The LDN Fund has invested in 5 projects while the LDN TAF is currently supporting over 10 project partners (incl. the 5 LDN Fund investees) in a variety of geographies and value chains. As manager of the LDN TAF, IDH supports learning and knowledge sharing of successful models for investing in sustainable land management, beyond the LDN Fund and its projects. As such, this publication builds on our previous publication in 2019, by adding lessons learned from new investments and TA projects, and providing initial overarching reflections. Our learning efforts will continue in 2021 as we aim to analyze additional cases and develop a more interactive learning environment, so that stakeholders can draw lessons and insights from LDN Fund investments to date. Projects already featured will be updated as they progress, providing more refined estimates of the longer-term impact projections that these investments enable.

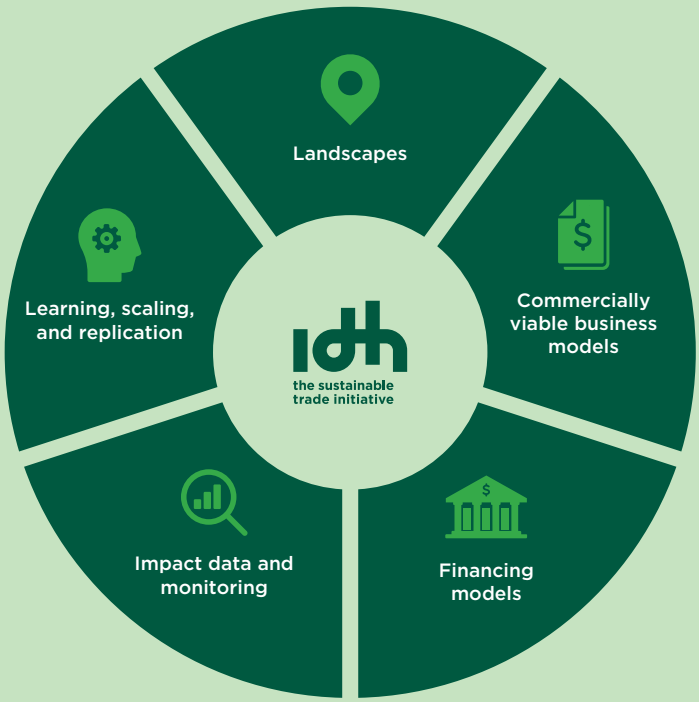
LDN FUND ESG POLICY AND ELIGIBILITY CRITERIA:

The LDN Fund assesses each potential investment project against environmental, social and governance (ESG) risk and minimal performance criteria. These ESG assessments of projects are based on the Mirova Natural Capital ESG Policy (to be accessed here), as well as on the LDN Fund ESG Annex (to be accessed here), that state the Fund's commitments in terms of ESG performance. More information on the selection and investment process of the Fund can be found here.

OUR APPROACH TO LEARNING

While motivated investors and project developers are increasingly emerging, proven models for successful inclusive investments in sustainable land management remain scarce or lack visibility and understanding from mainstream investors. To help raise awareness of these models in the broader business and investment community, a number of key learning questions were identified through which, with increased knowledge and evidence, investments in sustainable land management can be scaled up. The LDN TAF works closely with the LDN Fund and its investees to harvest the key learnings existing projects provide in support of the questions presented.

1. How do inclusive investments in sustainable land management impact the wider **landscape**, and vice versa?
   - **a.** How do they address the current economic/commercial, environmental and social trends and pressures in a landscape?
   - **b.** How does the landscape influence the project, including whether/how it acts to reduce commercial or ESG risks for the project?
2. What are the underlying **business models** of inclusive investments in sustainable land management?
   - **a.** What are the main costs and revenue drivers, as well as project risks?
   - **b.** How are communities engaged and empowered through investments in sustainable land management?
   - **c.** When and how are sustainable land management projects "bankable" or "investment-ready"?
3. How are sustainable land management projects successfully **financed**?
   - **a.** What are the financing instruments and delivery vehicles used?
   - **b.** What do the flows of finance and services look like in successfully financed projects?
   - **c.** What are the key risks for investors, and how are these mitigated to enable the investment to take place?
4. What positive environmental and social **impact** is generated through inclusive investments in sustainable land management?
   - **a.** What different standards, key performance indicators (KPIs) and tools are used to assess and monitor progress towards positive impact?
5. What is needed to **scale up and replicate** inclusive investments in sustainable land management?



Prove that financing inclusive and sustainable land use can be commercially viable and replicable...

...thus strengthening the case for a new asset class representing investments that not only provide healthy financial returns, but...

...which also protect, restore and rehabilitate land and soils, forests and peatlands, biodiversity, water and climate.

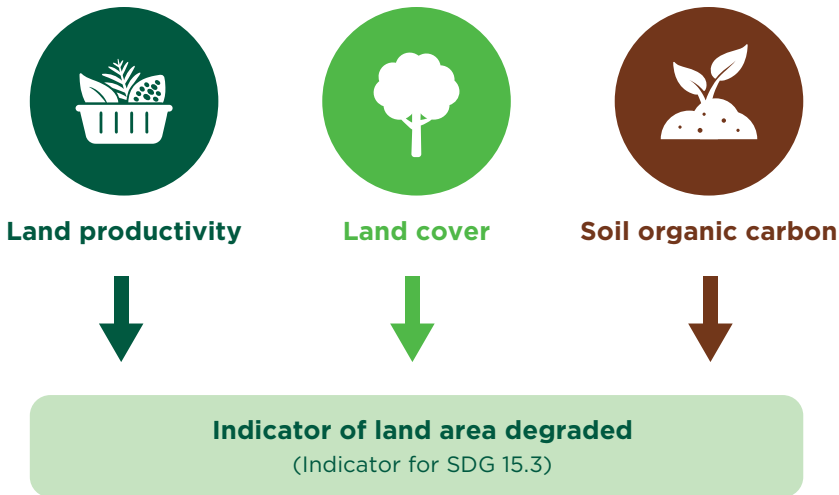
LDN MONITORING METHODOLOGY

The vision of LDN (SDG 15.3) is keeping land in balance in order to ensure food security, healthy ecosystems and human wellbeing. The United Nations Convention to Combat Desertification (UNCCD) is the custodian agency of the LDN indicator, and the scientific community of the UNCCD developed a methodology and indicators to track progress towards LDN at a national level. This methodology was, however, not yet readily applicable to investments.

The LDN TAF therefore supported the LDN Fund in developing a methodology for measuring and tracking progress on LDN impact at investment project level, directly tied to SDG target 15.3. This was done by partnering with Conservation International and their Trends.Earth platform, and GlobalGeoHub, in close consultation with the UNCCD scientific community. Building on the UNCCD's LDN Scientific Conceptual Framework, the methodology looks at three sub-indicators: land cover, land productivity (measured as net primary productivity), and carbon stock (measured as soil organic carbon, SOC). Based on a one-out-all-out principle[3], a positive overall change indicates land increasing in productivity and health, and land degradation being reversed. Most indicators are measured using remotely sensed satellite imagery, complemented for selected cases by field-level soil sampling.

The LDN TAF supports investees of the LDN Fund in setting an LDN baseline using this methodology, while building capacity with project developers to integrate continuous monitoring of LDN into their operations, and (if relevant) aligning this work with national government target-setting units. This not only allows companies to report on progress and comply with environmental and social action plans. It also enables them to practice adaptive management, and, where possible, optimizing positive environmental, social and financial returns resulting from restoring land.

The projects presented in this report have either already set their LDN baseline or are currently in the process of doing so. Where possible, initial estimates of the investments' contributions to LDN have been included, but the projections are largely still in development at the time of publication. As such, an updated version may become available once all baselines and future projections of the projects featured are finalized.



3. See also: https://knowledge.unccd.int/topics/land-degradation-neutrality

INSIGHTS FROM INVESTMENTS BY THE LDN FUND AND RECIPIENTS OF TECHNICAL ASSISTANCE

OVERVIEW OF PROJECTS SUPPORTED BY THE LDN TAF

Cacao Oro
NICARAGUA
Pre- & post-investment
- Cocoa
- Coffee
- Agroforestry

Miro Forestry
GHANA & SIERRA LEONE
Pre- & post-investment
- Timber

African Bamboo
ETHIOPIA
Pre-investment
- Bamboo

Mountain Hazelnuts
BHUTAN
Post-investment
- Hazelnuts

OTAGO
CAMBODIA
Pre-investment
- Timber/charcoal

Café Selva Norte
PERU
Post-investment
- Coffee
- Agroforestry

Ecookim
CÔTE D'IVOIRE
Pre-investment
- Cocoa
- Agroforestry

Komaza
KENYA
Pre- & post-investment
- Timber

Fairventures
INDONESIA
Pre-investment
- (Agro)forestry

	Pre-investment partners			
	Fairventures	**Ecookim Coop-Ca**	**OTAGO**	**African Bamboo**
Business model	Fairventures business model revolves around an agroforestry system, bringing timber and cash crops, as well as non-timber forest products (NTFPs) to market. The potential to generate revenue from selling carbon credits is being explored. Local social forestry permit holders (communities) provide the land and have the right to provide the majority of the necessary labor, following free prior and informed consent (FPIC) procedures.	Ecookim Coop-Ca, a cross-country Union of Cooperatives operating in Côte d'Ivoire, aims to support income-generating opportunities for their cooperative members and restoration of degraded lands through large-scale transition towards fit-for-purpose cocoa agroforestry systems. Links to REDD+ are being explored to potentially add revenue options.	OTAGO's current business model is based on the production and sale of eco-friendly charcoal-briquette and renewable biomass options, providing employment opportunities to local communities in Cambodia. To scale up the sustainable charcoal business, OTAGO is exploring the potential to establish a 10,000-hectare (agro)forestry planation on degraded land and forming a buffer zone to the neighboring national forestry reserves.	African Bamboo's current business model envisages bamboo raw materials being sourced sustainably from natural bamboo forests, community outgrower production sites, and plantation sites. Harvesting from the natural bamboo forest site will be done with low impact (manual/non-mechanical) methods, and the project will seek FSC® certification. The natural bamboo forest operations are operated through participatory forest management agreements with communities.
Investment need	Currently, Fairventures receives blended finance made up of grants, soft loans and patient equity for proof of concept at significant size. Further debt financing to scale community agroforestry models is needed.	Ecookim requires patient capital (US $10 million) to develop and scale its planned transition towards optimized cocoa agroforestry and to expand its operations to process agroforestry products other than cocoa.	Otago currently receives a mix of grants and patient capital, and initially looks to scale up its current operations with an investment of US $2.5 million. Following technical assistance, the project is expected to be investment-ready and able to attract a prospected US $10 million investment.	African Bamboo is looking for up to US $20 million in investments, mainly for processing capex and development of upstream activities.
Technical Assistance	• Improve the agroforestry mix and shorten projected loan repayment period • Cash crop selection based on market study • Soil preparation and agronomic improvement • Field testing to verify growth/yield assumptions • Post-harvesting best practice research • Updating financial modelling to include cash crops	• Establish the business model and feasibility for Ecookim cocoa producing members to transition to an agroforestry system, and determine the investment needed to facilitate this transition at scale • Analysis of the most suitable structure for Ecookim to receive and manage the investment, including assessment of local bank partnership options	• Exploring feasibility of a business model for 10,000-hectare (agro)forestry planation in Cambodia • Scouting availability of land for plantation establishment • Assessment of the scalability and replicability of the business model, both in Cambodia and internationally	• Independent impact assessment of the proposed operations in the natural bamboo forest and of the cultivation of bamboo by smallholders/communities • Assessment of feasibility to achieve FSC® certification

