



UNLOCKING SMALLHOLDER FINANCE FOR SUSTAINABLE AGRICULTURE **IN SOUTHEAST ASIA**



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Editor and Coordinator	Jonas Aechtner (WWF)
Authors	Szymon Mikolajczyk, Frieda Mikulcak, Ashley Thompson and Imogen Long (Climate Focus)
Design	Marijke Küsters (Studio Azola), Leo Mongendre (Climate Focus)
Production	Maro Ballach/WWF Germany

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Climate Focus, B.V.,
Van Diemenstraat 170
1013 CP Amsterdam
The Netherlands

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EXECUTIVE SUMMARY

An estimated 100 million smallholder farmers reside in Southeast Asia. These small-scale producers are at the forefront of the region's agricultural production, playing a leading role in the production of commodities such as palm oil, rubber, cocoa, and coffee, as well staple crops including rice, wheat and maize. Much of the agricultural output gain observed over the past three decades, however, has been driven by agricultural expansion.

Supporting these farmers with the adoption of sustainable farming practices is critical for disentangling commodity agriculture from environmental degradation. This requires both short and long-term finance tailored to the specificities of the business models behind these practices. Demand for smallholder finance in the broader region currently stands at USD 100 billion annually; but less than one-third of this demand has currently been met.

Despite the region's undercapitalised smallholder financing segment, a growing number of collaborative partnerships between financial service providers, agribusinesses, public funders and civil society organisations are testing new ways of catalysing capital flow to smallholders. These partnerships — in combination with digital agricultural solutions — are unlocking new service delivery models, strengthening the business case for investments in sustainable agriculture.

In this report, we lay out the business case for smallholders to transition to sustainable farming practices, and offer recommendations for actions that civil society organisations and financial service providers can take to facilitate this process. To support these recommendations, we also outline approaches to structuring smallholder finance schemes, and showcase lessons learned from international case studies that feature novel approaches to financing smallholder activities.

Recommendations to civil society organisations

Civil society organisations (CSOs) are often locally anchored, maintain close relationships with local stakeholders, and offer a good understanding of smallholders' needs and local implementation constraints. As such, they can play an important enabling role by delivering the following support:

- **Identify investment opportunities** that will contribute to an economically resilient smallholder transition. This includes preparing groundwork research that evaluates the costs and benefits of sustainable land use options, and providing market intelligence to assess the credit-worthiness of smallholders.

- **Identify implementation partners.** Multi-stakeholder collaborations are critical to delivering the financial and non-financial services needed to unlock business models in sustainable agricultural production, and require a lead entity that can manage these relationships. CSOs can play an important role in bringing together the relevant actors.
- **Create public-private financing partnerships.** Public resources can be used to de-risk smallholder investments, and crowd-in commercial funding. CSOs can help to bridge the information gap that exists between practitioners on the ground and public funders, and support lead entities through the financial structuring and fundraising process.
- **Promote the use of digital technology and data analytics.** With rapidly increasing mobile-broadband penetration across Southeast Asia, there is growing opportunity for digitally enabled smallholder business models. CSOs can help establish the necessary connections between digital technology providers and lead entities, creating fertile ground for innovative partnerships that service smallholders.
- **Provide technical assistance to smallholders and financiers** throughout the various stages of the investment cycle. This can include providing agricultural extension services to smallholders, and supporting financiers with understanding the risks and opportunities of agricultural investments. CSOs can also assist in the aggregation of smallholders into farmers, organisations, allowing farmers to consolidate supply, benefit from economies of scale, and de-risk the engagement for off-takers and funders alike.
- **Help implement monitoring for environmental and social performance.** Funders, certification standards and payment for ecosystem services schemes will require investees to periodically report performance and impacts. CSOs can assist with the design and implementation of monitoring activities, and can deliver positive impact assurance to off-takers and funders.



Recommendations to financial service providers

Financial service providers can pave the way for smallholder investments by closely engaging with investees throughout the investment cycle, identifying avenues to address key investment risks, and taking a customer-centric approach to financing farmers by delivering the following support:

- **Clarify the conditions of investments**, which can include risk-return expectations, targeted environmental and social outcomes, and the terms and conditions of financing. This will help investees prepare investment proposals that meet minimum engagement criteria, and allow for the selection of the right de-risking strategies.
- **Design green financial products** that are tailored to the needs of smallholders, or the organisations they belong to. Financiers should collaborate closely with investees to design financing products offering terms and conditions that reflect smallholders' repayment capacities, and be receptive to the innovations introduced by digital service providers.
- **Support the professionalisation of investees**, including their internal financial management processes. Financiers have a clear incentive to ensure that their financial resources are managed effectively, generate attractive returns and deliver Environmental, Social and Governance (ESG) impacts.
- **Share lessons learned** to better design impactful smallholder financing schemes. Financiers can collaborate with CSOs to develop 'blueprints' for tested investment models, which can help guide practitioners in the development of bankable smallholder programmes.
- **Integrate the use of ESG frameworks in the investment decision process.** Financiers should recognise that use of ESG data in the investment decision process has to become standard practice and be mainstreamed into the financial sector's modus operandi. This can help unlock new funding sources for sustainable investments going forward.



1. INTRODUCTION

Southeast Asia has developed into the world's leading exporter of agricultural commodities, including palm oil, rubber, and coffee. While this commodity boom has spurred economic development, it has also driven deforestation and biodiversity loss in the region. Entire ecosystems are under threat, putting the livelihoods of rural communities that depend on them at risk.

Smallholder producers play a major role in the region's commodity production. Supporting these farmers in the adoption of sustainable agricultural practices is critical to disentangle commodity agriculture from environmental degradation.

1.1 SETTING THE SCENE

Southeast Asia has developed into the world's largest exporter of a number of agricultural commodities. Indonesia and Malaysia combined produce the vast majority of the world's palm oil; Viet Nam holds second place among global coffee producers; and production of natural rubber is led by Thailand, Indonesia, and Viet Nam.¹ The rise of commodity agriculture has had a major positive impact on economic development, poverty reduction, and, arguably, food security in the region.

Agricultural output from the region has been rising steadily over the past three decades, growing on average by around two percent annually.² While investments in infrastructure and innovations in information and communication technologies have contributed to this, the major driver of growth in agricultural output has been area expansion. Between 1980 and 2014, agricultural land area increased by nearly 40 percent across the region.³ Agricultural land in Indonesia, Myanmar and Viet Nam expanded by more than half, while in Cambodia the share doubled.⁴

Southeast Asia is one of the world's major deforestation hotspots

This agricultural expansion has come at a tremendous environmental cost. Southeast Asia lost about 80 million hectares⁵ of forest over the period 2005 to 2015, and the region continues to have one of the highest rates of deforestation of any major tropical region.⁶ In the comparably higher-income countries of Indonesia and Malaysia, much of the expansion in agricultural land resulted from the conversion of biodiversity-rich tropical forests into oil palm monocultures (Box 1). In other countries, rubber and aquaculture have been leading drivers of ecosystem degradation (Box 2). This continued environmental degradation is affecting the ability of landscapes to provide ecosystem services that are critical for regional food security, such as crop pollination, soil stabilisation, water provision, and climate regulation.⁷ As such, unsustainable agricultural practices are not only impacting natural habitats; they are also undermining long-term agricultural productivity.



Box 1: Palm oil production as a major driver of deforestation



Around 90 percent of the world’s oil palm trees grow across Malaysia and Indonesia.⁸ Oil palm plantations cover a significant share of these countries’ arable land, occupying approximately 20 percent and 70 percent of total cropped area in Indonesia and Malaysia, respectively. In these areas, oil palm plantation expansion into forested lands causes habitat destruction to some of the most biodiverse tropical forests on our planet. In Borneo alone, an estimated 18.7 million hectares of old-growth forest were cleared and replaced with oil palms in the period between 1973 and 2015.⁹

In Indonesia, smallholders control nearly half of the total plantation area, a share that is expected to reach 60 percent by the end of this decade. In Malaysia, smallholders cultivate around one-third of all plantations. While some smallholders linked to large buyers have access to formal sources of finance and good quality inputs, many independent farmers are disconnected from these service providers. The result is that the productivity of smallholders is lower compared to larger-scale agribusinesses (up to 35 percent per hectare¹⁰), which reduces profitability and subsequently drives further expansion into natural habitats.

Box 2: Impact of rubber production and aquaculture on the region’s forests



In many parts of Southeast Asia, rubber plantations have expanded into new areas, altering local ecosystems in addition to spurring deforestation. Northeast Thailand, Myanmar, Cambodia, Laos and Viet Nam have all witnessed forest destruction to enable the establishment of new rubber plantations, with an estimated 70 percent of new plantations established between 2003 and 2014 being linked to the conversion of former forest land. In Cambodia, Laos and Myanmar much of the rubber production has been driven by larger-scale plantations on government-endorsed concessions. In contrast, rubber production in Thailand and Viet Nam is mainly driven by smallholders.¹¹

In addition, Southeast Asia is home to just under half of the world’s mangrove forests.¹² In coastal regions, aquaculture activities have been expanding into mangrove ecosystems. Between 2000 and 2012, an estimated 100,000 hectares of mangroves were lost, with aquaculture (fish and shrimp farming) accounting for about one-third of this loss.¹³ If current trends persist, forgone mangrove ecosystem benefits — such as flood protection and water purification — are estimated to reach USD 2.2 billion annually by 2050.¹⁴

An estimated 100 million smallholder farmers reside in Southeast Asia.¹⁵ These farmers — occupying two hectares of land each at most — are at the forefront of the region’s agricultural production, playing a leading role in the production of commodities such as palm oil, rubber, cocoa, and coffee, among others. They also dominate the production of staple crops such as rice, wheat and maize. And while the gross domestic product (GDP) share of the agricultural sector in the regional economy has been falling, the sector maintains a particularly important position in the economic and social development of Southeast Asian countries, employing around 40 percent¹⁶ of the region’s workforce (Table 1). This implies that regional efforts to enhance the sustainability of agricultural supply chains need to recognise smallholders as critical agents in this transition.

Table 1: Importance of smallholder farmers in selected Southeast Asian countries

Country	Number of smallholders ¹⁷	Portion of smallholders in total population (%) ¹⁸	Contribution to agricultural GDP (%) ¹⁹
Cambodia	3.7 million	22	16.3
Indonesia	38.9 million	14	12.5
Malaysia	1.6 million	5	7.3
Philippines	11.8 million	10	8.1
Thailand	12.7 million	18	6.2
Viet Nam	24.4 million	25	14.3

Note: Consolidated data for Brunei, Laos, Myanmar and Timor Leste could not be retrieved.



1.2 UNLOCKING FINANCE FOR SUSTAINABLE PRODUCTION

Despite occupying small plots, smallholders contribute collectively to the rapid land area expansion taking place across Southeast Asian countries. One reason for clearing land is low productivity per hectare, which farmers compensate for by planting more crops on cleared land – often illegally through slash-and-burn agriculture. Another common trigger for land expansion is farms approaching the end of their life cycle, encouraging farmers to move to new plots in the absence of financial and technical assistance targeted at supporting farm renovation or rehabilitation.

Supporting smallholder farmers with the adoption of sustainable farming practices is therefore critical for disentangling commodity agriculture from environmental degradation. In addition to delivering environmental gains, this transition also has the potential to drive regional poverty alleviation and improved food security by contributing to increased farm productivity and more resilient supply chains. But the often-remote locations that these farmers inhabit is a key impediment to their access to information, technology, output markets, and affordable capital.

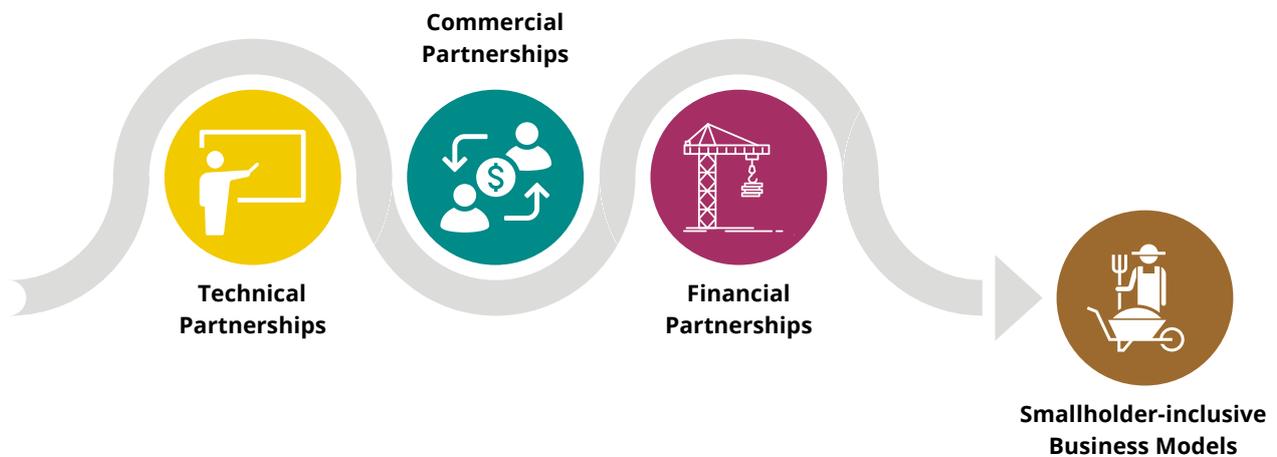
Smallholder demand for agricultural finance is estimated at USD 100 billion per year

It is estimated that smallholders in the broader region of South and Southeast Asia require agricultural financing of around USD 100 billion annually.²⁰ While the demand for smallholder finance continues to grow, current financing flows are unable to catch up, at present meeting less than one-third of these needs.²¹ This represents a major risk for smallholders, who in the absence of formal sources of finance often have no option other than to borrow money from informal lenders – often at exorbitant cost – introducing the danger of falling into debt spirals. This also presents a major missed opportunity for financial service providers, especially considering smallholders' potential to become an important future customer base not only for agricultural loans, but also for other financial services.

Despite the region's fragmented and undercapitalised smallholder financing segment, a growing number of collaborative partnerships between investors, off-takers, development institutions and civil society are testing new ways of catalysing capital flow to smallholders and their transition to sustainable production methods. Technological advances in the fields of digital finance and big data analytics are unlocking new service delivery models in the agricultural space, strengthening the business case for investments.²² Given the high degree of informality and information asymmetry in the sector, the heterogeneity of farmers, and wide array of stakeholders that require involvement, it is the holistic, data-driven, and farmer-centric approaches to financing smallholders that are best equipped to face the myriad of challenges associated with smallholder financing.

Figure 1: Enabling smallholder-inclusive business models

To cater for this, multi-stakeholder collaborations are critical to deliver the financial and non-financial services needed to unlock business models in sustainable agricultural production (Figure 1). These partnerships are also necessary to help to account for the impacts and trade-offs between different land uses, the management decisions on the provision of ecosystem services within a landscape, and to ensure that the environmental and social impacts of funded actions are safeguarded.



As part of this collaborative effort, technical partnerships can play a critical role in helping practitioners overcome key barriers to implementing successful financing programmes, delivering targeted support both to smallholder farmers and financial service providers to maximise the financial, environmental and social impacts of funded activities. Commercial partnerships between value chain actors and other relevant stakeholders will be necessary to establish a predictable and profitable route to market, giving investors the confidence that smallholder economic value can be effectively commercialised. Finally, financing partnerships that de-risk agricultural finance by blending different sources of capital and applying tailored risk mitigation strategies may be necessary to improve financial returns to a level that matches investor expectations.

And while this clearly points to a multipartite effort, at the centre of this puzzle there is a need for a leading institution — a producer cooperative, a microfinance institution, an off-taker, a civil society organisation — to seize ownership and lead putting all the pieces together.

1.3 OBJECTIVE

The objective of this report is to present the opportunities that the transition to sustainable, smallholder-driven production systems can offer.

Specifically, we aim to:

- define the **business case** for transition and identify entry points for smallholder finance;
- present approaches to **structuring smallholder finance** schemes and de-risking investments;
- showcase lessons learned from international **case studies** that feature novel strategies to financing smallholder activities; and
- offer **recommendations** to financial service providers and civil society organisations (CSOs) on business model development, financial mechanism design, and the implementation of smallholder finance schemes.

We hope this work will help guide financiers, CSOs and other actors working towards sustainable rural development in fostering green finance solutions in support of smallholder-inclusive business models.



1.4 STRUCTURE OF THIS REPORT

The remainder of this report is structured as follows:

Chapter 2 introduces the business case for the adoption of sustainable land management practices by smallholders. The chapter introduces a typology of smallholder farmers, reviews critical challenges smallholders face when considering the transition to sustainable practices, and outlines business models that can help unlock financing from investors.