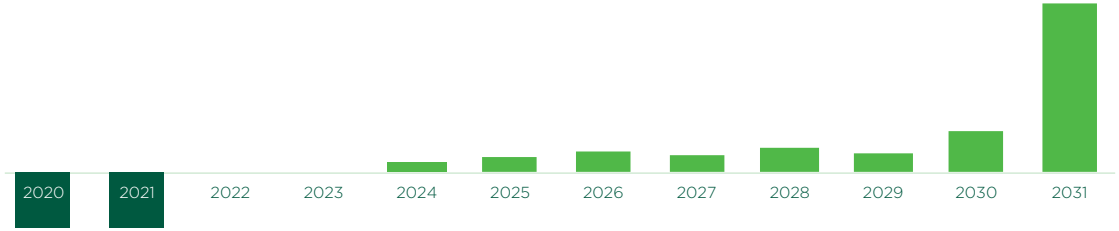
	Post-investment				
	Café Selva Norte	**Miro Forestry**	**Cacao Oro**	**Mountain Hazelnuts**	**Komaza**
Business model	**Revenue stream:** interest payments of the coop loans, fees of the services provided by the mill, carbon credits, coffee commercialization **Main value chains and producer income:** coffee, agroforestry (timber) **Cooperative:** carbon credits, increased volumes and value Community engagement through local existing coffee cooperatives whose members have secured land rights	**Revenue stream:** timber processing and sales, carbon credits **Main value chain and producer income:** timber Community employment opportunities for existing and new forestry plantations, land lease from local landowners (e.g. chiefdoms), and currently planning an outgrower scheme	**Revenue stream:** coffee and cocoa sales, carbon credits (feasibility study) **Main value chains and producer income:** coffee and cocoa agroforestry Core part of new land development for production, aiming to partner with indigenous community	**Revenue stream:** hazelnut sales, carbon credits (feasibility study) **Main value chain and producer income:** hazelnut production Through partnerships with farmers throughout the country	**Revenue stream:** timber processing and sales, carbon credits (feasibility study) **Main value chain and producer income:** timber Through partnerships with individual smallholder farmers who own the land. Farmers receive inputs and training to plant and manage trees, and a fair profit-sharing at harvest.
LDN Fund investment	Debt financing to transition to agroforestry system, and equity financing to improve coffee-processing capacity and securitize carbon benefits, via a dedicated vehicle (Urapi) **Duration:** 15 years	Quasi-equity financing of US $8 million to plant on degraded forests **Duration:** 11 years	Debt with profit sharing of US $15 million for current operations and expansion on degraded land through community partnership **Duration:** 10 years	Profit-sharing loan of US $9 million to further scale up operations **Duration:** 10 years	Equity (US $4.5 million) financing to scale up operations **Duration:** 8 years
Technical Assistance and why?	• Cooperative capacity building to increase management capacity and reduce investment risk • Research into coffee hybrid varieties and timber value chain to strengthen business model • Setting LDN baseline and impact monitoring for adaptive management	• SDM analysis and outgrower pilot to expand operations and strengthen community livelihood opportunities • Participatory land use plan to engage with wider landscape, supporting planned outgrower scheme and maximizing environmental and social impact • Setting LDN baseline and impact monitoring for adaptive management	• Confirmation of the business model potential, safeguarding positive environmental and social returns, and the FPIC process • FPIC procedure and participatory land use plan to initiate community partnership • Setting LDN baseline and impact monitoring for adaptive management	• Support on orchard and yield optimization, rainwater irrigation technologies, and pre- and post-harvesting to reduce risk • Zero-interest loans to (young) entrepreneurs to encourage establishment of businesses along the hazelnut value chain. • Acceleration of Rainforest Alliance certification. • Setting LDN baseline and impact monitoring for adaptive management	• Cost analysis of the production cycle, incl. benchmark • Feasibility study for expanding the project's operations to new sites, including environmental impact assessment • Environmental and social management system expansion support to kick-start ambitious environmental and social action plan • Setting LDN baseline and impact monitoring for adaptive management

	Post-investment				
	Café Selva Norte	**Miro Forestry**	**Cacao Oro**	**Mountain Hazelnuts**	**Komaza**
Projected impact	**8,250* hectares** now projected to contribute to LDN	**42,500 hectares** now projected to contribute to LDN	At least **2,000 and up to 10,000 hectares** now projected to contribute to LDN	**10 million trees** planted on land now projected to contribute to LDN	**40,000 hectares** now projected to contribute to LDN
	3,000 farmers engaged in the partnership, of which 20% are women	**1,500 new jobs** of which at least 24% are women	**2,100 community members** engaged in the partnership of which at least 35% are women	**15,000 farming households** projected to be engaged in the partnership of which at least half are women-led households.	**Over 20,000 farmers** engaged in the partnership of which 15% are women
	3.8 million MtCO2eq sequestered	**5 million MtCO2eq sequestered**	*Carbon sequestration impact still to be determined*	**Between 1.5 and 8 million MtCO2eq sequestered***	**7 million MtCO2eq sequestered**
	**In addition to 8,250 hectares with agroforestry, 20,000 hectares are expected to be conserved. The climate mitigation impact takes into account both activities.*			**Based on an FAO EX-ACT model and over lifetime of the project's 10 million hazelnut trees planted across 13,500 hectares in Bhutan*	

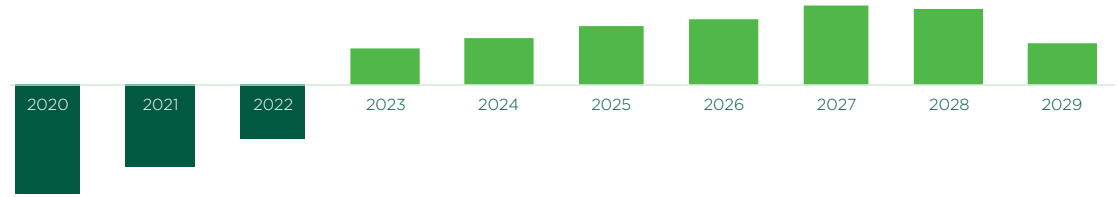
INVESTOR CASHFLOW PATTERNS

Coffee agroforestry - Investment in Café Selva Norte

Sustainable forestry - Investment in Miro



Hazelnuts - Investment in Mountain Hazelnuts



PROJECTING THE PRODUCER CASHFLOW

Service delivery models (SDMs) are supply chain structures that provide farmers with services such as training, access to inputs, finance and information. The SDM analysis is a tool for IDH to unpack the relationship between cost of services, impact on the farmer and impact on the service provider's business. An analysis conducted for a potential forestry outgrower scheme shows, for example, that an outgrower who is intercropping groundnuts before canopy closure and harvesting short-rotational trees at six years, can gain a net income of about US $2,200 in the 6-year period. This could be financially attractive to outgrowers as supplementary income since most of them have farms growing other crops, with the average farm income in the benchmarked region being around US $1,300 per year. However, patient credit is needed to bridge the initial years during negative cashflow, and the opportunity costs for communities still need to be properly assessed.

PROTECTING LAND FROM DEGRADATION AND IMPROVING RURAL LIVELIHOODS THROUGH HAZELNUT PRODUCTION IN BHUTAN

Mountain Hazelnuts

POST-INVESTMENT

BUSINESS MODEL:

Hazelnut production

FINANCING:

Profit-sharing loan of US $9 million to further scale up operations

PROJECTED IMPACTS:

10 million hazelnut trees planted on fallow or degraded land, now projected to contribute to LDN

1.5 million MtCO2eq sequestered, up to **8 million MtCO2eq**

15,000 households with doubled incomes, and at least half of which are women-led households.

CONTEXT

Agriculture, forestry, tourism, and the sale of hydroelectric power to India form a significant share of Bhutan's economy. 70% of its population lives in rural areas and the majority of people are dependent on subsistence agriculture. Constraints faced by smallholder farmers include the small size of their landholdings, limited access to technologies and inputs (including on-farm labor), changing weather patterns due to climate change, and limited access to markets in part due to poorly developed infrastructure. The typical rural household in Bhutan earns relatively low cash incomes, and with an increased flux of migrants from rural to urban areas, it is increasingly difficult to find farm labor due to competing livelihood opportunities in cities.

RURAL-URBAN MIGRATION IN BHUTAN

The rural population grew at an annual rate of only 0.6% from 1985-2005, compared to an urban population growth rate of 6.1% (population census, 2005). In a study of rural-urban migration in 2004, almost half of rural households (47%) reported that one or more family members had migrated. That trend has accelerated in the subsequent 15 years. Due to this demographic shift, there are indications that the rural workforce is aging faster than that in urban areas, further restricting labor supply. In addition, it appears that access to labor is constrained on the demand side by the inability of farmers to pay the wage rates required to compete with urban employment (FAO, 2012).

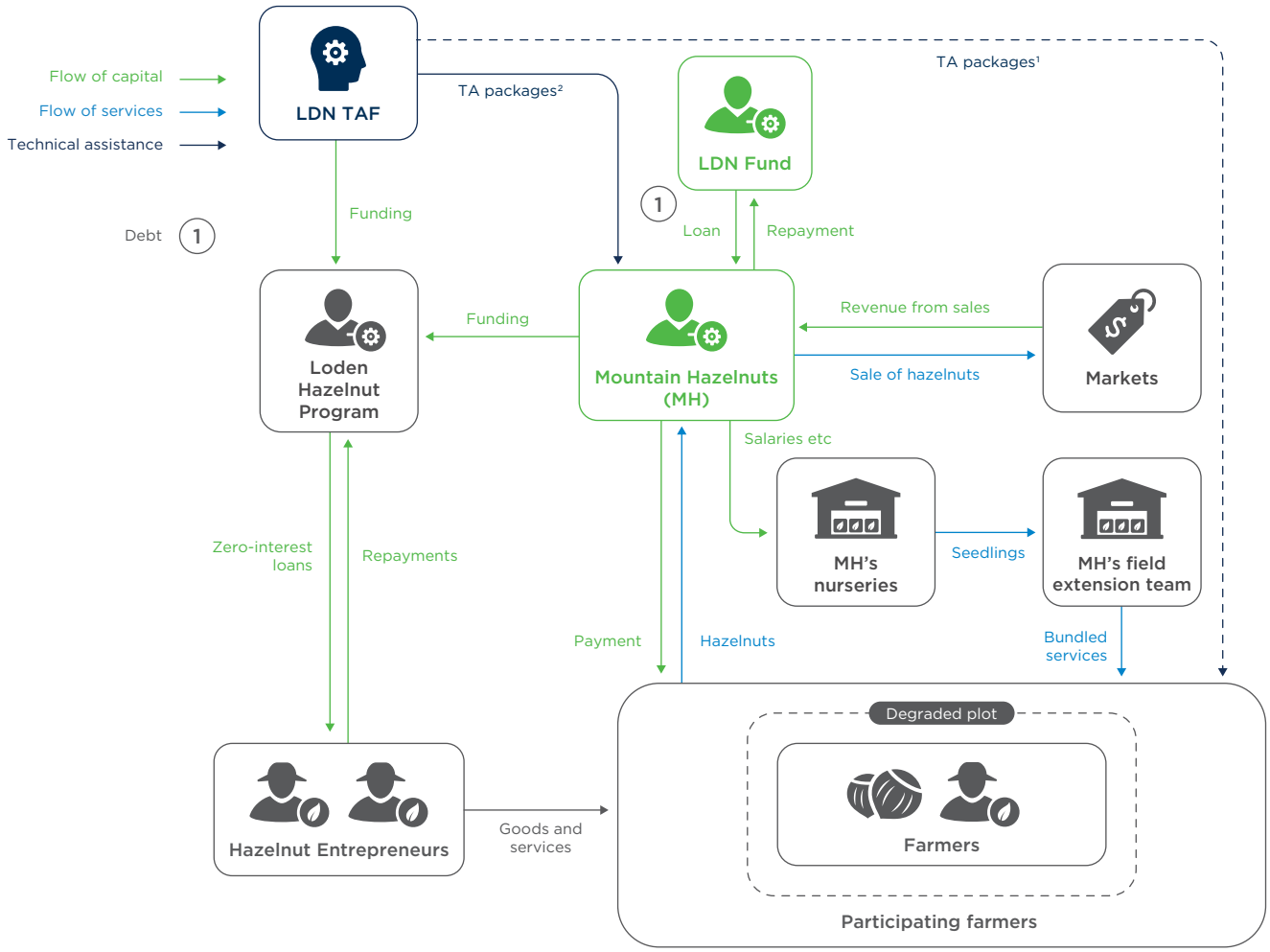
Bhutan has a wide range of ecosystems—from alpine zones of the Himalayas to subtropical floodplains at the Indian border—and presents one of the world's major biodiversity hotspots. However, because of this geography – in particular steep slopes with cold climates – less than 3% of its land is arable[4] and a large part of it is fragmented due to degradation.

4. World Bank

BACKGROUND

Partly in response to these challenges, Mountain Hazelnuts was founded in 2009 as Bhutan's first 100% foreign direct investment. Its mission was and is to create a profitable business that provides long-term income for vulnerable rural communities by planting 10 million hazelnut trees that restore degraded mountain slopes. The company works with Himalayan smallholder families and community groups (e.g. nunneries and cooperatives) to provide additional income-generating opportunities that also help restore the nation's fallow and degraded land. In line with a Memorandum of Understanding signed with the government of Bhutan, Mountain Hazelnuts buys all harvested nuts according to a guaranteed price structure that removes market risk for the growers and ensures a profitable crop. Growers interested in participating apply to Mountain Hazelnuts to plant hazelnuts on their fallow or degraded land. The company inspects every site to consider the ecological impact before an orchard is designed and planted. Approval is only given for those sites that meet the agreed principles. At national level, links between Mountain Harvest's activities and the country's LDN target-setting program have been established.

FLOW OF CAPITAL AND SERVICES



1. LDN baseline and impact monitoring, rainwater harvesting technologies, drones for mapping and orchard maintenance optimization, small-scale equipment, Rainforest Alliance certification.

2. Third-party expert advice; soil and leaf analysis to optimize inputs/training provided to trainers; cost-sharing of dryer units.

BUSINESS MODEL

Mountain Hazelnuts currently works with more than 12,000 smallholder families and community groups across the country to produce and harvest hazelnuts. Growers are provided with hazelnut trees and inputs, plus training on good agricultural practices, followed by bi-monthly visits from local Mountain Hazelnuts staff from its 200-person Field Extension team. Mountain Hazelnuts buys all harvested nuts of acceptable quality, transports the nuts to its processing plant for further drying, size sorting, and various value-adding processes, in preparation for export to international markets. To date, more than 7 million hazelnuts trees have been planted exclusively on fallow or degraded land, and hazelnut trees are perfectly suited to Bhutan's mountainous conditions and climate. At full maturity, the company expects an average yield of more than 4 kg per tree.

This model is a good fit for Bhutan's social-economic conditions. Compared to other potential cash crops, hazelnuts do not require heavy upfront investments from farmers. The model is inclusive: women or the elderly, who tend to enjoy less financial security, can tend the low maintenance crop. Incremental earnings are also significant: an average orchard is expected to double a typical rural household income.

By tracking key performance indicators (KPIs), including environmental and social KPIs, on a quarterly basis, the organization tracks whether (and how fast) it is achieving its impact and business objectives. Quarterly reviews of the resulting data allow management to adapt operational plans as necessary, ensuring key impact targets are achieved.

INVESTMENT

Purpose: Further scale up the operations of Mountain Hazelnuts.

Type and amount: Profit-sharing loan to a total of US $9 million. The financing will be released in several tranches based on operational milestones.

Duration: 10 years.

RISK MANAGEMENT

Key risks are managed as follows:

RISK	MITIGATION MEASURE
Stakeholder conflict	Mountain Hazelnuts operates as a public-private-community partnership which aligns the interests of the company, the government, the wider community, and many levels of stakeholders – from growers to international investors. The company has a targeted approach for each stakeholder group, providing regular updates on the vision and progress of the project.
Low yields	Matching production trees with suitable pollinating species and optimal orchard maintenance procedures are highly dependent on local conditions but are key to achieving consistently high hazelnut yields. By conducting large-scale trials and rolling out best practice training, as well as implementing cost-effect rainwater irrigation technologies, part of this risk will be minimized. Drone technology for aerial supervision is also planned.
Farmer income dependency on single crop	Intercropping options are being explored for farmers in the supply chain to reduce dependency on one crop for income and to diversify livelihood opportunities.
Low labor capacity due to rural-urban migration	(Young and female) entrepreneurs are encouraged to start businesses along the hazelnut value chain by partnering with a local non-profit organization that provides zero-interest loans with no collateral requirements as well as business mentorship support. This aims to encourage rural agricultural participation and prevent an outflow of talent to urban areas.

TECHNICAL ASSISTANCE

The LDN TAF further strengthens the environmental and social impacts of the hazelnut production and land restoration company, thereby also reducing investment risk. It does so by providing the following areas of support:

- Orchard and yield optimization, supported by third-party expert advice, soil and leaf analyses, and drones for orchard mapping and maintenance.
- Non-locally available materials for the implementation of rainwater irrigation technologies.
- Development of a cost-sharing model for small equipment needed for pre-harvest mechanization, as well as expert advice to optimize the drying process for post-harvest processing and purchase of materials for additional dryer units.
- Partnership with the Loden Foundation (leading Bhutanese civil society organization) to provide zero-interest loans to (young and female) entrepreneurs to encourage establishment of businesses along the hazelnut value chain.
- Acceleration of the Rainforest Alliance certification process.

- Setting an LDN baseline and monitoring progress to drive adaptative management and maximize restoration returns in Bhutan.

PROJECTED IMPACT

By improving the lives of participating growers, Mountain Hazelnuts helps reduce rural-to-urban migration and sustain local communities. It also contributes to a more inclusive society, offering economic opportunities. Moreover, the root structure of hazelnut trees is highly effective as a natural retaining wall, stabilizing the soil, reducing erosion, and cleaning up the water. The trees sequester CO2 to help mitigate climate change.

LDN

Current status: The LDN baseline confirmed:

- 7.8% of the investment landscape identified as degraded compared to 5.9% within the wider region;
- 72.2% of the investment area classified as grassland or cropland;
- Soil organic carbon content within the first 30 cm of the soil of 73.9 tons carbon per hectare in fallow sites, compared to 85.9 tons C/ha in hazelnut orchards at least 6 years old.

Projected impact: 10 million hazelnuts trees planted on fallow or degraded land, contributing to LDN. The project interventions are expected to contribute to LDN on all hazelnut orchards in scope. While land productivity is not expected to significantly change (although this may differ once trees have reached maturity), an increase in woody coverage in areas managed by Mountain Hazelnuts is anticipated, as well as a significant increase in soil organic carbon stocks, thereby achieving overall LDN.

Gender

Current status: Over 5,000 women-led farming households are part of the project's value chain. In addition, more than 260 Bhutanese women from rural communities are currently directly employed by Mountain Hazelnuts, providing training and support for their health and personal finance.

Projected impact: At scale, at least half of the 15,000 growers involved in the hazelnut cultivation will be women-led.