Chapter 3 lays out the elements of smallholder finance schemes, featuring key financial actors, their rationale for engaging with smallholders, and the type of financial products they deliver. We then outline strategies for de-risking smallholder investments, and explain how market-based incentive schemes can help strengthen smallholder business models. The chapter concludes by offering a categorisation of smallholder finance delivery models.

Chapter 4 presents international case studies where green finance and financial innovation have enabled smallholders to invest in sustainable agriculture. The case studies explore the financial structures behind the investments, the selected service delivery models, and the economic, environmental and social impacts achieved.

Chapter 5 concludes by offering a roadmap to smallholder finance, where we offer recommendations to financiers and CSOs on smallholder business model development, the structuring of smallholder finance schemes, and the implementation of smallholder programmes.

2. THE BUSINESS CASE FOR SUSTAINABLE AGRICULTURE

The adoption of sustainable agricultural practices by smallholder farmers offers opportunities for commercially viable investments that can strengthen the resilience of agricultural value chains, improve farmer livelihoods and food security, and contribute to local environment conservation or rehabilitation efforts.

This chapter introduces the business case for the smallholder transition to sustainable agricultural production, explaining who smallholders are and how they operate, defining common barriers to financing rural communities, and outlining how the shift to sustainable farming can enable inclusive smallholder business models.



2.1 OVERVIEW

The adoption of sustainable agricultural practices by smallholder producers can strengthen the resilience of agricultural supply chains and improve the quality of produce, reducing supply chain-related business risks for off-takers. As changing weather patterns, groundwater depletion, and soil erosion are compromising agricultural productivity and increasing procurement costs across the region, there is a strong financial incentive for agribusinesses to support their suppliers in the shift to sustainable farming methods.²³ Engagement with unsustainable practices also creates a major reputational risk, which can result in consumer concerns, bad publicity, and damage to brand equity.²⁴ From the farmers' perspective, the transition can help improve livelihoods and ensure food security by increasing long-term productivity, diversifying income streams, and increasing resilience to climate change.²⁵ It can also open up new marketing avenues, presenting opportunities for securing higher market prices.²⁶ Investment in sustainable agriculture therefore offers a clear win-win opportunity: off-takers stand to benefit from a more stable supply of quality products, while smallholders can improve their livelihoods by benefitting from more predictable incomes and a stronger integration into local and global value chains.

Investment in sustainable agriculture offers a win-win opportunity

The transition to sustainable agricultural practices by smallholder farmers requires multi-stakeholder collaboration to overcome the myriad of challenges associated with smallholder agricultural production. Access to finance, inputs, and markets are specialised services that are best delivered by dedicated providers. These may include financial institutions, producer cooperatives, value chain actors, civil society organisations, government agencies, and specialised fintech and agtech companies. To attract investment into sustainable agriculture, collaboration between these actors is needed to de-risk smallholder investments and enable the design of land use interventions that can generate both financial returns and positive environmental impacts.

In this chapter we introduce the business case for the smallholder transition to sustainable agricultural production. The chapter starts with a characterisation of smallholder producers, followed by a review of common structures under which off-takers and smallholders collaborate. The chapter then moves on to define the barriers to smallholder financing, summarising key barriers to both supply and demand. Next, the business case for sustainable farming is defined, explaining how the shift to sustainable farming can enable smallholder-inclusive business models. We conclude by reviewing strategies for overcoming common barriers to uptake, and provide examples where recent innovations in the agtech space are delivering promising solutions.

2.2 CHARACTERISING SMALLHOLDERS IN SOUTHEAST ASIA

Southeast Asia is home to around 100 million smallholder producers.²⁷ While definitions of smallholder agriculture vary, and data on farm size and distribution are incomplete across the region, it is clear that there are marked differences both between countries and within countries regarding smallholder characteristics. In Indonesia and Viet Nam, for example, smallholder farming plots of less than 1 hectare dominate, whereas in Thailand farmers typically manage between 2 and 5 hectares.²⁸ Besides the size of the plot managed or owned (Box 3), many other criteria can be used to segment smallholders, including both on and off-farm incomes, assets owned or access to savings.

Despite the lack of a generally accepted definition of smallholders, the categorisation of farmers is important in the design of business models for sustainable practices and the financing strategies behind them. Differentiating between farmer types can help financial service providers better evaluate associated credit risk, and tailor their support to farmers' specific needs and capacities. To this end, a distinction can be made between the following types of smallholders:²⁹

- **Subsisting.** This is the poorest segment of smallholder farmers whose food security depends on their own crop production. These farmers supplement their agricultural activity with income from day labour, often on other farms. Typically, they own very small plots of land, have limited access to markets and technologies, and have little to no savings.
- **Commercialising.** These farmers consider agriculture to be a commercial operation, from which they obtain the bulk of their income. Commercialising farmers maintain relationships with value chain actors, and may operate under off-take agreements. The profit potential of commercialising farms is higher, often also due to higher average land holding sizes.
- **Diversifying.** These farmers have a multidimensional income strategy. While some may earn income from agriculture, the primary income source is often employment in other sectors. These farmers may offer alternative forms of collateral and their diversified income streams can help ease household cash flows.

Smallholders are dynamic, and can pursue different goals and livelihood strategies over a lifetime. They can transition from subsistence to commercialisation, diversify their incomes off-farm, or shift away from farming activities altogether. Also, within the commercialisation segment, smallholders can take on different positions, ranging from managing a small plot to shifting away from primary agricultural production to pursuing entrepreneurship-based livelihood strategies (e.g. provision of agricultural

services like inputs or processing).³⁰ The choice of livelihood strategies will be guided by the variable opportunities or challenges faced by farmers, and their respective levels of resource endowment or livelihood assets.

While subsistence farming persists (particularly in the more remote areas of Southeast Asia), there is a trend of increased commercialisation among smallholders in the region. The economic opportunities associated with commercialisation are incentivising smallholders to expand their cultivation area, to increase the use of synthetic inputs, and to specialise in selected cash crops, driving soil degradation, loss of agro-biodiversity, and local deforestation. This unsustainable resource use undermines the long-term resilience of these very supply chains, putting at risk the livelihoods of farmers. If this commercialisation can be enabled through sustainable resource management practices, enhanced productivity — and profitability — does not need to come at the expense of natural capital loss.

Depending on the smallholder typology, their asset base, and available income streams, different financing conditions may be needed to help in the transition to sustainable farming practices. Smallholders that face ‘soft’ constraints (including access to markets or limited financial literacy) will offer a higher potential to turn production systems into profitable enterprises than smallholders that are impacted by ‘hard’ constraints (such as marginalised, small plot sizes with insecure property rights).³¹

Box 3: Land tenure and access to formal financial services

Widespread tenure insecurity presents a major barrier to effective smallholder finance, and the transition to sustainable agricultural practices. Proof of land ownership is often a requirement imposed by formal funders, who use farmland as collateral in the event of a loan default. In addition to this, farmers are less likely to engage in long-term investments on land that does not formally belong to them, as they are at risk of displacement. As progress in formalising land rights remains slow in many Southeast Asian countries, farmers often have no option other than to borrow money from local loan sharks at exorbitant interest rates. This creates a risk of falling into debt spirals.

Initiatives aiming to digitalise movable collateral such as crops, livestock, receivables, and inventories can be one effective way of helping to overcome the traditional reliance on land as a form of collateral. Ecosystem services captured under payment for ecosystem services schemes (e.g. carbon) can also serve as collateral for larger landscape-level investments (see Case Study 2, Chapter 4). Finally, educating lenders on the cash flow potential of agricultural investments is critical, as a strong business case can help avoid the need for collateral altogether.

2.3 ORGANISATION OF SMALLHOLDER PRODUCTION

The extent to which smallholders will have the possibility to access finance and influence the types of agricultural practices they are engaged in will in part depend on the structure under which they operate (if any), and how predetermined the route to market is. Across Southeast Asia, there is a wide range of collaborative arrangements between smallholders or farming communities and off-takers, connecting producers and off-takers at different stages. These relationships can be categorised in the following models:

Farmer-owned enterprises. Farmer-owned enterprises are formally organised cooperatives or incorporated business structures for smallholders to pool their production capacity and facilitate access to market. Cooperatives can support their members with access to finance, inputs and knowledge, and represent the interests of smallholders when negotiating off-take agreements with buyers. Cooperatives may also have capabilities to offer value-added services such as warehousing and processing, to which individual smallholders would otherwise not have access. Where cooperatives have experience with financing, these enterprises can become an interesting partner for financiers or agribusinesses looking to support deeper smallholder inclusion in the supply chain.

Contract farming. Contract farming, or out-grower schemes, relate to pre-agreed supply arrangements between buyers and smallholders. Typically, smallholders grow and deliver agricultural produce in a specified quality and quantity at an agreed date. Buyers are typically large agribusinesses (traders and processors), who commit to supplying upfront inputs such as credit, seed, fertilisers and technical advice in exchange for commodities as specified in the agreement. Provided inputs may be charged against the final purchase price. There is a wide range of contract farming arrangements, spanning from informal verbal purchase agreements to highly specified out-grower schemes around large estates (Box 4). For contract farming to serve as a vehicle for improved smallholder livelihoods, off-take arrangements need to be fair and transparent, and avoid exploitative relationships caused by unequal power relations.

Contract farming remains the most popular and widely practiced agribusiness model across Southeast Asia, both for domestic and international markets, with multinational firms such as Nestlé, Olam, or Carrefour typically sourcing through such arrangements. As off-takers often have financial resources, they can play an important role in delivering support to smallholders transitioning to sustainable forms of production. This may not only increase the resilience of their supply chain, but can also allow corporates to improve sustainable supply chain management.



Management contracts. Management contracts (or tenant farming) include agreements in which smallholders (tenants) are contracted to cultivate or manage farmland owned by a third party, typically an agribusiness or a more commercialised farmer. Management contracts can differ in terms of the incentives smallholders receive — either a fixed income, a share of profits, or a share of production output (sharecropping). While less common compared to contract farming, sharecropping is applied across Southeast Asia, in particular in areas where land tenure regimes are weak. Sharecropping can be beneficial especially for smallholders that do not possess sufficiently large plots, but typically lack the support structures provided by farmer cooperatives. As such, incentivising and facilitating sustainable land use methods may be more challenging in these farming structures.

Box 4: Nucleus estate model

Nucleus estate models combine contract farming with their own estate plantations and production facilities. Such estates depend on out grower schemes, in which the estate is surrounded by smallholders who produce on their own land and deliver the produce to the estate. These structures often impose purchase monopolies linked to a certain minimum volume of produce, deliver tailored technical assistance programs, and implement monitoring and supervision throughout the production process. Nucleus estate models are frequently observed in Indonesia, where larger palm oil agribusinesses control farm plantations close to independent smallholders. For these types of contract farming arrangements to serve as a vehicle for inclusive business models, they need to avoid exploitative relationships and ensure that off-take arrangements are fair, transparent, and account for the different negotiating powers between the two parties involved.³²

Land concessions. Land concessions refer to arrangements where domestic or international private enterprises are granted long-term leases by governments to exploit land for agricultural development. Typically, land under concessions is turned into industrial monocultures, as in the case of palm oil or rubber, where their potential for smallholder inclusion and job creation is limited at best. Land concessions have been criticised for their impact on social cohesion since in many cases, land is allocated where local communities have held customary and hence insecure land rights for generations, leading to evictions and conflicts over land ownership. Moreover, land concessions are said to be major drivers of deforestation in the aforementioned countries.³³ Given the existing link between this farming model and accelerated environmental degradation, opportunities exist for restoring and rehabilitating destroyed habitats through targeted sustainable land use investments. These will require the buy-in of concessionaires, government authorities, and local communities alike to deliver a lasting reversal in unsustainable land use practices.

Family-owned enterprises. Smallholder-based enterprises of small or medium size typically start as family businesses, using personal savings and credit. Since these enterprises evolve from a local context, they are often embedded within the local community, and may therefore have an advantage regarding the organisation of smallholder supply. Depending on the size of the company and its place in the commodity chain, agricultural enterprises can serve as off-takers from independent farmers or cooperatives, but can also be connected to larger-scale agribusinesses. Enterprises can also act as investees, serving as intermediaries between investors and smallholders. Yet, just like individual smallholder producers, these small business structures face a number of constraints: bureaucracy can discourage their formalisation, and lack of capacity and resources may limit their ability to ensure safe and good quality products, or to pursue certification to receive higher-value premiums. This hampers access to sustainable finance, limiting the potential to encourage more sustainable land use practices within the supply base without external support.

The way that smallholders access markets, inputs, and financial resources differs depending on their production structure. This also impacts the bargaining power of farmers, and the degree of choice they have to adopt alternative production methods or crops. This has implications for the design of smallholder business models in sustainable farming, and the extent to which smallholders and the organisations they supply will require external support (both financial and technical) to help realise the transition to sustainable forms of production.

2.4 BARRIERS TO SMALLHOLDER FINANCE

Estimates suggest that smallholder farmers across Southern and Southeast Asia collectively require around USD 100 billion per year to finance their agricultural needs.³⁴ There are different reasons as to why financial service providers are slow to address this looming funding gap. These relate to the barriers that financiers face when evaluating investment opportunities in sustainable land use, as well as the obstacles smallholders encounter when attempting to access finance. Table 2 and Table 3 summarise these commonly observed barriers, distinguishing between supply-side barriers (relating to the financier side) and demand-side barriers (reflecting issues smallholders face).

A holistic approach to smallholder financing is required to overcome supply- and demand-side barriers

Given the diversity of issues withholding the flow of agricultural finance to smallholders, a holistic approach to smallholder financing engaging all affected stakeholders is required to overcome the observed barriers to both supply and demand. For this to work in practice, stakeholders have to be convinced that there is a clear value proposition — or business case — in sustainable farming. Only then will smallholders adopt new practices, companies engage in sustainable production programmes, and financiers commit resources to support the cause.



Table 2: Supply-side barriers to financing smallholders



Lack of aggregation

Farmer aggregation is critical for a number of reasons. It allows smallholders to better manage the supply of inputs; coordinate market outreach activities; negotiate credit and contracts; or lobby policy makers. If successfully organised, such forms of collective action can also address key barriers related to high transaction costs, entry to higher value markets, and access to business development services. However, the level of farmer organisation in Southeast Asia varies widely dependent on the commodity and region. This means that engagement with many farmers currently occurs on a one-to-one basis.³⁵ This 'last-mile' service delivery is costly, and seen as a risk by financiers.



Low productivity and returns

Primary agricultural production by smallholders is often well below potential. Depending on the crop, yields can be as little as 20 percent of the potential yield compared to industrialised farms — a difference which has been termed the 'yield gap'.³⁶ While this concept is disputed and, ultimately, wider social and economic factors shape farmer decision-making on land use,³⁷ reasons for lower productivity often include lack of the right equipment, limited technical knowledge about productivity enhancing farming practices, or inadequate access to input and output markets. Lower smallholder productivity translates into high perceived risk for financiers and a reluctance to engage with smallholders. This risk perception is further amplified in the case of newly introduced agricultural practices.



Lack of credit history

Lack of historical credit data, combined with limited collateral options, discourages financiers from engaging with smallholders. Only one-in-ten rural adults in Southeast Asia possess a formal savings account.³⁸ Farmers may also hold (informal) debts with other financiers, which are not always traceable. In addition to this, smallholders often lack proof of secured land tenure, and may not own any other assets that could serve as collateral.



High degree of fragmentation

The amount of finance required by individual smallholders is often too small to justify the costs of managing and administering such finance, and continued fragmentation of plots further complicates matters. On average, farmers in Southeast Asia hold around three parcels per household, with per capita arable land equating to 0.12 hectare.³⁹ Diminishing farm sizes have important implications because relatively large, consolidated farms typically have the capacity to be more efficient and productive by optimising mechanisation and by realising economies of scale through the adoption of modern technologies. Fragmented farms, in turn, may also lead to fragmentation of production activities, which both reduces overall productivity (and therefore profitability) and the amount of finance required per customer.

Table 3: Demand-side barriers to smallholders seeking to access finance



Exclusion from banking

Formal participation in the financial system is low for smallholders, and most farmers do not own bank accounts. Mobile money penetration rates in Southeast Asia, while growing rapidly, also vary considerably between different regions, and are not yet widely used by smallholders. This exclusion from formal financing means informal routes are often the only option.



Lack of affordable finance

Where financing is made available to smallholders, it often comes at high cost. Smallholders are susceptible to high interest rates, with monthly rates offered by village-level lenders often exceeding 10 percent.⁴⁰ Such exuberant interest rates constrain growth and can result in a vicious debt cycle.