Forests

Current status: The investment landscape is dominated by tree-covered areas (81.2%) compared to only 25.3 % within the region. As such, by promoting yield optimization and benefits on the land in scope, restoration of degraded areas is prioritized, and degradation of forests avoided.

Community livelihoods

Current status: An earlier study confirmed that 65% of household heads in the supply chain had no formal education, but that 62% now sent all of their children to school. Around 90% of hazelnut growers now have access to a healthcare facility within a walking distance of five hours. While overall financial literacy among rural farming communities tends to be low, 67% of beneficiaries have a bank account, representing a first step towards greater financial empowerment.

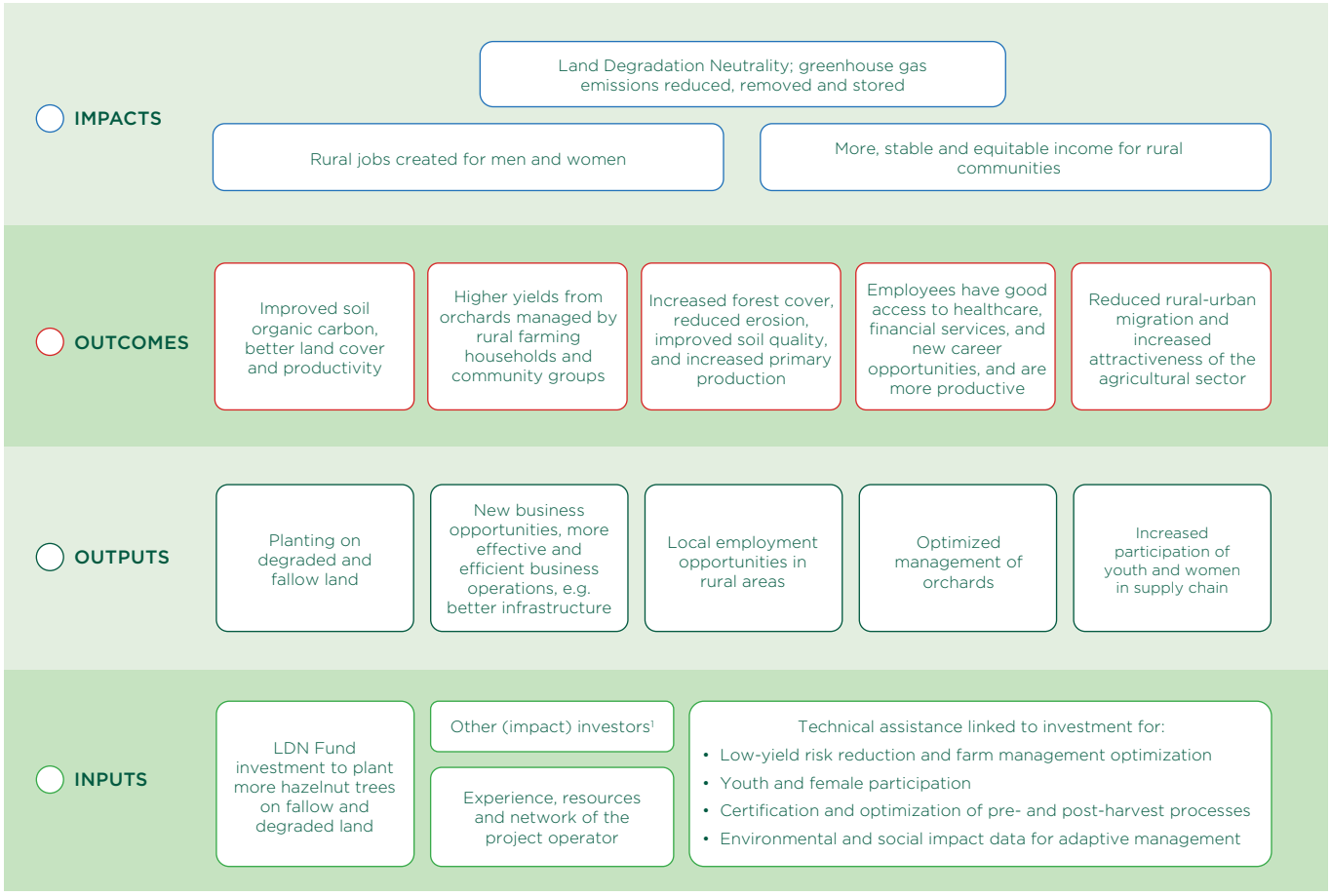
Projected impact: A doubling of the income of participating farmer households is expected; at full scale, this will include up to 15% of Bhutan's population through orchard cultivation and the hazelnut value-chain, including processing and the provision of goods and services.

Climate

Current status: in 2019, Mountain Hazelnuts reduced 48,000 MT of carbon emissions.

Projected impact: An estimated 1.5 MtCO2eq will be sequestered by the orchards.

THEORY OF CHANGE



1. IFC, ADB, GAFSP, Ceniarth, Mosaico, responsAbility, RS Group, Mulago and Small Giants

KEY LESSONS FOR STAKEHOLDERS

The model of a public-private-community partnership closely links the company with the government and its people, creating synergies and boosting local economic development.

When initially measuring impact, Mountain Hazelnuts conflated impact on female employees with impact on female growers, blurring the lines between access to career opportunities and better livelihoods for women. Through working with *Business Call to Action on the Impact Champions Programme*, the company has been better able to clarify the impact of Mountain Hazelnuts' operations on different groups of stakeholders, including separating impact on female employees from impact on female growers. This has helped the company improve its operational decision-making as well as driving value for the business and its stakeholders.

The use of data and rigorous monitoring can help drive business ambitions while leveraging impact creation. For example, from a baseline survey conducted in 2018, Mountain Hazelnuts found that cultivating hazelnuts is most growers' first exposure to caring for tree crops. As such, this led to an increased operational focus on field staff teaching growers good orchard-management practices, including planting, fencing, weeding, irrigation, mulching, pruning, and harvesting.

REHABILITATING LAND AND PARTNERING WITH INDIGENOUS COMMUNITIES THROUGH COCOA AND COFFEE AGROFORESTRY IN NICARAGUA

Cacao Oro

PRE- AND POST-INVESTMENT

BUSINESS MODEL:

Cocoa and coffee agroforestry

FINANCING:

Profit-sharing loan for capex/opex, and expansion on degraded land through community partnership

PROJECTED IMPACTS:

4,000 hectares of land, and up to **10,000 hectares** of land now projected to contribute to LDN

2,100 community members receiving benefits from the project, of which at least 35% are women

CONTEXT

The North Caribbean Coast Autonomous Region (RACCN) is one of two autonomous regions in Nicaragua. 76% of the RACCN consists of indigenous territories with communal property and being geographically isolated has a unique history and culture. The area was originally densely forested, but has experienced severe land degradation caused by cattle ranching, timber harvesting by private companies and illegal loggers, and extreme weather events. Another factor is land conflict, which especially takes place between indigenous communities and Mestizo 'colonists' occupying and clearing lands within the community's territory.

In 2007, after Hurricane Felix devastated northeastern Nicaragua, the founders of Cacao Oro had the opportunity to purchase 3,000 hectares in the country's northern Atlantic Caribbean coastal region with the purpose of extracting the fallen timber. This was also the genesis of Cacao Oro's relationship with the neighbouring Awas Tingni community.

BACKGROUND

Cacao Oro de Nicaragua was subsequently founded in early 2014 to produce sustainable and certified agroforestry-grown cocoa and coffee on those 3.000 hectares of degraded land. The company targets international markets, primarily the United States and Europe. The current farm operations are divided into 5 Productive Units of approximately 400 hectares, each headed by a head technician who is responsible for all operational aspects on their Productive Unit. The idea behind the work in farm units is to instill a sense of teamwork and ownership of the results between all the workers in the Unit.

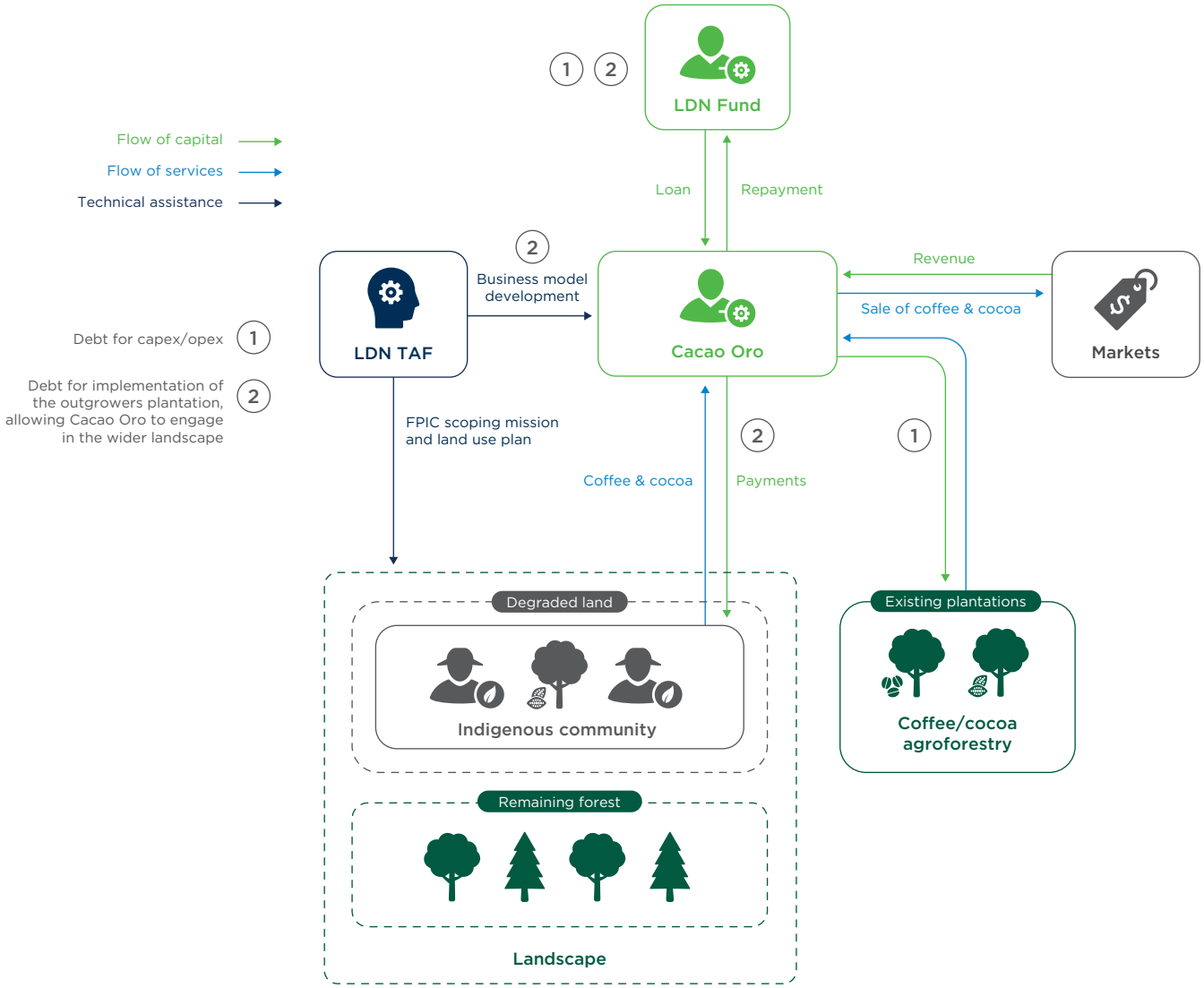
From the start, the cocoa-farming operation was developed under an agroforestry model to help the restoration of the landscape and promote the diversity of the region's flora and fauna. With 2,000 hectares planted by the end of 2018 – and approximately 1,000 hectares of the farm are considered natural reserve and protection zones for waterways and will not be developed - , Cacao Oro started to explore expansion options in the region.

Through an investment by the LDN Fund, the company aims to consolidate its current operations, as well as expand its current production area. Alongside a 100 km road from the farm to the port, a smallholder-focused expansion project is being designed with potential to impact an additional 50,000-100,000 hectares under sustainable land management. In addition, the company is exploring a partnership with the Awas Tingni indigenous community. This project would allow for restoration of the community's degraded land through cocoa and coffee agroforestry, supporting a resurgence of native biodiversity and improved livelihood opportunities for the community, also through infrastructure improvements that enable better access to markets. In addition, the project may indirectly form an incentive for government support in conflict resolution between the indigenous community and the colonists, in line with the legislation.

AWAS TINGNI COMMUNITY

In the North Caribbean Coast Autonomous Region (RACCN) lies the AMASAU territory, a major part of which is located in the Waspam municipality. AMASAU is home to the Mayangna indigenous people, which include approximately 2,100 Awas Tingni community members.
The Awas Tingni received land titles to 74,000 hectares of community lands in December 2008, as a result of a landmark decision in their favor by the Inter-American Court of Human Rights (2001).

FLOW OF CAPITAL AND SERVICES



BUSINESS MODEL

Cacao Oro operates a large-scale, UTZ certified cocoa plantation in Nicaragua developed using a full agroforestry model intended to also rehabilitate severely degraded land. Operations began on a 3,000-hectare farm, located in the municipality of Rosita on the Atlantic coast, and more than 2,000 hectares have been planted to date. The first crop was harvested in 2017, and total annual production is expected to grow to approximately 4,000 metric tons by 2022. In parallel, a permanent nursery under sunshade cover is being operated by the company and which has production capacity of 1,500,000 plants per year.

Towards the future, Cacao Oro intends to expand its production area through an outgrower program, and is also exploring an innovative partnership with the Awas Tingni indigenous community, to replant part of the degraded and unproductive land owned by them with agroforestry, combining indigenous and commercial tree species with coffee and cocoa crops.

An important condition for this project to be realized is a strong free, prior and informed consent (FPIC) process in place, and confirmed consent of the Awas Tingni community for the project, in accordance with IFC performance standards and the VGGT regarding indigenous peoples and in line with the Nicaraguan government's FPIC protocols.

INVESTMENT

- **Purpose:** The LDN Fund investment in Cacao Oro is along two investment lines meant for capex/opex and to allow Cacao Oro to engage in the wider landscape and implement the outgrower scheme.
- **Type and amount:** Profit-sharing loan up to US $15 million. The financing will be released in several tranches, starting with strengthening the operations of current plantations. Meanwhile, technical assistance is being used to prepare for release of subsequent tranches for farm expansion, potentially in partnership with the indigenous community.
- **Duration:** 10 years.

RISK MANAGEMENT

Key risks are managed as follows:

RISK	MITIGATION MEASURE
Region characterized by land conflict.	National government to map land users and holders, including a legal analysis of the rights of colonists to project land.
Project negatively affects community livelihoods	A social and environmental impact assessment will be conducted to properly understand and engage with the complex governance structures of the indigenous community, as well as the difficult historical relationship with forest concessions and cooperatives on their land. Also, investment in the expansion project with the indigenous community will only be considered if FPIC can be independently verified.
Project does not benefit the community	A benefit-sharing mechanism is being developed and tested to ensure benefits are appropriately shared between the company and community.

TECHNICAL ASSISTANCE

Initially, the LDN TAF supported a scoping mission with an experienced consultant to contextualize the project and to help identify the most pressing technical assistance needs. Based on this, an independent third party consultant was contracted to map the potential to achieve FPIC with the indigenous community and colonists residing on the land. This initial confirmation was instrumental to a positive investment decision by the LDN Fund.

Moving forward, the LDN TAF will support Cacao Oro as well as a third party independent expert supporting the indigenous community with the preparation and planning stages of the FPIC process. Depending on the outcomes, the FPIC process will be further developed and supported by the LDN TAF.

Finally, an LDN baseline and subsequent monitoring plan will be established.

PROJECTED IMPACT

LDN

4,000 hectares contributing to LDN with potential to expand up to 10,000 hectares

At national level, the Nicaraguan government is fully committed to the UNCCD and LDN, and has stated voluntary goals in this regard. This project in part contributes to the country's ambition. In addition, the project provides proof of concept for other country initiatives, such as the National Reforestation Crusade, an initiative to enable reforestation of 30,000 hectares per year, and the ENDE-REDD+ Strategy.

Gender

Cacao Oro has always promoted gender equality in its operations. From field labor through management positions, women represent approximately 35% of the workforce. In key operations, such as in nurseries, women represent over 70% of the workforce, including all management positions.

Forests

The planted area acts as a barrier against barrier against colonists and livestock grazing, and helps to protect forests and waterways.

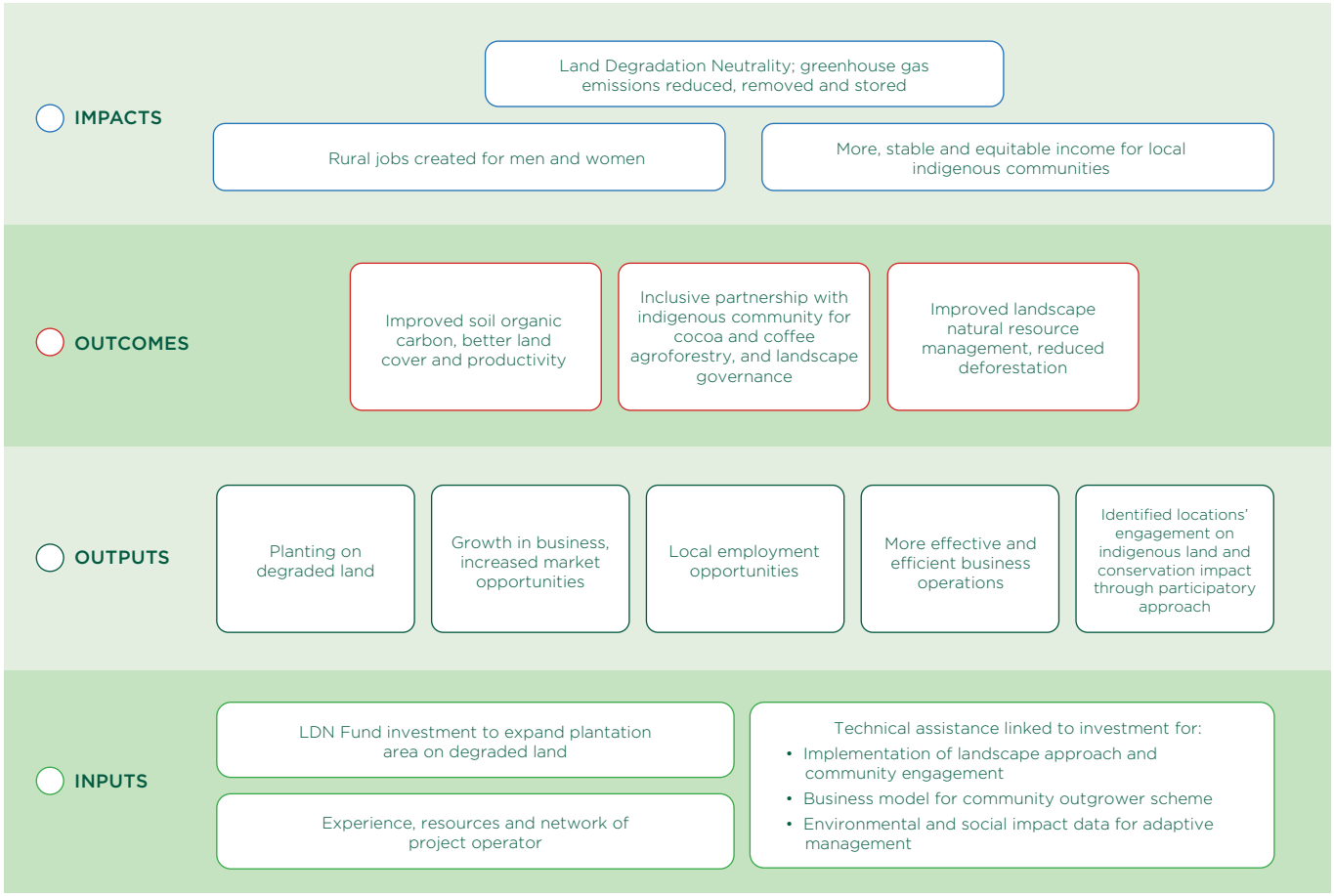
Community livelihoods

At least 500-600 employed community members receive social security benefits. Pending additional investment, the community is expected to also be positively impacted through the benefit-sharing model, currently comprising approximately 360 families or 2,100 individuals.

Climate

Not yet known.