Lack of tailored financial offerings

Credit products are often not sufficiently tailored to farmer needs.⁴¹ Loan repayment schedules often fail to recognise agricultural cash flow patterns, and do not offer flexibilities that farmers may require. Furthermore, the short-term nature of most smallholder loan products makes it impossible for farmers to engage in longer-term investments that generate returns over time, such as farm renovation or rehabilitation.



Informal land holdings

Lack of land tenure — aside from presenting a collateral issue for credit suppliers — presents a significant demand-side barrier. Uncertainty over how long a smallholder will be present on the land makes long-term financial decision making difficult. This can especially act as a barrier to transitioning to sustainable practices that require longer payback periods.



2.5 THE BUSINESS CASE FOR SUSTAINABLE FARMING

The adoption of sustainable agricultural practices offers opportunities for commercially viable investments that can strengthen the resilience of agricultural value chains, improve farmer livelihoods and food security, and contribute to local environment conservation or rehabilitation efforts. As such, these investments can deliver both tangible and intangible benefits, which accrue over longer horizons. This creates a win-win opportunity for both off-takers and smallholders, and offers investors the potential to generate financial returns while contributing to positive environmental and social impacts.

From an off-taker's perspective, the overall business case for incorporating smallholders into value chains stems from the farmers' competitive advantage in more effectively supplying particular products to a buyer compared to other supply routes. Since many cash crops, such as coffee and cocoa, are typically hand-picked and labour-intensive, a clear advantage lies in the abundance and comparably low cost of labour that smallholders can provide.⁴² In addition to this, smallholders possess a strong understanding of local farming conditions, which is valuable in the context of geographically spread supply chains. These factors make it cost-effective for off-takers to collaborate with smallholders, rather than invest in farmland directly. The shift to sustainable agricultural production presents off-takers with an opportunity to stabilise supply chains. Sustainable farming can enhance the resilience of production to weather extremes and agriculture-related risks such as pests, rainfall and temperature fluctuations. Agribusinesses that are dependent on specific sourcing areas for their supply will therefore be motivated to invest in the resilience of their supply chains. This is especially relevant in the context of a changing climate, considering the high susceptibility of Southeast Asia and its rural residents to climate change impacts.

In addition to supporting predictable supply, sustainable agricultural practices also minimise environmental and social impacts — and thereby any associated reputational risks.⁴³ Notably, agribusinesses active in the production of commodities such as palm oil, coffee and rubber have come under public scrutiny in recent years, pushing them to commit to sustainability goals such as achieving zero-deforestation supply chains (Box 5). Linked to this is the growing demand for sustainably sourced products, driving the expansion of the market for certified products both internationally, as well as in domestic markets, where consumer demand is evolving. All these factors present a clear incentive for off-takers to support smallholders with the adoption of sustainable farming practices.

Box 5: Zero-deforestation commitments

The production of agricultural commodities drives about 70 percent of tropical deforestation.⁴⁴ Increasing public pressure over the last decade has prompted many agribusinesses to adopt sustainability policies addressing the deforestation risk in their supply chains. This has been particularly visible in companies linked to major forest-risk commodities such as palm oil, soy, beef, and cocoa.

Policies vary in strength and scope, but often take the form of ‘zero-deforestation commitments’. These represent pledges to eliminate deforestation associated with the production, trading or purchasing of commodities within a company’s supply chain. To date, the palm oil supply chain has benefitted from the largest share of commitments, which may be explained by its high public profile relative to other forest-risk commodities: a number of prominent media campaigns in the recent decade led to a considerable increase in public awareness of palm oil production methods. In 2019, 60 percent of the 350 most influential companies in the global palm oil supply chain were reported to have made some kind of deforestation commitment.⁴⁵

By contrast, commitments in the rubber sector — linked to some of the most threatened forests in the world — remain limited. Tyre manufacturers globally purchase over 70 percent of the world’s rubber, yet the first company commitment to address deforestation in its supply chain came only in 2016.⁴⁶ Such variation highlights the necessity for both corporate action and public pressure in addressing deforestation-risk in commodity supply chains.

For companies to effectively implement policies and achieve their targets, engagement with smallholders is crucial — particularly for those sourcing palm oil and cocoa, which are predominantly cultivated by smallholders. However, company engagement with farmers is currently hindered by unclear land tenure and the difficulties in delivering technical support programmes that are adequately tailored to the needs and capacities of smallholder farmers. Civil society organisations can play an important role in helping companies to overcome these barriers in order to implement their commitments at ground level. They can also help to hold companies to account, encouraging them to report on progress.



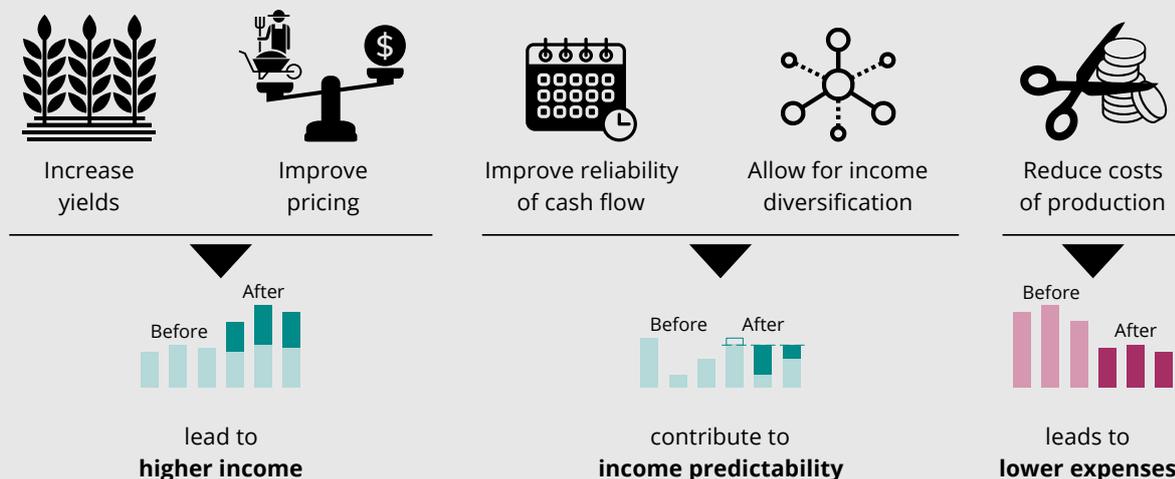
The transition to sustainable practices can help farmers achieve more productive and resilient farming systems

From a smallholder's perspective, the transition to sustainable agricultural practices can help farmers achieve a more productive and resilient farming system. It can also strengthen the profitability of production systems by opening up possibilities for farmers to enter into more favourable contractual relationships with off-takers. More specifically, sustainable farming can help farmers achieve a number of objectives:

- **Increase yields** by transitioning to better growing practices that improve quality and consistency while reducing environmental impacts.
- **Improve pricing** by allowing farmers to produce high-quality crops and pursue certification opportunities.
- **Improve reliability of cash flows** at farm level by increasing crop resistance to stress factors such as pests and help adapt to the impacts of climate change.
- **Allow for income diversification** to avoid overdependence on any single buyer or market outlet, and hedge against potential market downturns for particular products.
- **Reduce costs of production** by enabling farmers to shift away from dependence on synthetic inputs.

All of these benefits provide smallholders with an opportunity to improve livelihoods from their farming operations and secure greater food security. As such, the poverty-alleviating potential of stronger integration in sustainable supply chains makes the adoption of sustainable farming a cornerstone of inclusive business models.

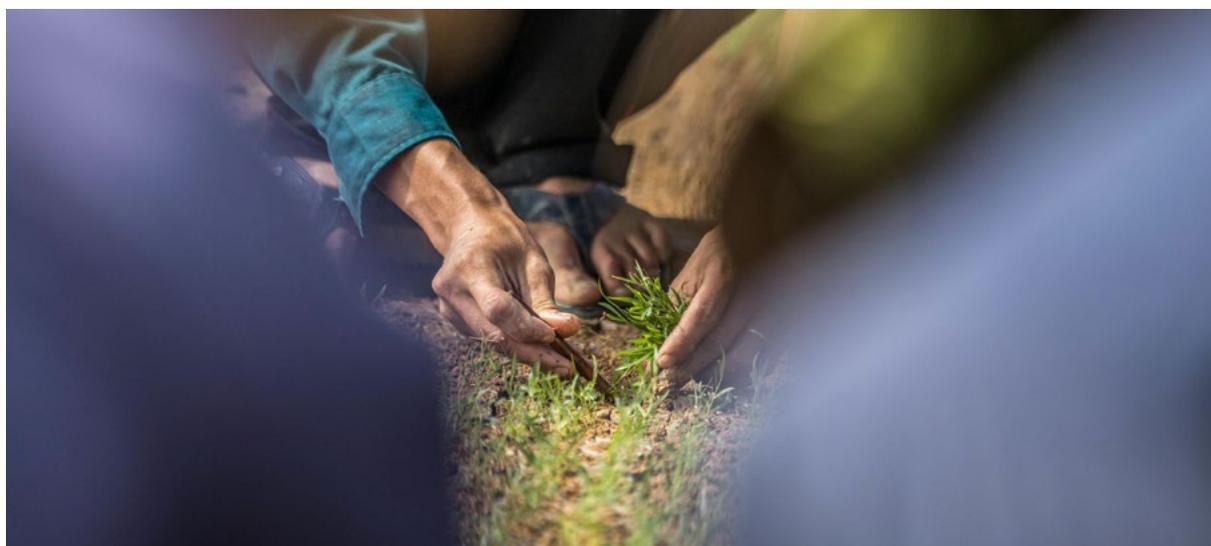
Figure 2: Business case for sustainable farming practices for smallholders



2.6 OVERVIEW OF SUSTAINABLE AGRICULTURAL PRACTICES

One common reason for smallholders' expansion into new areas is the declining productivity per hectare caused by the long-term application of unsustainable production methods, which farmers compensate by planting more crops on cleared land. Another common cause for land expansion is farms approaching the end of their life cycle, encouraging farmers to move to new plots to establish new plantations. Sustainable agricultural practices, ranging from 'quick-fix' solutions like intercropping or low/no tillage to longer-term efforts around rehabilitation and renovation, offer possibilities for farmers to safeguard productivity without clearing new areas of land.

The type of sustainable practices most suitable for smallholders to engage in are influenced by many factors. These include the nature of the smallholder – off-taker relationship, the current agricultural production systems that farmers are using, existing landscape features (e.g. topography, water bodies), and biophysical and climatic factors. Moreover, the adoption of practices will depend on the socio-economic and cultural characteristics of smallholders, as well as their links to markets and hence potential for specialisation and commercialisation.⁴⁷ These factors make it challenging to stipulate a set of measures without considering the specific context and the agricultural product in question. Moreover, different approaches to implementing some of these agriculture practices can be pursued, ranging from strategies that favour intensification of production systems to agro-ecological practices that avoid synthetic input use altogether (Box 6).



Box 6: New approaches to sustainable agriculture and food systems

In recent years, several innovative approaches to sustainable agriculture and food systems have emerged. These can broadly be clustered into two main categories:

- sustainable intensification of production systems and related approaches (including climate-smart agriculture, nutrition-sensitive agriculture, and sustainable food value chains) that generally involve incremental transitions towards sustainable food systems; and
- agro-ecological and related approaches (including organic agriculture, regenerative agriculture, bio-diversity-friendly farming, and permaculture), which some experts consider to be more transformative.

The first category is based on the premise that, to address future challenges, the productivity per unit of land must increase without expanding the existing agricultural land base. The informed use of synthetic inputs and improved crop varieties can contribute to this, as long as the intensification efforts are combined with strong forest protection policies to avoid the risk that farmers clear land to farm even more.

The second category centres around ecological principles and emphasises the need to reduce or eliminate altogether synthetic inputs to protect ecosystem functions and local biodiversity.⁴⁸



Figure 3 illustrates how select sustainable agricultural practices can contribute to strengthening the business case for smallholder production.

- **Farm renovation** can improve productivity. Newly planted trees will produce higher yields, which improve farm profitability and reduce the likelihood that farmers clear land on which to grow crops.
- **Crop certification** — not a practice in itself but more a strategy that builds on sustainable production methods — allows farm produce to qualify for premium pricing.
- **Cover crops** can increase crop resistance to stress factors such as pests and help improve climate resilience, thereby improving the long-term reliability of farm-level income.
- **Intercropping and agroforestry** can diversify revenue streams throughout the growing season and thereby help stabilise farmer incomes.
- **Low or no tillage** practices help maintain soil structure and leave crop residue on the soil surface, both of which increase the soil’s ability to absorb water, and in turn reduce soil erosion and runoff. These benefits can reduce costs of production by sustaining soil health and enabling farmers to shift away from synthetic inputs.

Table 4 offers a more comprehensive overview of common sustainable agricultural practices that can apply to the smallholder context. A distinction is made between different types of interventions, including i) crop management practices; ii) resource management practices; and iii) landscape-level practices. For each of the selected practices, an evaluation of the measure’s economic, environmental and social impacts is presented, highlighting the broad range of benefits that these practices can offer.

Figure 3: Business case for selected sustainable farming practices

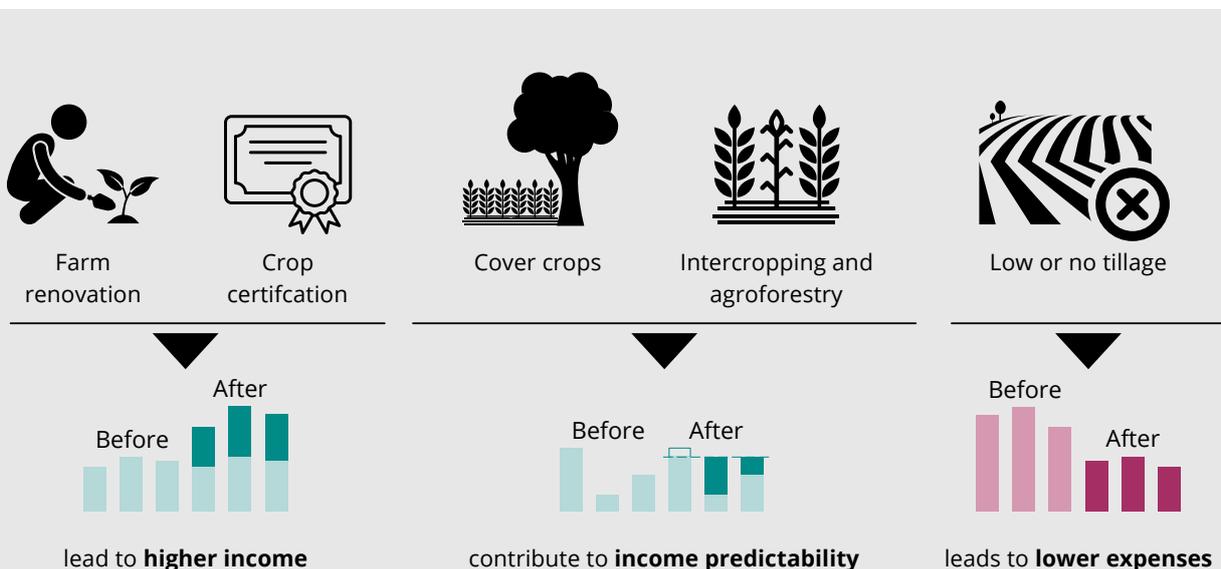


Table 4: Examples of common sustainable agricultural practices and associated benefits

	Economic						Environmental					
	Increased revenues			Reduced costs								
	<i>Increased yields</i>	<i>Improved reliability of income</i>	<i>Diversification benefits</i>	<i>Improved resilience</i>	<i>Less agrochemical inputs</i>	<i>Improved pest resistance</i>	<i>Less labour</i>	<i>Reduced GHG emissions</i>	<i>Reduced use of chemicals</i>	<i>Improved biodiversity</i>	<i>Water/soil conservation</i>	<i>Improved pollination</i>
Crop management practices												
Heat/drought tolerant varieties	●		●		●	●					●	
Intercropping	●	●	●	●	●	●			●	●		●
Crop diversification		●	●	●	●	●			●	●	●	●
Crop rotation		●		●		●			●	●	●	
Cover crops				●		●			●	●	●	
Resource management practices												
Manure or compost	●	●				●		●	●		●	
Low/no till				●		●		●			●	●
Drip irrigation				●		●					●	
Alternating wet/dry rice management				●				●			●	
Retaining native vegetation				●		●				●	●	●
Landscape-level practices												
Extending fallow periods						●	●			●	●	
Agroforestry	●	●	●	●	●	●			●	●	●	●
Flood and erosion control	●			●		●					●	
Riparian buffers				●					●	●		
Woodlots, meadows									●	●		

2.7 OVERCOMING BARRIERS TO UPTAKE

Despite the clear business case for sustainable agriculture, there is a range of barriers withholding off-takers, smallholders and investors alike from engaging. Aside from the barriers of financing smallholders described earlier in this chapter, there is a myriad of technical (e.g. lack of skills, access to information), behavioural (e.g. traditions, social factors) and organisational issues (e.g. lack of aggregation, access to markets) that impede widespread adoption of these measures.