THEORY OF CHANGE



KEY LESSONS FOR STAKEHOLDERS

- The business and investment case for agroforestry systems exists, but it will require extensive on-the-ground experience from a project developer that has the local know-how in place to operate an agroforestry plantation. It should ideally be based on proven pilots under the same climatic and local conditions as the planned expansion/growth.
- Agroforestry is a good way to connect with local communities and have them take ownership.
- If the project operator does not have a technical farming background, and lacks a proper understanding of the local context, the project will not work.
- If an agroforestry project is succeeding in one location, it does not mean that it can be easily replicated to another context. Although lessons learnt can be applied, it would still require a thorough understanding of the local context, climatic conditions, and an experienced project operator.

SUSTAINABLE FORESTRY LANDSCAPES IN GHANA AND SIERRA LEONE

Miro Forestry

PRE- AND POST-INVESTMENT

BUSINESS MODEL:

Forestry

FINANCING:

Debt financing for restoration on degraded land

PROJECTED IMPACTS:

42,500 hectares of land now projected to contribute to LDN

Sequestration of **5 million MtCO2eq**

1,500 additional jobs, of which at least 19% (24% in Ghana) are women, and improved incomes for local communities

COMMERCIAL AFFORESTATION PROGRAMS SUPPORTED BY THE LDN FUND

The impacts and risks of large-scale forestry plantations are closely linked to the management approach taken and local context, but good practices and a suitable location allow for the effective mitigation of risk and promotion of positive impacts. The LDN Fund identifies and supports programs that follow best practices to overcome common plantation concerns, develops together with the companies ambitious Environmental and Social Action Plans and monitors implementation throughout the investment period, and can provide TA through its Technical Assistance Facility managed by IDH to make further improvements.

Rather than pure monocultures, LDN Fund supports programs that plant a mosaic of different commercial species, reinforced by FSC® requirements for conservation areas with indigenous species, buffer zones, and the protection of High Conservation Value areas. This mosaic of different species and conservation areas supports an increase in biodiversity and improves ecosystems compared to the degraded land it replaces.

Sustainable commercial plantations are an important component of Forest Landscape Restoration, as one type of land use in the landscape combined with natural forest protection/restoration, agriculture, and other activities. Furthermore, commercial afforestation as part of a landscape approach is recognised as contributing to LDN, with a 2019 UNCCD report noting its importance for poverty alleviation: www.unccd.int/publications/forests-and-trees-heart-land-degradation-neutrality

In addition to positive landscape-level impacts, such as reducing deforestation pressures on natural forests, it is also necessary to assess potential negative impacts of a plantation on the wider landscape, e.g. on water availability. Robust due diligence and post-investment processes, including rigorous monitoring, ensure that risks are understood, well managed, and closely monitored.

CONTEXT

West Africa experiences large-scale deforestation, often as a result of illegal logging, unsustainable agricultural practices, mining and poor land governance. Ghana has seen a net forest loss of 1,250,000 hectares/year between 1990 and 2010. The annual cost of land degradation in Ghana is estimated to be US $1.4 billion, or 6% of its GDP. In Sierra Leone, once a much-forested country, only 5% of intact forest is remaining.

BACKGROUND

In light of these developments, Miro Forestry, an afforestation company that operates forest plantations in Ghana and Sierra Leone, is managing a business that replants degraded lands and offers income opportunities to the communities living in these landscapes. In Ghana, these operations are in the Ashanti district, and in Sierra Leone in the Yoni chiefdom regions where local agricultural production tends to be largely at the subsistence level, with minimal infrastructure, and limited formal employment opportunities.

Since 2010, Miro Forestry has been supported by initial investments from development finance institutions including CDC Group and Finnfund. The company, which employs over 1,000 people across both sites, currently operates on 42,500 hectares of previously low-yielding grasslands and degraded forests, with 3,000 hectares of new plantation expected to be added each year. By operating FSC®-certified forestry plantations that grow commercial timber species through a mosaic structure, combined with the protection and regeneration of indigenous tree species, the area under management is expected to contribute to achieving LDN.

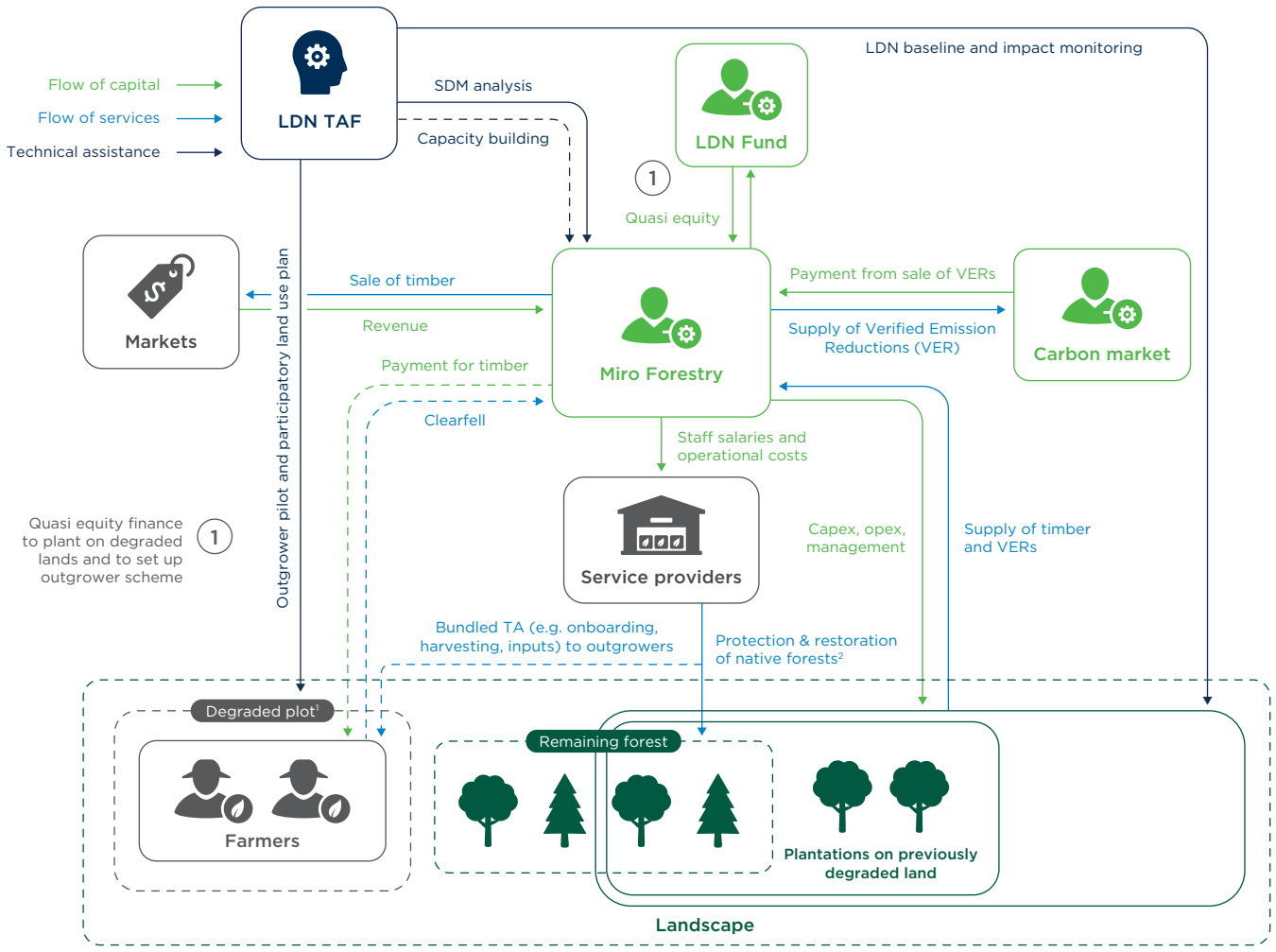
With respect to the land tenure context, Miro Forestry has developed a land access policy that meets international best practices, complies with local legislation and meets the social and cultural needs of the communities on and around the land. In Ghana, compartments of degraded forest reserve land are leased from the Forestry Commission and the Traditional Council (identified as the landowner). The lease agreement formalizes a partnership arrangement between the three parties, assigning specific areas of responsibility and reward to protect both the plantation investment and areas of cultural and natural resource importance through profit-sharing agreements and social investment. The process considers both the environment and the social wellbeing of individuals farming in the compartments that Miro Forestry leases.

In Sierra Leone, Miro Forestry leases land directly from landowners, which is endorsed by the chiefdom council representing the people and the landholding families. This lease agreement also seeks to build partnerships and share roles and responsibilities, with profit-sharing, employment opportunities, and support for social development. As land is leased directly from landowners in this case, Miro ensures that communities have access to a third-party civil society organization to provide support and ensure that free prior and informed consent (FPIC) is secured. Also, participatory and detailed village mapping and social development planning are undertaken as part of the process to reduce the risk of the lease impeding on the communities' sustainability.

FUTURE PLANS

Part of Miro's expansion is planned to be through a smallholder or community outgrower scheme. In general, successful smallholder schemes have been set up in Ghana, but these have primarily been in the palm oil, rubber and cocoa industries. In Sierra Leone, no successful large-scale outgrower schemes have been implemented to date. Particularly in forestry, smallholder growers have been hindered by limited access to markets, and lack of expertise and knowledge, which an outgrower scheme can help overcome.

FLOW OF CAPITAL AND SERVICES



1. The degraded plots comprise community land managed as a cooperative, individual land planted individually, and individual land leased to cooperatives/individuals.

2. Conceptual visualization to show that as part of currently managed plantations, some of the remaining forest is actively managed as conservation area (in Ghana, this is on the forestry reserves, and in Sierra Leone leased specifically for conservation).

BUSINESS MODEL

Miro Forestry operates FSC®-certified plantations that are a combination of commercial timber species and conservation areas. It has a small commercial-scale sawmill, rotary veneer mill and green charcoal production unit. It is now also in the process of building a plant for the treatment of wooden electricity transmission poles, more drying kilns, expanding the veneer mill to a large-scale ply mill, and an edge glue board facility. Plantation and maintenance costs during this time have been around US $2,300 per hectare, which is globally competitive.

At the same time, the timber market is growing; as also regional demand is projected to continue to outstrip supply, prices are projected to increase. Additional revenue is being sought through certification of Miro Forestry's plantations to the voluntary carbon standard, allowing for sale of the resulting credits.