For these reasons, the transition to sustainable agricultural practices needs to be supported by technical, commercial and financial partnerships that can deliver the right inputs, access to market, and financing channels. These service delivery models should be designed to fit the structure within which smallholders operate, and be tailored to the needs and capacities of farmers and the organisations they belong to. A multipartite approach to service delivery is therefore necessary, leveraging a network of specialised institutions (including public, private, and civil society) to deliver the right form of support.

Typically, these institutions will look for ways to centralise the provision of services. This role could be taken on by producer cooperatives, local agricultural enterprises, bank agents or civil society organisations. Alternatively, services can also be channelled through value chain actors, such as traders or agribusinesses. This may apply particularly in out-grower schemes, where the off-taker agrees to purchase certain volumes from smallholders and may have the ability to directly reach out to contracted farmers. To reduce risk of failure, extension services should be integrated within models that incentivise a shift from short-term transactional behaviour to longer-term cooperative relationships. This is important as the improvement of smallholder farming systems can take many years. Besides, it takes time for farmers to recognise the value of partnering up with an off-taker, and for the trust between farmers and firms to develop.

Innovations in service delivery models are unlocking new ways of reaching smallholders

Innovations in service delivery introduced by solutions developed by fintech and agtech ventures are starting to unlock new ways of reaching smallholders in areas where mobile phone usage and internet penetration is high. Specifically, recent years have seen a proliferation of start-ups in Southeast Asia that are using technology to facilitate the delivery of financial solutions (e.g. pay-as-you-go financing, insurance products, saving platforms) and other value chain interventions (e.g. sharing agronomic advice, digital market places). These innovations are helping smallholders optimise farming activities and generate sustainable incomes, and promise to shape a new generation of inclusive business models in the smallholder space.

Table 5 lists examples of potential strategies for overcoming common barriers to the uptake of sustainable farming practices, distinguishing between financial, technical, behavioural and organisational barriers. Where applicable, examples of solutions developed by agtech companies that offer promising solutions are provided.

Table 5: Examples of strategies for overcoming barriers to uptake



Lack of investment in centralised agricultural infrastructure

Type of barrier **Approach to overcoming barrier**

Financial

Practitioners should look for opportunities to centralise the provision of agricultural infrastructure solutions that add value to smallholder activities, including irrigation schemes, market feeder roads, processing facilities, warehouses, or market places for direct sales. Centralised physical infrastructure can help farmers collectively achieve economies of scale. In their absence, the costs of processing, storing and transporting produce might be prohibitively expensive, impacting the competitiveness of smallholders. Physical investments can be supported by digital innovations targeting agri-logistics solutions. For example, the COVID-19 pandemic has spurred the development of new primary storage and processing approaches, de-risking operations in a value chain phase that is often considered to be the weakest link in food production.



Poor technical knowledge about farming practices

Technical

Smallholders that are supported by well-trained and organised extension staff are more likely to improve their productivity, maintain stable supply and enhance their own incomes. Extension programmes that focus on the provision of inputs but do not invest resources in adequate capacity building and practical training run the risk of farmers applying them incorrectly, or using them on subsistence crops rather than the intended cash crops. As smallholders will have different needs, a one-size-fits-all approach traditionally observed in government extension platforms will not be effective at supporting the transition to new practices. Agtech companies are entering this market by developing solutions that facilitate the provision of farmer training, for example through digital agricultural advisory services.



Unclear land tenure security for farmers

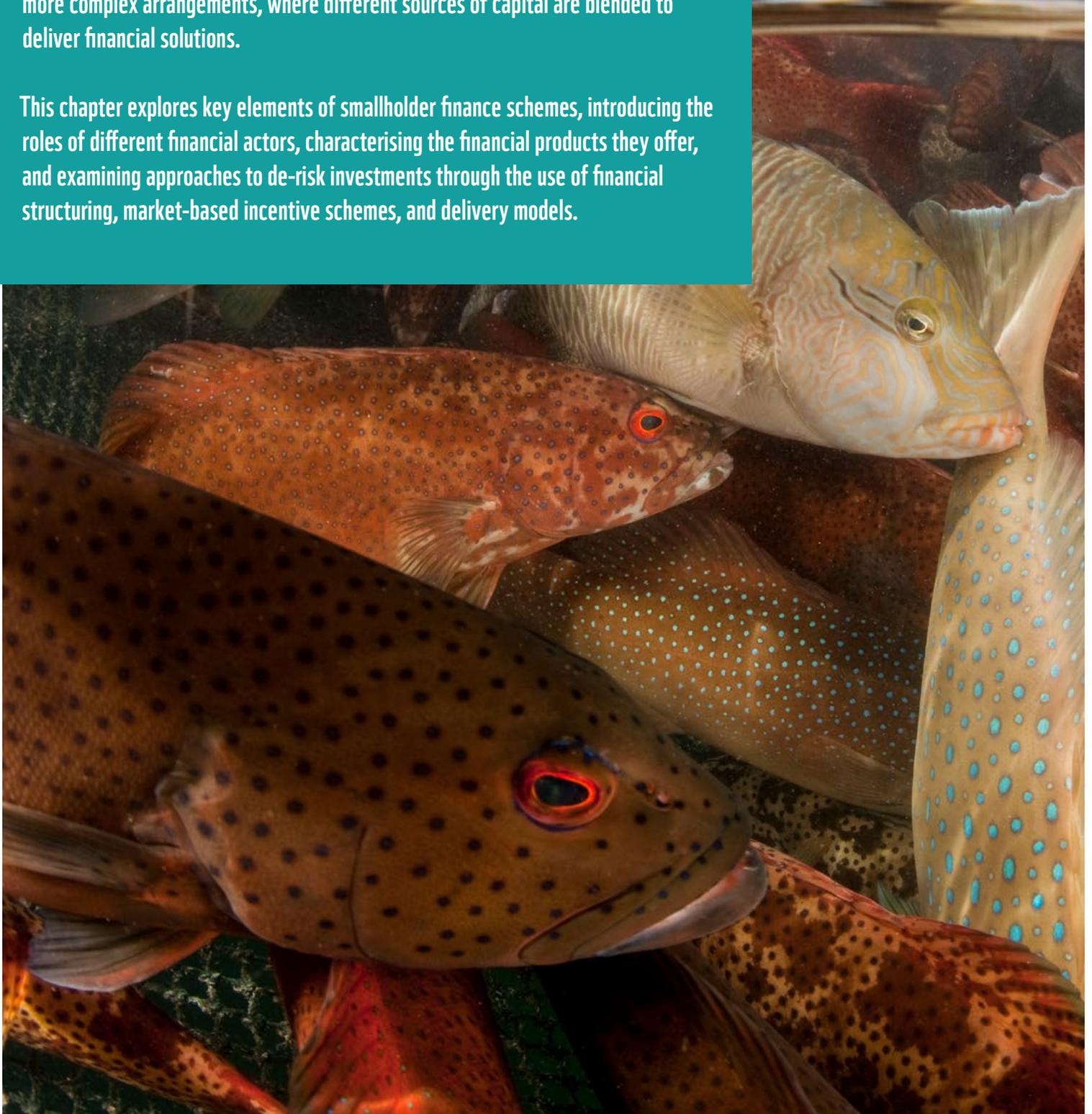
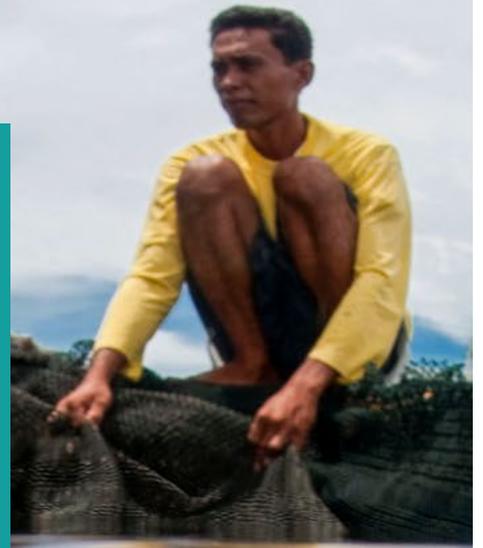
Farmers are more likely to consider investing in land they own, knowing that they will be able to earn back their investment over time. Practitioners active in areas where smallholder land tenures are unresolved should look for opportunities to engage local authorities to improve the tenure system. A growing number of start-ups are looking at how blockchain can assist governments in digitising land records, and how this can help solve land rights conflicts and tackle fraud. Legalisation of land titles conditional upon farmers transitioning to sustainable agricultural practices could be integrated in these collaborative efforts to incentivise smallholders to transition to sustainable practices.

Type of barrier	Approach to overcoming barrier
 <p>Unclear incentives for long-term cooperation</p>	<p>Behavioural</p> <p>Practitioners should strive to develop service delivery models that form mutually beneficial relationships to minimise the occurrence of side-selling. Models that can deliver long-term price stability for smallholders, educate farmers on the benefits of such an arrangement, and offer direct settlement, can help build trust and reduce the perceived attractiveness of side-selling. Off-takers could also consider offering flexible contracts where smallholders have the option to side-sell a portion of their produce to other buyers, but the off-taker commits to buying all the produce if available. The provision of reward structures benefiting farmers that become long-term supply partners can be another way to incentivise smallholders to remain loyal to one off-taker, and forego opportunistic behaviour.</p>
	<p>Organisational</p> <p>In regions where smallholders own exceptionally small average plots of land that are geographically dispersed, delivery of extension services may be prohibitively expensive when farmers are approached individually. Practitioners need to carefully map the locations of smallholders and their plots to inform a strategy that aggregates farmers into sufficiently large groups to handle the uptake of services efficiently. The accumulation of knowledge on a group level can furthermore facilitate knowledge access and sharing between the members, which can reinforce the impact of the extension services. A growing number of agtech start-ups are developing digital platforms that are facilitating ways of aggregating farmers and distributing farm produce from point of collection to consumption centres. These innovations can help push down the costs of aggregating smallholders.</p>
 <p>Limited aggregation of smallholders</p>	<p>Smallholders will be more likely to adopt new measures if they know that the new practices will improve yields and facilitate access to markets.</p>
	<p>Practitioners can support smallholders by:</p> <ul style="list-style-type: none"> (i) evaluating data on markets linked to local, national and/or regional food systems to establish clear sources of demand for the marketed produce; (ii) implementing mechanisms that allow smallholders to access timely and transparent market and price information; (iii) promoting procurement procedures that introduce fair and inclusive offtake agreements; and (iv) ensuring access to market by bringing in long-term offtake agreements with anchor buyers. By collectivising the supply side, smallholder programmes can leverage the bargaining position of farmers, increasing the value farmers receive for their produce. Developments in the agtech space relating to the setup of digital marketplaces can offer solutions to initiatives targeting smallholder inclusion.
 <p>Lack of functioning output markets</p>	

3. CATALYSING SMALLHOLDER FINANCE

To unlock smallholder investment opportunities in sustainable land use, multi-faceted financing strategies are needed. Some may build on existing relationships between smallholders and local financial service providers. Others will depend on more complex arrangements, where different sources of capital are blended to deliver financial solutions.

This chapter explores key elements of smallholder finance schemes, introducing the roles of different financial actors, characterising the financial products they offer, and examining approaches to de-risk investments through the use of financial structuring, market-based incentive schemes, and delivery models.



3.1 OVERVIEW

Smallholder financing remains highly undercapitalised. Short-term financing for smallholders, which relates to working capital loans and small asset finance loans for pre- and post-harvesting activities, is to a degree (around one-third of agricultural needs) serviced by existing value chain actors and formal financial institutions. Long-term financing that could enable activities with a multi-year investment horizon is practically absent, with only two percent of the current financing needs being met.⁴⁹ It is especially this lack of longer-term financing tailored to the specificities of land use investments that prohibits smallholders from transitioning to sustainable forms of agriculture.

Multi-faceted financing strategies will apply to unlock smallholder investment opportunities in sustainable land use

As presented in Chapter 2, sustainable land use business models can offer viable investment opportunities for investors. However, given the high heterogeneity of smallholders and their agricultural practices, limited agronomic and environmental knowledge, and the general lack of experience in land use investments by financial institutions, the perceived risk associated with smallholder investments remains high. This also often leads to the general assumption that all sustainable land use investments generate low financial returns. Holistic approaches to financing smallholders combining the different strengths and capacities of various stakeholders are required to reduce the entry barriers for investors, and, where needed, de-risk the investment case for smallholder investments.

This chapter explores key elements of smallholder finance schemes. We start with a categorisation of relevant financial actors, and outline strategies for financing smallholders by summarising the different financing products and risk management approaches that can be used to support investments. This is followed by an overview of market-based incentive schemes that can improve the bankability of smallholder business models, including certification and payment for ecosystem services schemes. We conclude by featuring a series of smallholder finance delivery models that serve as examples of how investment capital can be channelled to smallholders.

3.2 SMALLHOLDER FINANCE ACTORS

Smallholder finance strategies may range from direct lender-borrower relationships (e.g. cooperative to smallholder) to structures involving multiple financiers (e.g. where different sources of funding are pooled through a dedicated fund that on-lends capital to smallholders).

Understanding the synergies that exist between the various finance actors is important when evaluating the viability of financing structures for smallholder investments.

A number of factors will influence the type of financing arrangement that will be best suited to support target investments. There may be financial considerations for teaming up with a partner institution; for instance, a development finance institution may be in a position to tolerate a higher exposure to risk and could offer credit guarantees. There may also be practical reasons for financial actors to partner up; for example, an international social lender may need to collaborate with a local microfinance institution to deliver ‘last-mile’ financing. The diversity of smallholder types, their financing requirements, and the risk-return profile of the targeted investments imply that each smallholder finance scheme will be unique and will need to match available financial resources with the capacities of investees and the needs of smallholders.

We start this chapter by providing a typology of financial actors that can be involved in smallholder finance schemes, specifying the roles these actors can play in smallholder programmes, and the type of financial support they may be able to deliver. For each funder type, examples of financiers active in Southeast Asia are provided. As introduced above, many of these financiers will not have a direct relationship with smallholders, with investments often being channelled through financial intermediaries such as microfinance institutions or producer cooperatives. Refer to Section 3.5 for a more detailed description of common finance delivery models in the context of smallholder investments.

National governments (state banks)

Governments can facilitate the financial inclusion of smallholders by introducing enabling regulatory and fiscal policy frameworks that can encourage investments in sustainable land use. Governments can also directly de-risk investments in smallholders by funding readiness activities and contributing to programme implementation by channelling resources through state-owned banks.⁵⁰ Financial resources can come in the form of grants, concessional loans, or guarantees, and originate from national

Role

Development finance, creation of enabling environment

Form of Support

Grants, guarantees and loans, through investees

Financing terms

Highly concessional

budgets earmarked for land use or be delivered through international financial cooperation. Grants — at times reimbursable or convertible to loans — can be offered to support readiness activities, technical assistance programmes, or deliver direct subsidies to smallholder initiatives that contribute to improved economic resilience and better livelihoods. They can also be used to promote and build an adequate enabling environment that puts in place policies and regulations to incentivise sustainable land use and facilitate the flow of green capital. Concessional loans can support direct investments or cover certain operating costs, and can be instrumental in leveraging other sources of co-funding. Governments can also indirectly support sustainable land use investments by providing fiscal incentives in the form of taxes or levies, which may incentivise or disincentivise actions that favour or go against sustainable land use, respectively.