With respect to smallholder and community inclusion in the business models, in Sierra Leone, revenue from land leases provides a valuable income to communities. Through a benefit-sharing system for local communities, 20% of standing tree value paid out in Ghana, with a comparable arrangement in Sierra Leone, ensure benefits contribute to landscape community income.

INVESTMENT

Purpose: The LDN Fund investment in Miro Forestry allows for an expansion of plantation sites in Sierra Leone and Ghana on degraded land.

Type and amount: quasi-equity investment of US $12 million, supporting a total financing round of up to US $54 million.

Duration: The investment lifetime is 11 years, and the LDN Fund is considering a second tranche of the investment specifically for scaling up the planned timber smallholder outgrower scheme.

RISK MANAGEMENT

Miro Forestry operates to high environmental and social standards, following FSC® and IFC performance standards and the VGGT. It is one of the first FSC®-certified plantations in West Africa. Key risks are managed as follows:

RISK	MITIGATION MEASURE
Payback time and investor exit	There is a growing secondary market for high quality plantations with demand from timber investors and pulp & paper companies, reducing exit risk for the Fund. Initial revenues are already expected from earlier plantings.
Long-term land leasing / 'social license to operate'	Long-term land leasing requires a strong 'social license to operate'. To ensure this, stakeholder consultation and participation is required from the start and following appropriate procedures as indicated by international guidelines (e.g. IFC performance standards). Once there is strong stakeholder buy-in to the project, it also helps a project developer in becoming the preferred lessor and employer thereby strengthening the stability of its business model.

TECHNICAL ASSISTANCE

The LDN TAF is supporting the project both pre- and post-investment.

The LDN TAF supported Miro Forestry in developing the initial stages of the smallholder scheme, by establishing a demand-driven project exploring a variety of smallholder models and pilot implementation with a limited number of smallholders (aim: 40 hectares planted in each country). This was accompanied by an SDM analysis showcasing the business potential for engaging with smallholder farmers in the wider landscape, not just for the company but for the smallholders. Based on the insights gained during the pilot, the smallholder scheme will be further refined in a follow-up technical assistance phase to enable the second tranche investment by the LDN Fund to take place and to allow full-scale implementation of the scheme.

Following the investment by the LDN Fund, the LDN TAF is currently designing a landscape-based technical assistance plan with Miro Forestry. This will support the development of a participatory land use plan (PLUP) to identify suitable locations for the community/smallholder outgrower timber plots/plantations, also in terms of landscape and conservation impact. It will enable the company, community and other stakeholders to improve management of natural resources in the landscape (especially related to water management and halting deforestation and biodiversity loss). Initially, this technical assistance support will be focused on Sierra Leone, with the potential to replicate in Ghana. Following the development of a PLUP, a landscape-wide multi-stakeholder action plan and implementation of a wider landscape strategy is considered.

Finally, the LDN TAF supports Miro Forestry in developing an LDN baseline to comply with its environmental and social action plan, as well as to practice adaptive management. Potential for a technical assistance package focused on internal skills development/capacity building to attract and maintain local talent at Miro Forestry is being explored.

PROJECTED IMPACT

LDN

42,500 hectares of land will be sustainably managed, contributing to LDN.
This includes:

- 7,500 hectares of conservation area as a buffer to protect ecosystems and biodiversity and for conservation purposes;
- 17,200 hectares of commercial timber already planted and 50,000 as landholding.

Gender

19% (24% in Ghana) of seasonal workers are women. This is considered high in the industry and Miro Forestry is actively driving a further increase in this percentage.

Climate

Sequestration of 5 million MtCO2eq and increased resilience to climate change.

Community livelihoods

An increase from ~100 jobs in 2014 to 1,500 jobs in 2019 has already taken place, thereby increasing income and opportunities in the surrounding communities. 33% of household income is currently derived from employment with Miro Forestry. Salaries are approximately 30% higher than the national minimum wage in both countries.

A further 1,500 new rural jobs are expected, mostly for people from local communities. When the outgrower scheme is rolled out at scale, it will also provide income-generating and alternative livelihood opportunities for local communities.

Forests

Sustainable species planting on degraded land surrounding set-aside forest reserves, helping to reduce pressure on remaining natural forests. Conservation of any remaining patches of native forest on the leased area, including active and successful enrichment through replanting campaigns with endemic none commercial trees.

THEORY OF CHANGE

IMPACTS

- Land Degradation Neutrality; greenhouse gas emissions reduced, removed and stored
- Rural jobs created for men and women
- More, stable and equitable income for local smallholder communities

OUTCOMES

- Improved soil organic carbon, better land cover and productivity
- Inclusive outgrower scheme, increasing supply for company and providing income opportunities and firewood/building materials for communities
- Improved landscape natural resource management, reduced deforestation
- Local agreements on inclusive landscape governance

OUTPUTS

- Planting on degraded land
- Growth in business, increased market opportunities
- Local employment opportunities
- More effective and efficient business operations
- Locations identified for community outgrower plantings and conservation impact through participatory approach

INPUTS

- LDN Fund investment to expand plantation area on degraded land
- Other (impact) investors
- Experience, resources and network of project operator
- Technical assistance linked to investment for:
  - Environmental and social impact data for adaptive management
  - Implementation of landscape approach
  - Setup of smallholder outgrower scheme
  - Company capacity building

KEY LESSONS FOR STAKEHOLDERS

- Designing a suitable, commercially interesting timber outgrower scheme is very context-specific and requires extensive stakeholder engagement, which takes time.
- It is essential to have stakeholder buy-in from the outset of the project.
- In countries where plantation forestry is not a prevalent industry, there are unique challenges associated with the pioneering nature of the business setup.

REFLECTIONS

The LDN Fund and linked TAF have now been operational for close to two years. During this time, five investments have been made by the LDN Fund and many more are in the pipeline. The LDN TAF has supported over 10 project partners pre- and post-investment to help close financing deals, reduce risks, and maximize social and environmental impacts. In this report, we highlight several of these projects in depth to provide examples of investments in sustainable land use, with the hope of inspiring others. Some of our key learnings so far include:

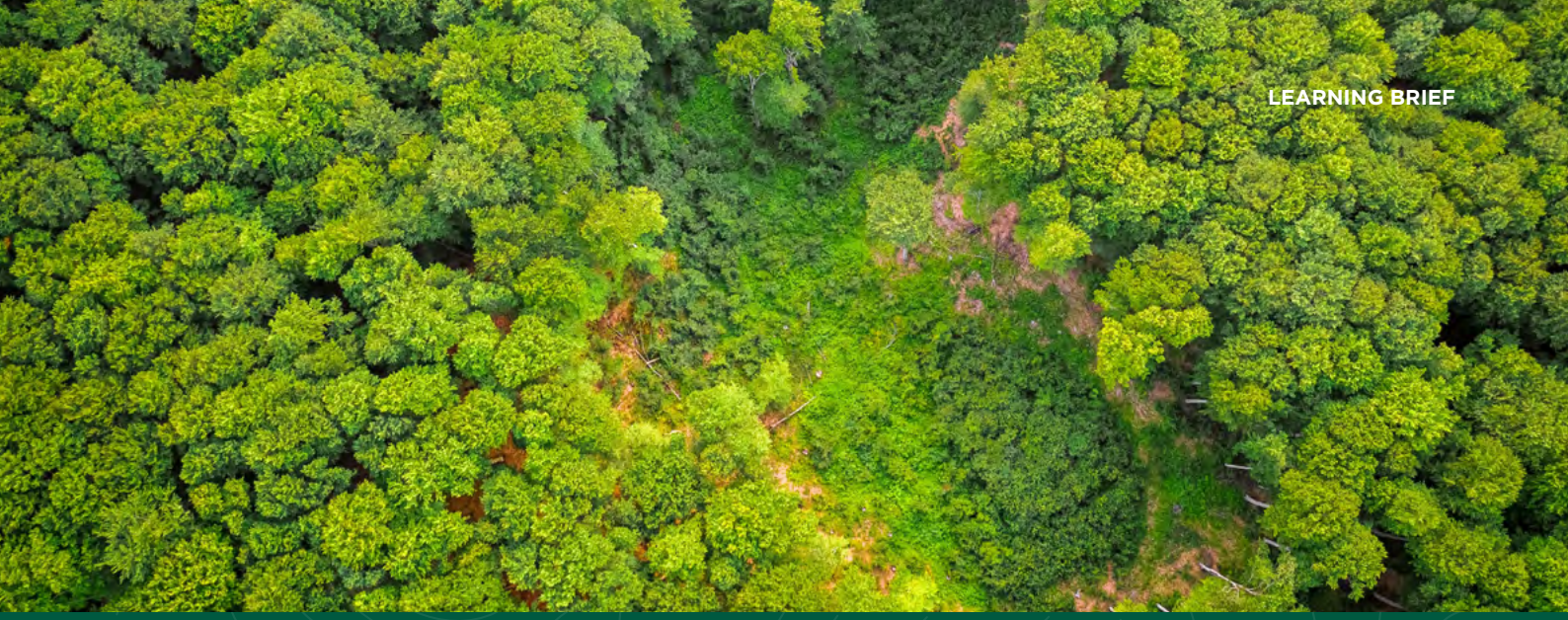
KEY PROJECT CHARACTERISTICS: COMBINING ESTABLISHED AND INNOVATIVE BUSINESS MODELS

Many of the successful scaleups of projects supported through investments by the LDN Fund and LDN TAF are relatively new players with innovative and inclusive approaches, for example by engaging with farmers through outgrower schemes, or scaling agroforestry systems. These projects often have not yet reached the point of break-even and therefore require a long-term investor that can afford to wait until they are cash-flow positive.

Direct partnerships with smallholder farmers and local communities, who remain stewards of their land, are made through provision of technical, financial and market support to create business propositions that empower them. Proper community engagement to support these partnerships requires time-consuming and costly field work. This work is generally funded by grant money (public/cooperation programs) and/or Series A equity ('seed money').

Projects that reach a stage that allows for private investment are typically building on proven business models, reducing commercial risks, but then adding in innovative elements in order to increase positive environmental and social impacts.

Developing a project to the point where it is ready for a substantial investment from a private sector investor such as the LDN Fund takes time (the average time between project inception and LDN Fund financing for these projects is nine years). For example, both Miro Forestry and Mountain Hazelnuts had already secured smaller funding rounds before an investment by the LDN Fund was made to support further growth and increase impacts.