One example of a national fund supporting smallholder investments is the Agricultural Guarantee Fund Pool, a government programme managed by the Land Bank of the Philippines. The programme provides guarantees to unsecured loans made by lending institutions to smallholders. By covering up to 85 percent of the loan exposure, the initiative incentivises banks to scale up the flow of formal credit to smallholders.⁵¹

Non-governmental institutions

Role

Mobilising finance, creation of enabling environment

Form of Support

Grants and sometimes loans, typically through investees

Financing terms

'Soft', highly concessional

Non-governmental institutions, including CSOs and foundations, can play an important role in fundraising for, or directly financing, smallholder investments. These organisations typically offer grant finance targeted at enabling activities that may not be funded by commercial actors. Examples of these activities include market building initiatives, financial intermediation, access to markets, development of commercially viable business models, and support with aggregation. Some organisations will also have the capacity to offer loans that can directly target smallholders or be channelled through investees, such as partner microfinance institutions or producer cooperatives. Returns on such forms of financial support are often negative due to small loan amounts (USD 50 – 300) and high transaction costs.⁵²

Non-governmental organisations can also help leverage additional capital by providing specialised support. They can help investors and other financial service providers to better understand and manage risk, value additional revenue stream such as payments for ecosystem services, identify investment opportunities, conduct financial intermediation and support the design of blended finance structures (Box 7). WWF, for example, has been active for many years in the development of trust funds that mobilise and channel finance for landscape restoration and conservation initiatives,

including from donations, grants or loans. Other civil society organisations active in conservation finance across Southeast Asian countries include the International Union for the Conservation of Nature (IUCN), Conservation International (CI), and The Nature Conservancy (TNC).⁵³

Box 7: The benefits of blended finance

Blended finance relates to the use of catalytic capital from public or philanthropic sources to increase private sector investment in sustainable development.⁵⁴ Smallholder finance remains an underserved segment, and blended finance structures supported by grants, guarantees, subsidised insurance schemes, concessional loans and equity can help de-risk investments in smallholders. The blending of different sources of capital can serve a number of purposes:

- **Improve returns.** Not all elements of smallholder investments will have a risk-return profile that matches the requirements of investors. Commercial lenders and equity investors targeting certain minimum profitability levels may for example not be in the position to support technical assistance programmes, despite their essential role in enhancing productivity. Donor finance can play an important role in taking on investments in these essential, non-revenue generating activities.
- **De-risk investments.** De-risking smallholder finance schemes through the use of guarantees and first-loss structures can catalyse private investment, while reducing the average cost of capital. This, in turn, has a strong effect on improving the bankability of business models. Using public resources to safeguard private investments can be a powerful tool to increase investor confidence and crowd-in commercial capital.
- **Enable diversification.** One investor may not be able to deliver complete funding needs, and could seek to spread investment risks with partners. By diversifying their investment portfolio, funders are able to reduce exposure to individual investments. ‘Anchor investors’ are often needed to incentivise other financial institutions to follow suit and close the remaining financing gap.
- **Offer specialised support.** Business models for smallholders will require tailored financing solutions. To deliver these, investors can complement each other not only financially, but also through the unique expertise that they bring in. This may include commercial know-how brought in by dedicated impact investors, new market entry opportunities delivered by corporate off-takers, or technical assistance supported by donors.

Community-based lenders (informal lenders)

Role

'Last-mile' financial service delivery

Form of Support

Microloans, directly to smallholders

Financing terms

Informal, short-term, often high-cost

According to global estimates, approximately one-quarter of all rural agricultural finance delivered to smallholders is channelled through informal and community-based lenders.⁵⁵ Lenders falling under this category are highly diverse, and vary in terms of size, asset ownership, and membership of kin or ethnicity based networks, all of which affect transaction costs, size, loan tenors and interest rates.⁵⁶ Moneylenders – the most common type of informal lender – may relate to any individual with spare credit, seeking to make a profit. Microloans are offered on a one-to-one basis, often at extortionately high interest rates. Village Savings and Loan Associations (VSLAs), Rotating Savings and Credit Associations (ROSCAs) are group-based schemes that offer a higher degree of autonomy.

In VSLAs, farmer groups save together, take loans from deposited savings and share generated interest by loans according to rules and regulations made by group members. ROSCAs operate in a similar way, but mobilise savings and extend loans from members on a rotating basis. Benefits of these types of informal finance channels include closer financier-farmer relationships (which allow for increased trust on both sides), greater flexibility in borrowing requirements or repayment terms, and the ability to generate modest returns on their savings. This can be particularly beneficial for farmers who have limited financial literacy and who might struggle to access formal lending schemes. In addition to this, informal lenders can help smallholder farmers to build credit history (track record) and savings, which can be a good way to build the necessary assets/collateral to access finance from formal financial institutions later on.

Microfinance institutions

Role

Enabling financial inclusion, 'last-mile' financial service delivery

Form of Support

Microloans, savings, remittances, insurance, directly to smallholders

Financing terms

Varied, depending on sources of finance

Microfinance institutions (MFI) play an important role in providing credit to smallholders. Across Southeast Asia, around two-thirds of MFIs lend money to rural customers, a share of which reaches smallholders.⁵⁷ MFIs offer local presence that other financial service providers often lack, allowing them to disburse loans directly to smallholders. MFIs can be privately owned, commercially driven institutions, or organisations that blend commercial and public finance to channel more affordable financing to rural borrowers. As such, there is high disparity in the interest rates charged.⁵⁸ Small and microloans are the most common product offered, intended to support operating expenses of farmers or to cover small capital expenditures. Apart from loans, MFIs can also offer other products such as insurance or the ability to channel remittance finance and establish savings accounts. While some institutions will have in-house expertise on agriculture,

MFIs lacking prior experience in agricultural lending can still represent strategic partners or act as investees in smallholder finance schemes, where they can on-lend financial resources to smallholders residing in their areas of operation. Examples of MFIs offering smallholder finance in the region include Bank Rakyat Indonesia and the Amanah Ikhtiar Malaysia.

Social lenders

Role

Impact investment, blended financing

Form of Support

Loans (trade credit, asset finance), typically through investees

Financing terms

Market-based, but often with 'soft' elements

Social lenders target investments that create environmental and social impact, and play a prominent role in agricultural lending. They can play an instrumental role in providing debt capital to catalyse growth, allowing ventures to become financially self-sustaining in the long-term. Provision of seasonal trade credit and asset finance are common products, as well as working capital loans, with the primary beneficiaries being investees such as farmer cooperatives, microfinance institutions or private enterprises, rather than smallholders directly. As such, average loan amounts can range from USD 500,000 to several million, with typical expected returns of these investors ranging between 0.5 and 5 percent, depending on the associated level of risk, the type and size of the loan, the target geography, and the commodity in question.⁵⁹

While social lenders are present in Southeast Asia, only 10 to 20 percent of total investments reach Southeast Asia, with the remainder destined for Sub-Saharan African and Latin American markets.⁶⁰ Coffee, cocoa and cashews value chains are key investment areas for social lenders in the Asian region.⁶¹ Examples of social lenders active in Southeast Asia include Root Capital, responsAbility, Oiko Credit, Incofin and the Rabo Rural Fund.

Commercial banks

Role

Asset investments, enabling investments, de-risking

Form of Support

Loans, credit guarantees, bonds and grants, through investees

Financing terms

Concessional

Direct engagement of commercial banks in smallholder finance schemes has been limited to date. Where such links do exist, financing is typically channelled through investees such as microfinance institutions, producer cooperatives, or local enterprises. This is due to the challenges associated with evaluating the credit worthiness of smallholders, the lack of collateral, and the absence of local branches that could effectively service rural populations. Added to this, commercial banks often lack expertise in agricultural finance, especially in the context of sustainable land use practices. This is a barrier as the requirements to design financial products for traditional agriculture finance purposes are significantly different to those needed for sustainable land use.

Offered financial products will depend on the investment strategy of the commercial bank, the regulatory environment it operates in, and the capacities and needs of an investee. The form of support may include revolving credit lines offered to microfinance institutions, or longer-term fixed asset loans to producer cooperatives or agricultural enterprises. Loans are generally disbursed against strict collateral requirements. Examples of regional commercial banks active in sustainable agriculture financing include Bank Tabungan Pensiunan Nasional and Bank Andara (both based in Indonesia) and the Viet Nam Bank for Agricultural and Rural Development. International banks, aside from operating commercially, can also channel CSR finance through dedicated fund structures, such as JP Morgan Chase & Co.’s contribution to the EcoEnterprises Funds, Bank of America’s investment in the Root Capital Social Impact Funds, or Rabobank’s AGRI3 Fund.

Development banks

Role

Asset investments, enabling investments, de-risking

Form of Support

Loans, credit guarantees, bonds and grants, through investees

Financing terms

Concessional

Development finance institutions can play an important role in de-risking investments in smallholder activities. Depending on the objective of their involvement, development banks can offer concessional debt financing in support of larger capital investments, support revolving credit structures with microfinance institutions or producer cooperatives, or provide first-loss capital and credit guarantees to private sector investors, with the aim of crowding-in commercial capital. Such funding can be provided in the form of official development assistance or climate finance, and may be offered at below-market cost. Grants are another instrument commonly offered by development banks, generally targeted to support enabling activities such as technical assistance programmes. Typically, these organisations operate with larger financing volumes than other entities listed here — often with minimum thresholds of USD 5 to 10 million — which may be more suited to broader landscape or value chain investment programmes rather than smallholder activities directly. Financial support is generally linked to strict environmental and social safeguard policies and reporting requirements.

Multilateral development banks that are active in sustainable land use investments across Southeast Asia include the Asian Development Bank, European Investment Bank, Islamic Development Bank, and the World Bank Group. Examples of bilateral development banks include Germany’s KfW Development Bank, the Netherland’s Development Finance Company (FMO), or the French CDC. Finally, national development banks also play an important role in extending agricultural finance, such as Myanmar’s Agricultural Development Bank.

Impact investors

Role

Impact investment, at venture or growth stage

Form of Support

(Convertible) debt, mezzanine and equity investments in investees

Financing terms

Market-based or concessional, often blended

Financial institutions that do not have specialised teams dealing with sustainable land use investments can gain exposure to this asset class by allocating capital to impact investment funds. These specialised asset managers have the mandate to pursue investment with longer time-horizons (seven to 12 years), but can also take part in shorter-term investments (three to seven years). Such funding aligns well with certain sustainable agriculture activities that — depending on crop or tree growth periods — can take many years before starting to yield commercial returns. Impact investors can be fully commercial, but often blend commercial funding with concessional financing to lower investment risks and offer layered capital structures. Similar to social lenders, funding typically flows through investees (e.g. MFIs, producer cooperatives, enterprises) or special purpose vehicles that target commercial agricultural activities, rather than directly targeting smallholders. Funding also comes with strict environmental, social and governance (ESG) reporting requirements for investees. While still small in absolute size, there are a growing number of impact investors that specialise in sustainable land use investments, including smallholder inclusion programmes. Examples of impact fund managers active in the region include Mirova and responsAbility.

Corporations

Role

Supply chain investments

Form of Support

Grants and loans, typically through investees

Financing terms

Market-based or concessional if blended with public sources

Corporations (e.g. consumer goods companies, processors, traders) play an increasingly important role in smallholder financing. There are different motivations for this, which influence the scope and scale of investments and financial support that companies can offer.

Many corporations recognise the business case for securing stable and resilient supply chains, especially in light of climate change and the economic impacts it is having on performance. Downstream business operations can be severely impacted by supply shocks at smallholder level, triggered by events such as drought, flooding or pest outbreaks. The resulting resource scarcity can directly impact a company's performance and assets, and safeguarding against such occurrences is prudent. Companies can finance value chain activities aimed at improving the quality of the sourced product and strengthening the resilience of supply, which may include elements of finance, certification, technology, input delivery, and smallholder training. Companies often focus their efforts on a single commodity and associated farm-level interventions, implying export crop farmers will be better positioned to benefit from such support than staple crop farmers.⁶²

Another strong motivation for corporations to engage in sustainable agriculture and smallholder inclusion is reputational risk. Companies are realising the impact their supply chains are having on the environment, and are funding efforts that counter this development, while also having the potential to strengthen the resilience of their supply chains. The launch of initiatives like the New York Declaration on Forests⁶³, The Consumer Goods Forum⁶⁴ and the Tropical Forest Alliance⁶⁵ are encouraging corporates to take on sustainable supply chain commitments, and prompt companies to introduce zero deforestation and climate neutrality policies to green their supply chains, engage with suppliers, and provide technical assistance funding to smallholders. Corporate Social Responsibility budgets are often earmarked for this, and while such support is not directly motivated by financial gains, companies will allocate financing strategically. Moreover, as consumer demand for sustainably sourced commodities continues to grow, the business case for sustainably sourced products is becoming clear. The investment approach of the Livelihoods Fund for Family Farming (supported by corporates Mars, Danone, Firmenich and Veolia) is one example of how corporates are supporting investments in sustainable farming practices by smallholders with an aim to improve yields and the quality of sourced products.⁶⁶

Fintech companies

Role

Enabling financial inclusion

Form of Support

Loans, insurance products

Financing terms

Competitive, but dependent on the source of funding

Innovation in the technological landscape is opening up new avenues for lenders to service smallholders. A rapidly growing number of specialised companies are developing financial technologies (fintech) targeted at enabling financial access to rural populations that previously were unbanked. While currently still playing a small role in channelling finance to smallholders, the agricultural fintech space is evolving rapidly and is challenging traditional approaches to evaluating credit risk, underwriting risk, and handling loan processes. Many fintech companies currently rely on external funders, offering tailored solutions that improve, automate and facilitate the delivery of financial services.

By linking big data analytics with financing, fintech companies have the potential to overcome critical barriers to financing smallholders, including the challenges of evaluating the creditworthiness of smallholder farmers and linking loan repayments to agricultural production cycles. This impact can be especially powerful if fintech platforms are coupled with agritech solutions that aim to boost farm productivity. In addition to this, fintech companies offering peer-to-peer lending platforms are entering the market, allowing smallholders to benefit from more flexible and less costly loans than traditional bank lending.⁶⁷ Examples of agricultural fintech companies

active in Southeast Asia include Impact Terra, a start-up that improves smallholder farmers' access to finance through personalised loan products in Myanmar⁶⁸; Crowde, an agri-financing platform connecting financiers with farmers in Indonesia⁶⁹; and Cropital, a Filipino social enterprise that uses crowdfunding to channel finance to smallholders and offers insurance products⁷⁰.

3.3 SMALLHOLDER FINANCE PRODUCTS

There is a high unmet demand for smallholder finance across Southeast Asia. Where financing is available, it generally serves to address short-term financing needs, and targets current agricultural practices that contribute to the region's environmental degradation, without curbing greenhouse gas emissions, adapting to climate change and increasing productivity in a sustainable manner. Few financial actors are able to offer financial solutions to help farmers transition to sustainable ways of farming by addressing longer-term financing needs that could support regenerative agriculture, renovation or rehabilitation activities.⁷¹ These financiers struggle to scale up their green lending activities through existing channels as they are unfamiliar with the business models that drive sustainable land use, or the business models do not deliver an acceptable risk-return profile.

A growing number of specialised investors are entering the smallholder space, offering financing products tailored to the needs of farmers

Fortunately, this is beginning to change. A growing number of specialised investors, both donor- and commercially funded, are entering the market and offering financing products that can be tailored to the needs of smallholders.⁷² Technological innovation in the space of digital finance, big data analytics, and blockchain spearheaded by fintech companies is contributing to this trend, opening up new avenues for financing rural communities, and facilitating impact monitoring. In addition, actors engaged in 'traditional' smallholder finance structures are starting to become part of larger (e.g. landscape-level) financing programmes that shift investment incentives to more sustainable land use practices. To unlock investments in smallholders, these financing schemes often combine the use of several different financial products.

Below we review the types of financial products that can be applied in the context of smallholder investments, namely grants, loans (concessional and market-based) and equity investments. The blending of these different types of finance, combined with the use of tailored risk management instruments (see Section 3.3), allows for financial innovation that re-allocates risks and improves the bankability of business models. This, in turn, can have a powerful effect on catalysing investments, including those from the private sector.

Table 6. Finance actors, and the type of finance products they typically offer.

	Grants	Concessional loans	Market-based loans	Equity
State banks	•	•		
Non-governmental institutions	•	•		
Community-based lenders		•	•	
Microfinance institutions		•	•	
Social lenders		•	•	
Commercial banks			•	
Development banks	•	•	•	•
Impact investors			•	•
Corporations (CSR/commercial)	•	•	•	•
Fintech companies		•	•	

Grants

Objective

De-risking by subsidising costs, supporting enabling activities

Link to farmers

Direct, or through intermediaries

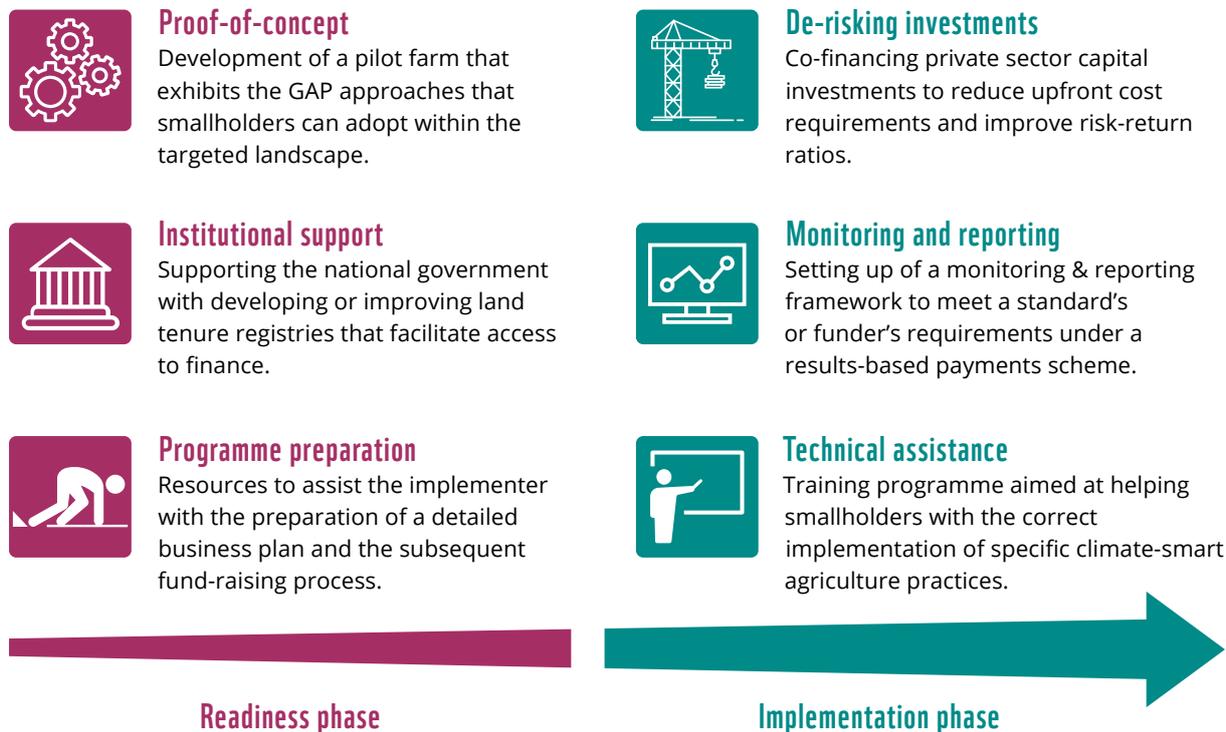
Repayment

Non-repayable, reimbursable, or convertible financing

Grants are funds designed to support the implementation components of smallholder finance schemes that are critical for success but are unlikely to be funded commercially. Typically disbursed by governments, development institutions and non-governmental institutions, grants target readiness activities and can play an important role in de-risking the investment case throughout the implementation phase of smallholder programmes. Figure 4 lists examples of activities that typically qualify for grant support.

Grants may be structured as upfront payments; for example, as input subsidies to facilitate the purchase of quality seeds and fertiliser that can improve productivity, or payments to cover costs associated with capital investments). Grants can also be disbursed in a results-based fashion to compensate for costs realised over a certain timeframe; this may relate to grants tied to sold agricultural output volumes, or to quality indicators such as certification.⁷³ While many grants will not have to be repaid, reimbursable and convertible grants can also be used to develop technological and/or business solutions that will be revenue generating and that would not receive capital otherwise. These may find themselves at the intersection between the readiness and the implementation phase.

Figure 4: Examples of activities that can benefit from grant finance



Grants can play a critical role in kick-starting smallholder initiatives and contributing to an enabling environment for the transition to sustainable farming practices. However, smallholder finance schemes should not rely on grant funding alone for a number of reasons:

- **The scope of grant finance is restrictive.** Depending on the donor, the scope of the grant support can vary from covering only specific readiness activities, to sponsoring multi-year technical assistance programmes. However, the direct and complete financing of revenue-generating smallholder activities generally falls outside the scope of such support, and will need to be raised elsewhere. Grant funders need to understand how their contribution enables other investments, and should always be considered in the context of a broader basket of financing instruments.
- **The scale of grant finance is limited.** Grant support will apply to specific enabling activities that would otherwise not be financed by other parties. Since financiers are not expecting a return on their investment, the amount of grant finance an institution is able to offer is often limited.
- **Grant finance is short-term.** Grants are typically allocated through dedicated funding windows, which may not be extended in the future. Dependence on grant funding is therefore risky, and more predictable, long-term sources of capital need to be mobilised to support the smallholder investments in sustainable land use.

Grants can also distort markets, and discourage both private sector actors and also certain public sector actors who focus on market segments that are considered less risky. As such, the need for their use in smallholder finance schemes has to be carefully evaluated.

Debt

Objective

Financing assets that generate returns, de-risking investments

Link to farmers

Direct, or through financial intermediaries

Repayment

Places strict repayment obligations on investees

Debt — or credit — refers to borrowed capital that needs to be repaid to the lender with interest over a defined timeframe. Given this repayment obligation, debt is suitable to support smallholder activities that have a predictable cash flow and can generate a commercial return over time. Debt can enable investments in capital assets (e.g. farming equipment, processing plants, vehicles) or support ongoing cash flow needs of smallholders or the organisations they belong to (e.g. covering income gaps between harvesting periods, labour costs, inputs). Some funders — such as commercial banks, microfinance institutions, producer cooperatives or digital financiers — can disburse credit directly to smallholders. This can include microcredit, which represents small, short-term loans aimed to cover direct financing needs. Actors that lack such close links to rural communities or that are more risk averse will typically channel their financing through investees that can offer ‘last-mile’ service delivery and will act as on-lenders. In larger sustainable land use investments, pooled credit may also flow through dedicated investment vehicles overseen by a specialised asset manager.

The terms at which credit will be extended to investees or on-lent to smallholders will depend on the risk profile of the target investment, existence of collateral, and its ability to deliver a financial return. Table 7 summarises the various types of debt products that can be used to support smallholders, or the organisations they are affiliated with. This excludes some other types of debt instruments that may be used by specialised asset managers in larger sustainable land use investments, such as convertible debt, debt swaps, or mezzanine finance (for information about green bonds, refer to Box 8).

The process through which lenders evaluate the likelihood of repayment is known as a credit risk assessment. In the case of direct loans to smallholders, such an assessment traditionally includes a site visit to evaluate a farmer’s creditworthiness by checking the credit history, the farm characteristics (e.g. number of fruit-bearing trees, size of plot), analysing farm-level cash flow needs, and valuing the assets the borrower owns and which could serve as collateral. Farmers that lack credit history may only qualify for small, short-term working capital loans, but over time could become eligible for longer-term credit options, such as multi-year renovation or rehabilitation loans. The form of credit risk assessment will differ if

conducted at the producer cooperative level and will be impacted by whether the cooperative operates in a tight or loose value chain, and on which stage of the value chain the borrower is. The scope of such assessments will typically focus on the membership base, the nature of the offtake agreements for key products, historical transaction records, and agronomic survey data.

Table 7: Typology of debt instruments applicable to sustainable agriculture investments

Type of credit	Description	Examples
Working capital loans	Working capital loans are the most common type of credit offered to smallholders, either directly through local funders like MFIs, or through producer cooperatives. The primary objective of these products is to bridge the cash flow deficit between pre-harvest activities and the sale of produce. Microloans can be as small as USD 30.	<ul style="list-style-type: none"> • Pre-harvest activities (purchase of seedlings, fertiliser, labour costs). • Operational expenses associated with processing (storing, drying), and access to market (transportation).
Trade credit	Trade credit is common in commodity value chains, and represents seasonal loans extended by buyers of the product to sellers or producers. Such forms of credit are often extended by value chain actors that provide capital in advance, with repayment due upon harvest time. Loans can also be coupled to purchase agreements. Typically, borrowers are eligible for a loan of up to ca. 50 percent of the value of an offtake contract.	<ul style="list-style-type: none"> • Similar to the above, as trade credit provides working capital to enterprises or producer cooperatives.
Asset finance	Agricultural asset finance relates to credit extended to cover investments in productive equipment, improving smallholders' income-generation potential. If financed assets have a defined resale value, they can act as their own collateral. Asset finance loans offer longer repayment periods and are typically offered by MFIs, commercial banks and social lenders.	<ul style="list-style-type: none"> • For smallholders, this could include purchase of farm animals, a new plot of land, or agricultural equipment. • For cooperatives this could cover investments in processing facilities, tractors, trucks.
Receivables-backed finance	In value chains where producer cooperatives have long-term offtake agreements with reputable buyers, these sale or forward contracts can serve as collateral for loans. The transaction history between the cooperatives and buyers are typically used to establish the creditworthiness of the lender.	<ul style="list-style-type: none"> • Generally linked to commodity supply chains, and used to finance their production, processing and exporting costs.
Warehouse-receipt finance	A more advanced form of value chain finance, whereby recognised commodity warehouses issue receipts to depositors of commodities. These can then be used as collateral for producers seeking access to credit. This financing approach is generally suitable for larger value chain actors and applies for non-perishable products, such as grain or rice.	<ul style="list-style-type: none"> • Similar to the above, as warehouse-receipt finance is in many ways comparable to receivables-backed finance.

Box 8: Green bonds and sustainable land use finance

As presented in Section 3.1, the provision of agricultural finance is currently dominated by commercial banks, development banks, civil society institutions and local funders. The limited success of sustainable land use initiatives to leverage financing from international capital markets is one reason why scaled-up finance flows into the sector is not taking place.

One promising approach for accessing scaled up, affordable agricultural finance for sustainable land use is the use of green bonds. Bonds are debt instruments that can be issued by governments, development banks, municipalities, and companies to raise large sums (typically at least USD 250 million⁷⁴) of credit from investors. Green bonds are a special category of bonds that target environmentally and socially responsible investments, and can relate to investments in sectors like renewable energy, energy efficiency, or infrastructure. The Green Bond Principles, a leading governance standard for green bonds, also extend to agricultural projects, qualifying various types of activities as eligible, including climate smart inputs such as biological crop protection or drip-irrigation; environmentally sustainable fishery and aquaculture; and environmentally sustainable forestry.⁷⁵

According to data by the Climate Bonds Initiative, financing from green bonds for sustainable agriculture and forestry reached USD 7.4 billion in 2018.⁷⁶ While annual issuance volumes are growing, the role of green bond finance in the sustainable land use sector remains niche, and in the smallholder context non-existent. To ramp up land use financing, in 2018 the Initiative announced a list of forest criteria to streamline green bond issuances for forestry programmes, and in June 2020 announced new criteria for agricultural investments.⁷⁷

Brazil has been one of the leading countries pursuing green bond issuance to finance forestry and agricultural programmes, but so far only large-scale farmers have been able to benefit from these financing programmes. One recent example of an initiative funded through such bonds is the Responsible Commodities Facility, which provides below-market credit lines to Brazilian soy farmers (large industrial farms) who use degraded pastures and cleared agricultural land to grow their produce, and commit to avoiding clearing forests and native grassland.

Another relevant example is the Tropical Landscapes Finance Facility, an initiative started by the Indonesian government with support from UN Environment, World Agroforestry Centre, ADM Capital and BNP Paribas. The objective of the programme is to deliver long-term finance to projects and enterprises that stimulate green growth and improve rural livelihoods, and has been in part capitalised by a USD 95 million green bond.

Information and communication technologies play an increasingly important role in facilitating accessibility to smallholder data, including behavioural aspects, records of farmer purchases and sales, product traceability, and farmers' engagement with digital services.⁷⁸ These data points enhance a smallholder's 'digital identity', allowing lenders to conduct credit risk more accurately and go beyond the use to traditional metrics such as land ownership (that can serve as collateral) and production data. In rural areas where mobile-phone technology is well established, the digitalisation of payments in the 'last-mile' transaction combined with innovations delivered by fintech and agtech companies in the areas of big data and remote sensing, is enabling actors to speed up the credit assessment process, eliminating the need for costly site evaluations and reducing transaction costs. Refer to Case Study 5 in Chapter 4 to read more about how digital solutions are simplifying farmer credit scoring and allowing smallholder financing to expand into new frontiers.

Financiers active in debt finance range from national banks (e.g. the Thai Bank for Agriculture and Agricultural Cooperatives), regional development banks (e.g. the Asian Development Bank) and multilateral development banks (e.g. the World Bank) to microfinance institutions (e.g. Unit Desa of Bank Rakyat Indonesia), social lenders (e.g. Root Capital, Impact Finance, responsAbility, Oiko Credit, Incofin or the Rabo Rural Fund) and a rapidly growing pool of fintech start-ups.

Equity

Objective

Enabling growth of enterprises through financing and strategic support

Link to farmers

Indirect, through enterprises

Repayment

Places no financial burden on investees

Investments in smallholders often do not target individual farmers directly, but are channelled through corporates, small and medium-sized enterprises or producer cooperatives that manage sizeable commercial operations. In these instances, while debt finance continues to play a vital role in providing resources, equity investments can present an alternative source of funding. Some financiers may also require a minimum ratio of equity to debt before committing to co-funding; as such equity investments can be invaluable in the kick-starting and in the transition to early growth and growth stages of enterprises. The consequence of this is also that as demand for equity outstrips supply, many agricultural enterprises fail to scale up operations.

Equity represents an ownership stake in an organisation or an initiative. By taking ownership in a venture, investors can benefit by seeing the value of their ownership share appreciate, and may qualify for pay-outs (i.e. dividends) from the generated profits. In case of failure, however, equity investors are at risk of losing their entire investment. For investees, while

selling shares reduces control over a business, equity investments can be attractive as they do not have predefined repayment terms, giving investees access to capital that can be used to pursue investment opportunities. Another benefit of having equity investors on board is the strategic support these investors can offer (e.g. business and managerial skills, networks and contacts).

Given the costs associated with equity transactions, equity investors apply minimum investment volumes that exceed the capacity of many agricultural enterprises. As such, equity investments in sustainable land use are most typically channelled through dedicated investment funds that have a track record in landscape or value chain investments, and manage a diversified portfolio of larger investments. Closed-ended funds, where capital is allocated for the entire duration of the investment horizon, are one example of such funding structures. The funding process starts with a deal origination phase, after which investments are made in promising ventures for periods of eight to twelve years before exiting (in some cases, the investment periods may be shorter). Return expectations of equity investors will differ considerably, and will depend on their investment mandates. Typically, targeted returns in sustainable land use investments range from 5 to 15 percent, but are highly context specific. The distinction between venture capital firms – which target earlier stage, start-up ventures and tend to take minority ownership positions – and private equity firms that enter with higher investment volumes at more mature development stages, are not yet apparent in the sustainable land use space.

There are currently a limited number of equity funds managing sustainable land use investments in Southeast Asia. Examples of some prominent players active in the region include Mirova and responsAbility.



3.4 FINANCIAL RISK MANAGEMENT STRATEGIES

The bankability of smallholder investments can be strengthened by combining direct capital investments with tailored financial risk management strategies, with the latter serving to re-allocate risk, or eliminate exposure to certain risks altogether. These risk management strategies can have a powerful catalytic effect on raising resources for smallholder programmes, as well as lowering the cost of finance to a level that can make sustainable land use investments viable. By crowding-in investors, the market's long-term commercial viability can be demonstrated, paving the way for scaled up investments in the future.

De-risking by means of credit enhancement or first-loss capital is one example of strategies applied in sustainable land use financing. Another way of managing exposure is through the use of ancillary financial products, such as agricultural insurance. The applicability of these risk management solutions depends on a number of factors, including the financing structure, type of financiers involved, total investment size, and return expectations of investors.

Credit enhancement

Credit enhancement refers to financial solutions that improve the credit-worthiness of target investments. In the context of sustainable land use investments, availability of credit enhancement can incentivise investors to lower their cost of capital, extend the tenor of debt maturity, allow for more flexible repayment schedules, or ease covenant requirements. All these factors can greatly improve the viability of investments in sustainable land use practices, and help crowd-in commercial sources of finance.

Credit enhancement instruments are typically delivered by development finance institutions and state banks, but commercial banks and specialised investors can also participate in such structures. Characteristics of two common types of credit enhancement are presented below.

Subordinated debt

As explored earlier in this chapter, debt finance can come in different forms, depending on the aim of the investment and the type of investee. In transactions where debt for sustainable land use financing is raised by an intermediary such as a specialised investment fund, debt investments can be structured in layers to allow for the re-distribution of risk. By layering debt, an investment can offer investors various rates of return, depending on what exposure they are able to take on. Risk-averse FIs, such as

Credit enhancement can incentivise investors to lower their cost of capital and allow for more flexible repayment terms

institutional investors, will typically only consider providing debt capital to the most secure, senior tranches. The seniority infers that repayment of this debt has priority over the repayment of more junior tranches. The junior debt is also called subordinated debt or first-loss debt, since it is the first layer of debt finance to accept write-offs in the case of non-repayment.

In return for this security, senior debt holders will accept lower returns than investors in more junior tranches. From a finance-raising perspective, offering tranches of debt with different risk-return profiles can be attractive as it can (i) facilitate access to a broader range of investors; and (ii) soften the terms of finance they provide.