ATTRACTING INVESTMENT: OVERCOMING COMMON CHALLENGES FOR FINANCING SUSTAINABLE LAND USE

Sustainable land use projects may offer low and volatile financial returns relative to the risk and complexity involved. The projects invested in by the LDN Fund typically overcome this challenge by combining different revenue streams (e.g. cash crops and carbon finance), sustainably increasing yields/quality, and adding value through processing. In some cases this is aided by technical assistance. Such diversification has a stabilizing effect on the returns.

Land restoration projects often require long time horizons, especially when operations are being scaled significantly. Many of the projects invested in by the LDN Fund have therefore found ways to accelerate cashflows. For example, by engaging and sourcing from farmers that have already started producing, by integrating faster-yielding crops into agricultural/agroforestry systems, or by starting operations and building a solid agronomy approach at farm-level before building partnerships with other landowners (e.g. communities or smallholder farmers).

Structuring a large enough project to attract international investors is a challenge in this sector. The projects invested in use innovative structures to engage enough smallholders to have already reached, or have demonstrated the potential to reach, a large enough size to be suitable for private investment. Outgrower schemes in particular are a solid option for engaging with communities and smallholder farmers in a business approach with large scaling potential, as currently being developed by Miro Forestry and Cacao Oro. Building on a proven approach and providing a solid analysis of the potential to scale are a way to make the potential total ticket size large enough to attract private impact investors.

Landowners such as smallholder farmers can be hesitant to enter long-term partnerships and risk long-term debt. To address these concerns, project operators need to have a good understanding of farmers' needs and often need to put a lot of time and resources into building trusted relationships. Having gathered information/data on smallholders that are being engaged makes it possible to develop innovative approaches to address situation-specific obstacles. For example, to reduce risk of unsurmountable debt, loans can be tailored to farmer cashflows and land is not used as collateral.

The type of projects the LDN Fund invests in support positive environmental and social outcomes, but often require financing solutions that are not readily available in the market. While this exemplifies the LDN Fund's additionality, as the Fund provides finance and strategic benefits in ways other investors or banks might not (e.g. longer tenors, longer grace periods, and more flexible repayment schedules), it also often means reaching deal closure takes time (8 months on average).

REDUCING RISKS AND MAXIMIZING POSITIVE ENVIRONMENTAL AND SOCIAL IMPACTS

Landscape approaches are often needed to help create stronger farmer and community links, develop clear and agreed-upon land-use plans (following FPIC/participatory approaches), and identify opportunities to maximize impact, especially concerning restoration and conservation of land. Most projects exhibited some degree of landscape-type approach when selecting planting areas.

All projects have a strong inclusion component, partnering with landowners (smallholders, communities etc.) in mutually beneficial relationships, following stakeholder engagement and buy-in procedures from day one. For example, Komaza partners with smallholder farmers throughout Kenya who receive inputs and training to plant and manage trees and receive a fair price at harvest. In another example, farmers in the Café Selva Norte project in Peru, that are members of the cooperatives invested in, are supported to transition to coffee-based agroforestry systems on their land providing income diversification benefits.

Tracking impact and using data plays a key role in reducing risks, driving business ambitions, and maximizing positive impacts. For example, all LDN Fund investees will be tracking their contribution to LDN, allowing them to not only report on progress and comply with environmental and social action plans, it also enables them to practice adaptive management, and, where possible, optimize positive environmental, social and financial returns resulting from restoring land.

Carbon markets as a form of payment for ecosystem services are picking up, as are a range of tools and approaches to demonstrate social and biodiversity co-benefits (e.g. Climate Community and Biodiversity certification and the IUCN standard for Nature-based Solutions). This presents new revenue options and can stabilize the cash-flow of agriculture/forestry enterprises. This trend is demonstrated by many LDN Fund projects now looking at how to value their carbon benefits and share those benefits with farmers and local communities.

INVESTMENT IN SUSTAINABLE LAND MANAGEMENT AND COVID-19

The COVID-19 crisis has revealed the vulnerability of our global supply chains. Urban workforces returned to rural areas with agricultural lands of low productivity and were faced with humanitarian crises in some regions. The spread of the pandemic has highlighted how degradation of natural ecosystems places the lives of urban and rural populations at risk. To achieve a green recovery from COVID-19 will require a global effort, and investments in sustainable land management have a key role to play.

Firstly, while the link between biodiversity loss, deforestation and the pandemic is complex, negative land use change is increasingly considered a key risk for future pandemics[5]. Aside from the core benefits the projects presented in this report demonstrate, this therefore provides another reason to restore land and prevent further land degradation.

Secondly, strengthening operators of land-based projects can support in adapting mitigating measures for a crisis such as COVID-19 to a local context, from health as well as business continuity plan standpoints. In many regions, protocols for action have been designed for a variety of business activities and production chains.

Thirdly, it is crucial to ensure local food security and food safety. While many projects in the LDN Fund's pipeline relate to cash crops (coffee, cocoa, wood, etc.), a local food security analysis is always carried out before investment in a project. Most of the time, projects do not produce a single crop only, but rather support intercropping and mosaic approaches. The LDN Fund and LDN TAF will continue to consider how investments can be further tailored to support local food security agendas while also achieving LDN.

As part of this ambition, the LDN TAF is working closely with project developers and the UNCCD to connect LDN Fund investment projects to national agendas. In addition, the LDN TAF builds on IDH's landscape approach, to see how impacts of an LDN investment project could be scaled up within a landscape, as exemplified in the case study on Miro Forestry.

COVID19 has brought new challenges to land-based operators and made it necessary for the LDN Fund and LDN TAF to adjust their engagement with project developers and investees. At the same time, the effects emphasize the importance of investments in sustainable land management and have created a new sense of urgency with the public- and private sector to form effective partnerships that can facilitate scaling of impactful projects.

5. See, for example: University College London. "Land use changes may increase disease outbreak risks." ScienceDaily. ScienceDaily, 5 August 2020. www.sciencedaily.com/releases/2020/08/200805124052.htm

GLOSSARY AND KEY ACRONYMS

Afforestation	The establishment of a forest or stand of trees (forestation) in an area where there was no previous tree cover.
Agroforestry	Collective name for land-use systems and technologies where woody perennials (trees, shrubs, palms, bamboos, etc.) are deliberately used on the same land-management units as agricultural crops and/or animals, in some form of spatial arrangement or temporal sequence.
Blended finance	Use of development finance to catalyze and mobilize commercial finance towards sustainable projects.
Debt financing	Loans from a bank or other financial intermediary that are repaid by the borrower over time, usually with interest.
ESG	Environmental, Social & Governance
Equity financing	Monetary contribution from investors (shareholders) who are looking to support the company and eventually sell their stake (ideally at a premium).
FSC®	Forest Stewardship Council.
FPIC	Free, prior and informed consent. FPIC is a specific right that pertains to indigenous peoples and is recognized in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). It allows them to give or withhold consent to a project that may affect them or their territories. Once they have given their consent, they can withdraw it at any stage. Furthermore, FPIC enables them to negotiate the conditions under which the project will be designed, implemented, monitored and evaluated. This is also embedded within the universal right to self-determination.
IDH	The Sustainable Trade Initiative.
IFC	International Finance Corporation.
Internal rate of return (IRR)	The interest rate at which the net present value of all the cashflows (both positive and negative) from a project or investment equal zero. It is one type of indicator used to evaluate the attractiveness of a project or investment.
Investee	An organization that receives investment.
Investment readiness	A project that has an investment proposal that meets the basic requirements of an investor, which allows the investor to make a positive decision to invest in the project.
KPI	Key performance indicator.
Land Degradation Neutrality (LDN)	A state whereby the amount and quality of land resources necessary to support ecosystem functions and services, and to enhance food security, remain stable or increases within specified temporal and spatial scales and ecosystems.
Land restoration	The process of building soil carbon, improving soil fertility, increasing above- and below-ground biodiversity, and improving land productivity.
Land tenure	The legal regime in which land is owned by an individual, who is said to “hold” the land.
LDN Fund	The Land Degradation Neutrality Fund.

MtCO2eq	Metric ton of carbon dioxide equivalent.
Natural capital	The world's stocks of natural assets, which include geology, soil, air, water, and all living things.
NTFP	Non-timber forest products.
Nucleus farm	A large farm unit (plantation, large-scale farm) which guarantees a certain minimum provision of raw material for a large-scale processing plant or other downstream aggregation use, while the other part of the raw material is procured from smaller farmers who are linked through outgrower arrangements to the nucleus.
Outgrower scheme	Systems that link networks of unorganized smallholder farmers with domestic and international buyers by establishing a contractual partnership between growers or landholders and a company for the production of commercial land-based products.
PLUP	Participatory land use plan. A locally developed land use plan developed through an interactive process in which local communities can discuss and determine how to manage the land and other natural resources in their locality.
Post-investment project	A project that has already received a positive investment decision from an investor.
Pre-investment project	A project that has not yet received a positive investment decision from an investor.
Project developer	Includes small- and medium-sized enterprises, larger private companies, social enterprises, and local banks.
SDG	Sustainable Development Goal.
Series A and seed funding	Series A refers to a company's first significant round of venture capital financing. 'Seed money' refers to a very early investment (usually as equity or convertible notes) and can be raised by a company for example during a Series A round.
SLM, Sustainable land management	The use of land resources, including soils, water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the long-term productive potential of land.
SME	Small- and medium-sized enterprise.
SOC	Soil organic carbon.
Soft loans	A loan with no interest or a below-market rate of interest. Such loans often also have lenient terms, such as extended grace periods and longer amortization schedules than conventional bank loans.
Technical assistance (TA)	Non-financial assistance provided by local or international specialists. It can take the form of sharing information and expertise, instruction, skills training, transmission of working knowledge, and consulting services, and may also involve the transfer of technical data.
Technical assistance provider	An organization or individual that delivers technical assistance to project developers as part of a contract signed with the LDN Fund Technical Assistance Facility (TAF).
TAF	LDN Fund Technical Assistance Facility.
Term loan	A loan for a fixed period of more than one year and repayable by regular instalments with interest.
UNCCD	The United Nations Convention to Combat Desertification.
VER	Verified emission reductions.
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security

IDH, the Sustainable Trade Initiative

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