Credit guarantees

While subordinated debt improves the risk-return profile for senior debt holders by directly capitalising the financial mechanism behind a smallholder scheme, credit guarantees represent indirect financial backing that is only released in the event that investees are unable to service their debt repayment obligations. By offering a credit guarantee, a financier commits to step in and cover the loss that is realised in the event of a credit default, for instance when a producer cooperative is unable to repay a loan it took on. This improves the creditworthiness of a borrower, enabling the entity to secure financing at more attractive terms. In the smallholder finance segment, credit guarantees are often used to setup risk-sharing facilities that support microfinance institutions or local commercial banks that lend money to agricultural enterprises, or smallholders directly. In larger sustainable land use investment programmes, they are often used to de-risk and attract private capital to dedicated impact investment funds that will invest either in MFIs or directly in enterprises. Credit guarantees generally cover a proportion (typically not more than 50 percent) of outstanding debt.

Credit guarantees can be provided by development banks, public financiers and specialised commercial funders with a strong credit rating. The financial track record of these financiers gives other investors the reassurance that their investment is sufficiently safeguarded. Examples of institutions offering such support in the region include ABN AMRO and Rabobank's support for the Neumann Kaffee Gruppe's Coffee Smallholder Livelihoods Facility, or FMO's financing of the IDH Smallholder Finance Facility.⁷⁹

Agricultural insurance products

Another way of de-risking investment in smallholder activities is through tailored insurance products. Agricultural insurance can safeguard income in the event of crop losses triggered by weather events or pest outbreaks, giving investors a higher degree of certainty about future cash flows. Agricultural insurance can either apply directly to smallholders, or alternatively relate to broader programme-level interventions, depending on the deal structure.

Smallholder-level insurance

Microscale insurance protecting farmers from financial losses in the event of severe weather events, pest outbreaks or unforeseen market fluctuations can provide an invaluable security to smallholders, which otherwise are fully exposed to the devastating impacts of such events. Protection against such occurrences is becoming increasingly relevant as climate change is impacting growth cycles, and makes yields less predictable.

The use of agricultural insurance in the smallholder segment is still limited.⁸⁰ Innovation in the insurance market is however reducing the cost of agricultural insurance from which smallholders can benefit directly. One illustration of this is the introduction of index-based insurance schemes, which use local weather patterns or sampled agricultural yields as a proxy for the performance of large groups of farmers. Such solutions are reducing the cost of service, by for instance facilitating the process of individual claim assessments. An example of an innovative index-based insurance scheme is the Blockchain Climate Risk Crop Insurance, a digital platform for crop insurance for smallholder farmers in Africa that offers timely payouts to farmers affected by extreme weather events. This scheme is also an example of how innovation in technology (blockchain) can reduce transaction costs during the processing of claims.

Public support in the form of targeted subsidies and awareness raising campaigns are also incentivising the uptake of insurance with smallholders. One example where government engagement has enabled the use of crop insurance by smallholders are the programmes supported by the One Acre Fund in Kenya. The non-profit social enterprise provides financing solutions to smallholders that are tied to crop insurance supported by a national agriculture insurance programme. Close to 350,000 smallholders have benefitted from the fund's support to date.⁸¹

Programme-level insurance

Insurance products can also be introduced at a programme level to guard investors against certain non-agricultural risks. Such solutions may be essential in allowing investees to raise capital for smallholder activities, but as such will only indirectly benefit smallholders. Examples of such insurance products include:

- *Political risk insurance:* Political risk insurance relates to guarantees covering the loss of commercial assets, income or property as a result of a political risk event. These events can include expropriation of assets financed by a programme, restrictions on currency convertibility which may impact the servicing of financial obligations, or non-payment in the event a public body is an off-taker of products. This type of insurance may be necessary in regions where investors expect to face political instability, or in programmes where local public entities play an important role. Political risk insurance can be offered by both public and private financiers. The Multilateral Insurance Guarantee Agency (MIGA) of the World Bank Group is the largest public institution offering such coverage. Examples of private sector insurance companies offering similar solutions include Zurich American Insurance, Lloyd's and AIG.
- *Foreign exchange risk insurance:* In countries with a mature domestic financial sector, financing of land use investments is generally structured with debt and equity denominated in the local currency. This means that both the upfront capital expenditures and future revenue streams are handled in the same currency. In many developing countries, domestic financial markets or state budgets are not able to deliver the volumes of finance needed, and international financiers step in to close this financing gap. This results in hard currency financing, such as the US dollar or the euro. Financing in foreign currencies creates currency exchange rate risks when revenues within a programme are generated in a local currency. For an investee managing a smallholder finance scheme, the resulting asset-liability mismatch can become very costly if left unmanaged. Foreign exchange risk insurance products can alleviate this mismatch by locking in a fixed exchange rate, thereby protecting an investee against currency exchange fluctuations.

3.5 MARKET-BASED INCENTIVES

Investments in sustainable farming practices positively impact the functioning of local ecosystems. By mobilising market-based incentives linked to the protection or rehabilitation of valuable ecosystem services, the revenue generation potential of sustainable land use activities can be further solidified, de-risking the investment case.

Below we distinguish between two types of market-based incentives: ones delivered through product certifications and labelling, and others channelled through payment for ecosystem services schemes. Elements of these market-based incentives could also be integrated by asset owners and asset managers where investors require investees to comply with stricter sustainability criteria and reward them for so doing. Sustainability linked loans are an example of such an approach, whereby environmental and/or social performance can result in a discount or premium to the loan pricing.

Operationalising these schemes requires considerable upfront financial resources and technical expertise, implying that they have to be integrated in a business model from the very start. If successfully implemented, the schemes have the potential to trigger additional income streams for small-holder activities and strengthen the bankability of investments.

Certification, labelling and traceability

There are a number of ways through which smallholder incomes can be enhanced. On the one hand, smallholder revenues can improve through increased productivity, a shift to higher-value crops, and/or sustainable intensification. On the other hand, profitability can be strengthened by securing better off-take agreements for grown produce. Product certification, labelling and traceability can help with the latter by paving the route to markets that are able to offer premium pricing for sustainably produced crops. Certification, labelling and traceability play a prominent role in commodity value chains, ranging from general health and safety codes for minimum export quality requirements, to certification labels that assess impacts on livelihoods and biodiversity conservation and target niche consumer markets (Box 9). Such schemes certify that pre-defined protocols governing the commodity production process have been followed, and communicate quality and origin specifications to off-takers as well as social or environmental attributes to consumers. As a marketing tool, certification increases product recognition, addressing shifting consumer demand for more sustainable foods. As a compliance tool, corporates can use certification to evidence achievement of certain social or environmental goals, such as

Certification and organic production can lead to increased incomes while nurturing more resilient farming systems

zero-deforestation commitments or ethical sourcing objectives (e.g. No Deforestation, or No Peat, No Exploitation to foster the sustainable sourcing of forest-risk commodities⁸² such as cocoa, beef, or palm oil).

For smallholders, certification and organic production can lead to increased income and more resilient farming systems. However, evidence suggests that these benefits are often only enjoyed by farmers already producing high quality produce, and where technical and financial support is made available to help farmers establish effective food production systems.⁸³ As certification is often limited to a small number of export crops, critics also point out that the price premiums only benefit isolated initiatives / commodities instead of advocating for mainstreaming sustainability (i.e. including food safety, health and nutrition) across agriculture production systems. Another issue is that as certification becomes more prevalent, premiums are pushed lower⁸⁴, with certified products in certain markets failing to secure better pricing altogether. The application of price premiums is also highly variable across different certification schemes. For example, with Fairtrade, set premiums are a central component of the scheme. For Rainforest Alliance certified products, premiums are not guaranteed. As such, market research and evaluation of the possible routes to market are essential to evaluate the potential commercial benefit of pursuing certification.



Box 9: Sustainable production certification schemes

Examples of sustainable production and certification schemes that have defined sustainability criteria for commodity or value chains include, among others:

- Rainforest Alliance, which certifies farms and producer groups involved in sustainable crop and cattle production;
- Forest Stewardship Council (FSC), which certifies timber products originated from responsibly managed forests.

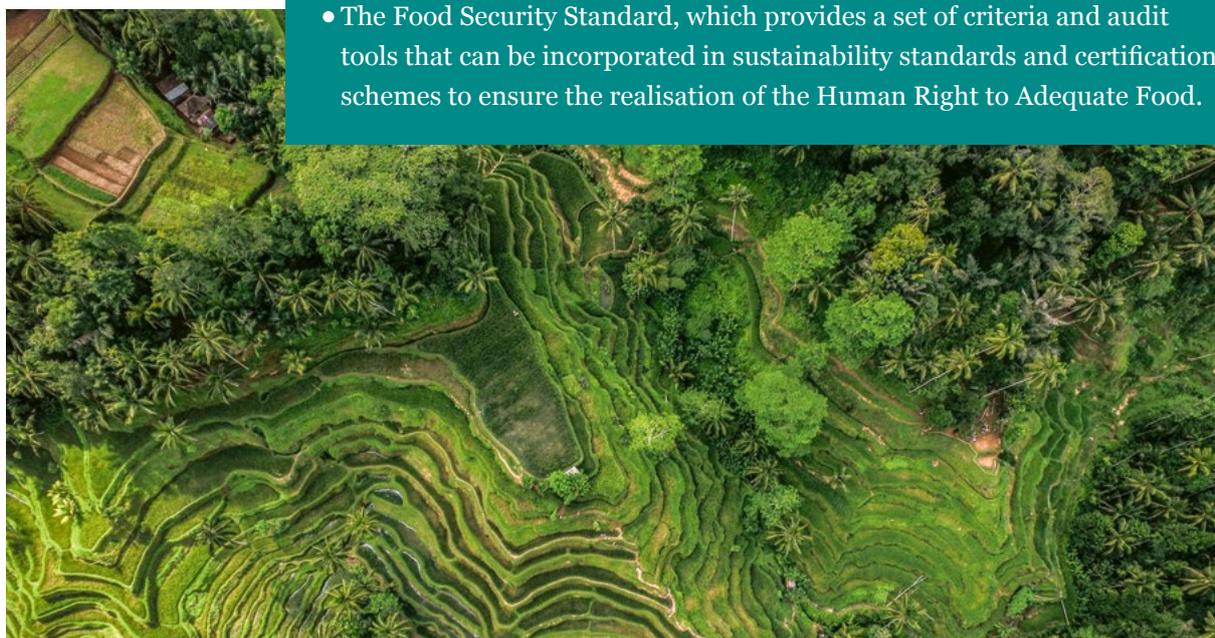
Furthermore, a number of voluntary environmental initiatives have been developed by industry and civil society, offering social, environmental, and economic guidelines⁸⁵ for the production of commodities.

Examples of these include:

- Roundtable on Sustainable Palm Oil (RSPO), which promotes the growth and usage of sustainable palm oil products;
- Round Table on Responsible Soy (RTRS), a similar initiative targeting sustainable supply of soy;
- Cocoa and Forests Initiative (CFI), a public-private partnership bringing together governments and leading cocoa and chocolate companies.

Finally, there are standards that address sustainable food production while safeguarding the livelihoods and working conditions of farmers, such as:

- Fairtrade, which establishes criteria for farmers, workers, traders and other stakeholders to participate in markets that benefit producers and their communities;
- The Food Security Standard, which provides a set of criteria and audit tools that can be incorporated in sustainability standards and certification schemes to ensure the realisation of the Human Right to Adequate Food.



Proving compliance with certification schemes can be difficult for smallholders who do not possess legal documents, including proof of land ownership.⁸⁶ As such, group certification, in combination with technical assistance, is often the only way that smallholder farmers can access certified international markets.⁸⁷ Still, for many smallholders the cost of compliance remains a critical barrier to participation in certification schemes. Considering the growing uptake of climate neutrality, zero deforestation and sustainability commitments from corporates and investors, there is a hope that these costs will be duly internalised by corporates themselves, as they are the ones that will monetise such gains in both the short and longer term. Furthermore, innovations in the agtech space are starting to unlock new ways of ensuring traceability and the certification of products, allowing value chain actors to move away from paper-based internal management systems currently applied by the majority of schemes, to digitised and more cost-effective ways of tracking compliance (Box 10).

Box 10: Certification in the palm oil sector and the role of blockchain

Technical assistance programmes funded by value chain actors can play an important role helping smallholders gain access to certification. However, the fragmented and exclusionary nature of most support programmes prevents the majority of farmers from accessing such support altogether.

In the palm oil sector, only around 18 percent of the total palm oil cultivation area is included in certification programmes.⁸⁸ These mainly relate to aggregated smallholder groups that operate under an off-take agreement with one of the larger corporate buyers. As such, independent smallholders remain largely excluded from such certification efforts. The dispersed locations of many independent farmers combined with their lack of legal documents, record-keeping, and formal contracts with buyers means companies struggle to engage them. This problem is further exacerbated by some smallholders' reluctance to work with companies, for fear of diminished marketing opportunities.

Innovative blockchain based systems are starting to tackle some of the problems currently observed in the palm oil certification process. For example, The Malaysian Palm Oil Council teamed up with blockchain start-up BloomBloc⁸⁹ in 2020 to develop a digital application that enables users to trace palm oil throughout the entire supply chain. The platform registers each palm tree covered under a supply agreement, recording the volume of fruits harvested, the oil extraction process, and other relevant data, enabling users to track the journey from a specific plantation, to a mill, and finally to the end product. As such digital solutions to certification mature, they hold the potential to significantly reduce the costs of integrating smallholders in sustainable supply chains.

Box 11: Landscape-level certification

Certification schemes typically verify the compliance of producers on the basis of individual landholdings. While thousands of producers can be certified within a specific landscape, such areas will usually also include many non-certified landholdings. To encourage comprehensive sustainability across a landscape, new approaches to certification and labelling are emerging.⁹⁰

One such example is LandScale, a partnership between the Climate, Community and Biodiversity Alliance, IUCN, the Rainforest Alliance and Verra, among others. LandScale evaluates the sustainability performance of entire landscapes where commodities are produced. The tool can measure the progress of production models and provide data-based performance results across environmental, social, and economic dimensions. This allows financial incentives to be aligned to specific outcomes. The landscape-level focus sets this standard apart from most other sustainability schemes, which target individual production sites, activities, or sectors.⁹¹

Payments for ecosystem services

Ecosystem service loss or degradation driven by unsustainable agricultural practices can have significant implications not only from an environmental conservation perspective, but can also generate negative downstream and upstream supply chain effects, leading to economic costs. Various approaches to valuing and monetising ecosystem services have been developed to provide incentives to counter environmental degradation. These payment for ecosystem services (PES) schemes can provide an important top-up on the revenues derived from productive investments, and help improve the overall profitability of sustainable land use activities.

PES schemes relate to incentive-based mechanisms through which ecosystem users or beneficiaries receive economic compensation for maintaining an ecosystem's ability to provide critical services. These may include provisioning services such as food, timber, fresh water and clean air; regulating services such as pest control or pollination, or cultural services such as recreation and landscape aesthetics. To be able to secure the continued delivery of these services, land use investments — besides targeting productivity increases — also need to be designed to maximise impact on habitat conservation, improved watershed services, or carbon sequestration. Robust monitoring, reporting and at times third-party auditing of generated benefits is at the core of PES schemes. In principle, PES schemes can be supported by different types of actors. Private entities may engage in PES schemes to offset certain compliance obligations, such as polluting

companies offsetting their greenhouse gas emissions impacts through participation in the international carbon market, or corporates looking to meet voluntary climate neutrality or zero-deforestation pledges. Public entities, in turn, may use PES approaches to disburse results-based grants to land use programmes. While some PES schemes operate as internationally recognised payment schemes, PES approaches can also be uniquely designed to fit a specific context and may lack standardised methodologies for quantifying impacts. For example, in Indonesia various approaches to maintaining watershed services have been tested, involving different buyers (e.g. state-owned enterprises, private companies, water associations) and supporting different activities (e.g. agroforestry, river bank conservation, construction of terraces). In many cases, the beneficiaries of these schemes were groups of smallholder farmers residing in the targeted regions.⁹²

The international carbon market remains the most formalised approach to monetising environmental benefits

The international carbon market remains the most formalised approach to monetising environmental benefits, despite decades of experimentation with the implementation of various PES schemes. As demand for carbon offsets from nature-based solutions is on the rise⁹³, this may offer opportunities for sustainable land use investments, which currently still make up a minor share of all registered carbon projects. The extent to which smallholder activities may benefit from carbon revenues will depend on the ability of programmes to achieve sufficient scale. Smaller programmes will struggle to generate a business case for carbon certification, given the high upfront costs associated with getting a new programme registered. The business case for larger sustainable land use programmes that include a smallholder component may however be more apparent, as carbon offsets generated by such programmes could sell at a premium given the broad range of sustainable development benefits associated with them (Box 12). PES schemes targeted at protecting biodiversity are not yet well developed. Such schemes involve payments made to landowners to manage their land in a way that maintains or enhances biodiversity, habitats and species. But the complexity of biodiversity makes establishing a baseline, and the subsequent monitoring of impacts, more difficult than in carbon sequestration schemes. Evidence suggests that the effectiveness of such PES approaches could be enhanced by combining carbon and water service activities with biodiversity conservation measures, furthering the case for bundling programmes that address multiple ecosystem services.⁹⁴ To date, biodiversity schemes have largely focused on plant species diversity, which can indirectly yield benefits for agri-environmental schemes and agricultural production quality. As such, biodiversity PES schemes — when nested within broader sustainable agriculture programmes — hold promising potential to both conserve biodiversity and yield productivity gains for smallholders.⁹⁵

Box 12: Carbon finance in sustainable land use

Sustainable land use activities can generate alternative income streams from monetising the greenhouse gas emissions that are being sequestered or reduced. Carbon accounting methodologies currently available focus on sustainable land management practices that increase the carbon stock of soil and/or above ground stocks. Examples of eligible activities that may be relevant in the context of smallholder finance programmes include tillage management, the use of cover crops, tree planting, manure application or reduced use of chemical fertiliser.

Carbon projects can vary in size, covering either specific interventions in individual landscapes, or targeting entire regions or jurisdictions, as exemplified by reduced emissions from deforestation and forest degradation (REDD+) programmes. PES in the form of carbon sequestration may not only provide regular income streams, but can also be used as a guarantee mechanism within a broader programme. One example of such an arrangement is the loan agreement extended by Althelia (now Mirova Natural Capital) in support of the Tambopata-Bahuaja REDD+ programme (see Case Study 2, Chapter 4).

Emission reduction compliance obligations as well as voluntary carbon-neutrality pledges by corporates are fuelling the demand for carbon credits. Transaction volumes in the voluntary carbon market observed over a three-fold increase in carbon credits generated by nature-based solutions (such as reforestation and regenerative agriculture) between 2016 and 2018, and in 2019 continued growth in land-use based carbon credits was observed.⁹⁶ Carbon prices remain volatile, averaging at around USD 3 per tonne in 2018 for land use credits; although considerably higher prices can be observed for certain programme types, such as activities with the Climate, Community and Biodiversity Standard distinction.

But accessing carbon finance is not straight-forward. Registering a carbon programme — and monitoring its performance — remains a costly undertaking. Carbon revenues are also slow to materialise. Only once emission reductions have been verified by an auditor, and a buyer is secured, are pay-outs made. In addition, concerns with inflated baselines for certain activity types mean that some projects are at risk of over-issuance of carbon credits.⁹⁷

3.6 SMALLHOLDER FINANCE DELIVERY MODELS

There are no prescribed models through which finance can most effectively flow to smallholders. To a large extent, finance delivery models will build on the type of financial and value chain actors present in the target region, their capacities for handling agricultural investments, and the presence of intermediaries that can facilitate ‘last-mile’ financial outreach to farmers. In some cases, the relationship between the original funder and the smallholder will be very direct, as in the case of cooperative lending or microfinancing. In other scenarios, there may be a need for more complex financing structures requiring the participation of different types of funders and dedicated investment funds.

Below we categorise smallholder finance delivery models based on the type of investor and their relationship with farmers. In particular, we make a distinction between financing schemes led by producer cooperatives, microfinance institutions, corporate off-takers active in a specific value chain, or dedicated investment vehicles. In the first three models, financing can originate directly from the lead organisation, or come from external financiers. In the fourth case, funding by default flows through at least one intermediary before reaching smallholders.

Innovations introduced by fintech and agtech companies will radically impact the way financiers and farmers interact

It is important to note that while we present tested financing approaches, the growing maturity of fintech companies active in agricultural markets and advancements in the use of blockchain and artificial intelligence will radically impact the way financiers and farmers will interact, with fintech companies either directly competing with existing financial service providers and their traditional ways of handling financial processes, or teaming up to benefit from synergies. So, while this list is not exhaustive, it serves to capture common ways of channelling funds, which innovations in digital services can further help to streamline. Some of these models are ‘brought to life’ in Chapter 4, where a number of international case studies of impactful smallholder finance schemes are presented.

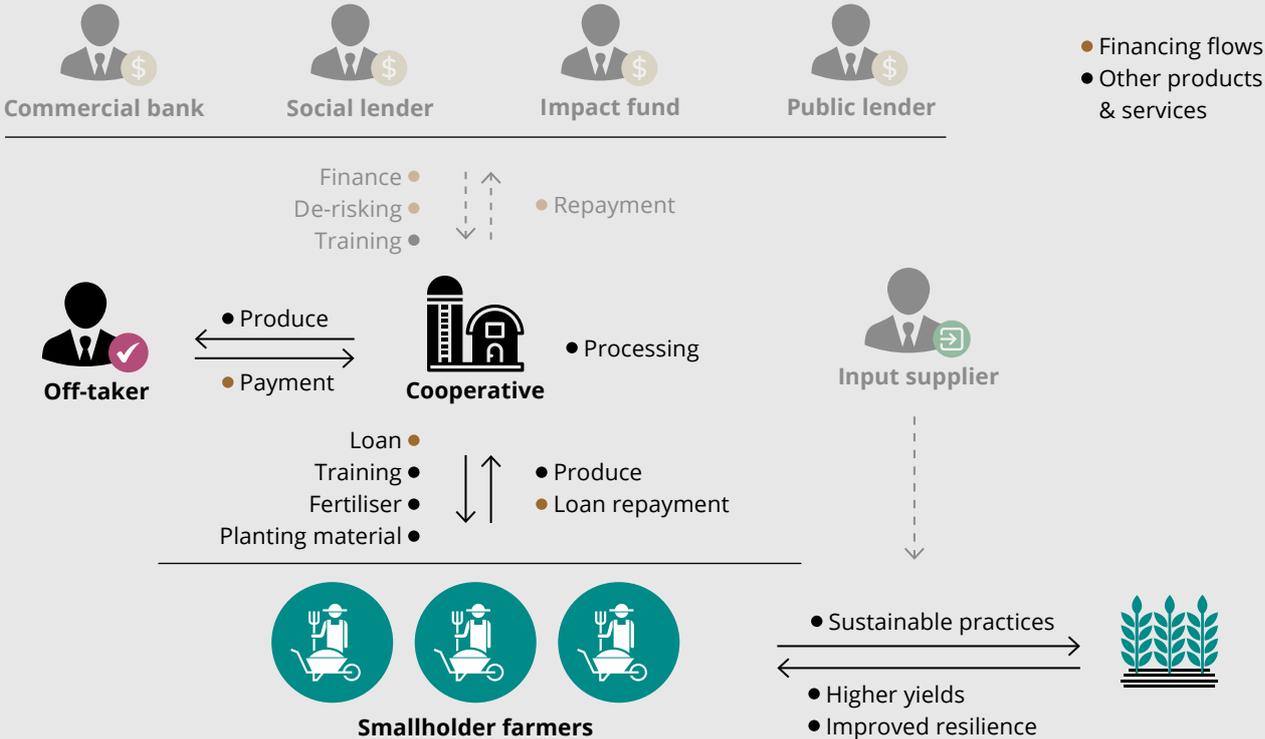
Cooperative model

In the cooperative model, a producer cooperative acts as the principle financier of smallholders. Cooperative business models target the pooling of production to facilitate access to markets and help producers to maximise the revenues generated from their agricultural activities. Key activities that facilitate this process include the provision of inputs, market intelligence, value-added services (e.g. processing and warehousing produce), as well as negotiating off-take agreements on behalf of their members.

Well capitalised cooperatives can also deliver financing to smallholders directly. Given that cooperative members typically target the production of the same products, they represent a community with shared financing needs, allowing for the tailoring of financial support for the benefit of all members.

In its simplest form, cooperatively owned and run community savings and credit schemes financed by cooperative members can offer farmers access to short-term working capital loans to help with the purchase of inputs, or cover labour costs. Cooperatives that have a track record with smallholder credit extension, have proven effective at generating cash flows through operations, and have experience with managing balance sheet risk may also be in the position to act as investees and secure investment from external sources, such as commercial banks, social lenders, or impact investors (Figure 5). Access to external capital – combined with the use of digital technology – may give cooperatives the opportunity to scale up their financing activities and better tailor their financial support to smallholders. Refer to Case Study 1 in Chapter 4 for an example of an investment handled through the cooperative model.

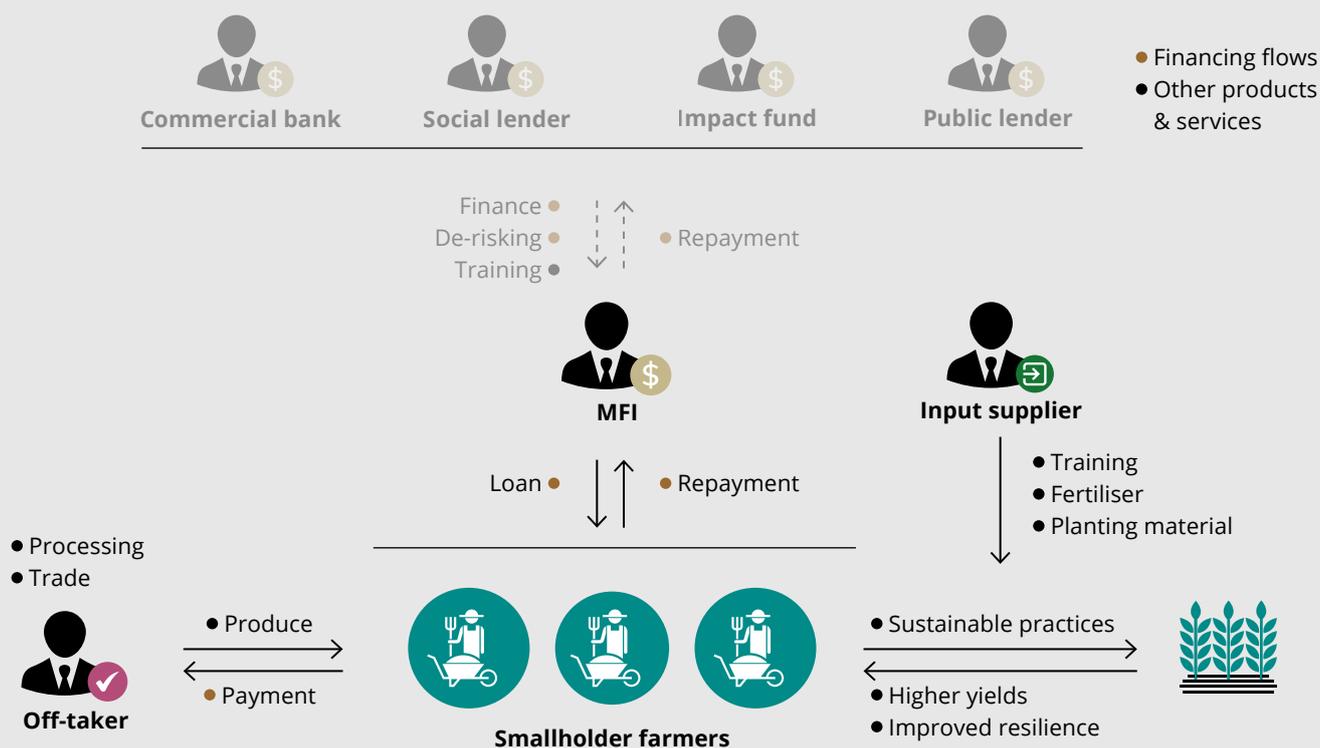
Figure 5: Finance flows and provision of other inputs through the cooperative model



Microfinance model

As discussed in Section 3.1, MFIs are well established across Southeast Asia and play an important role in providing financial services to smallholders. By being locally present, these financiers are experienced rural lenders, and can design products that are adjusted to meet the credit need for specific agricultural practices while keeping servicing costs at a manageable level. Apart from loans, MFIs can also offer other products such as insurance or the ability to channel remittance finance and establish savings accounts, as well as technical assistance. This plays an important role in building rural financing systems and strengthening the financial acumen of borrowers, supporting the wider financial inclusion of rural communities. MFIs can use their internal capital earned by repayment of outstanding loans and their savings programmes to extend credit to new customers. In the context of financing sustainable farming practices, MFIs may require financial support from external financiers to de-risk their exposure, or to scale up the amount of credit offered (Figure 6). For example, social lenders or public financiers may extend credit (or grants) to an MFI to allow it to soften its lending term, reducing the barriers for smallholders to invest in new practices. As MFIs focus on credit extension, the model must be supported by input providers and tailored technical assistance to ensure that smallholders are capacitated to manage the transition. Refer to Case Study 5 in Chapter 4 for an example of an investment handled through the microfinance model.

Figure 6: Finance flows and provision of other inputs through the microfinance model

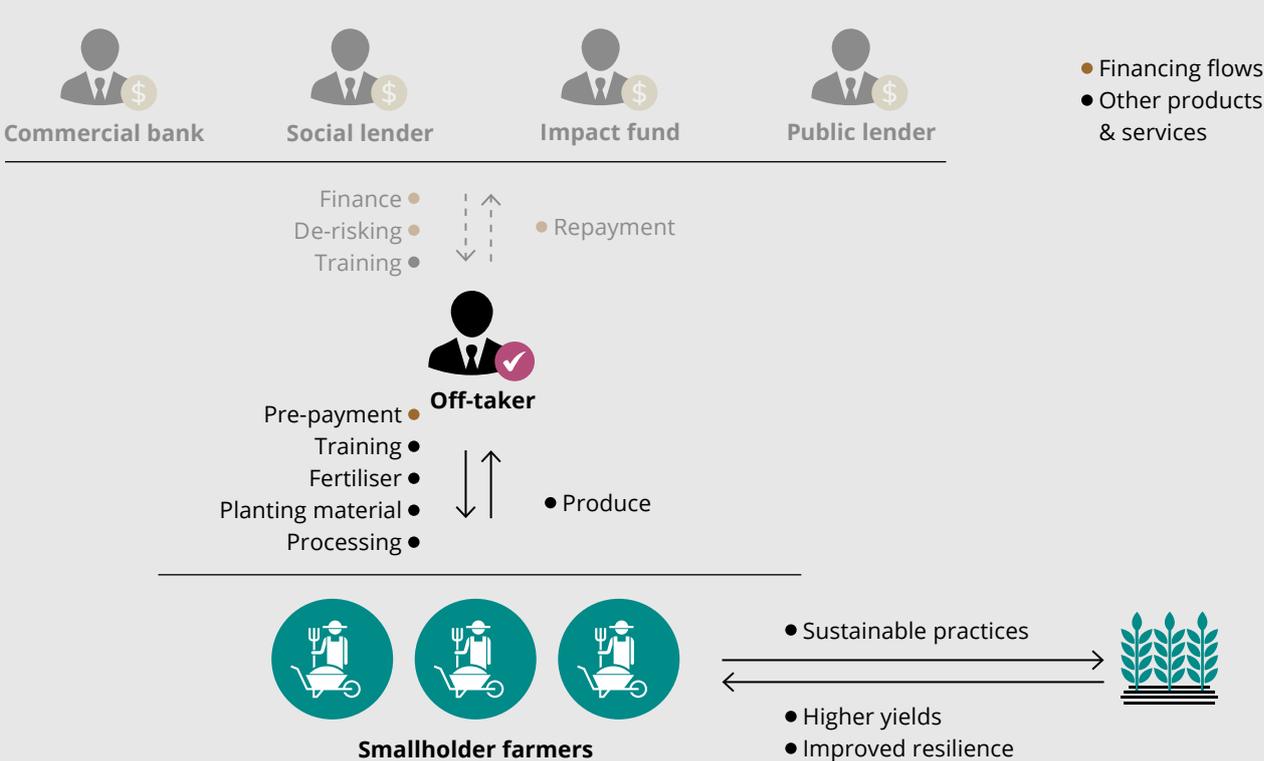


Out-grower model

In an out-grower scheme, networks of smallholders are mobilised to farm produce for an off-taker. Given the strong interdependency of the two, buyers of produce can act as a financial service provider to smallholders in the absence of other sources of funding. Most commonly, off-takers will provide prepayment in the form of fertiliser or pesticides in combination with training on agricultural practices to allow farmers to maximise their production efficiency. Payment deductions are subsequently applied upon crop purchase. In most cases, the pre-financing is made available directly by the buyer. In programmes where off-takers commit to incentivise the uptake of sustainable agricultural practices, external financiers may step in to help de-risk the investment for an off-taker (Figure 7).

For an out-grower model to work effectively and deliver a win-win for both smallholders and companies, clear collaboration agreements must be put in place to ensure equitable working conditions and enable contract enforcement. The use of formal contracts stipulating volume and quality specifications, as well as minimum guaranteed pricing combined with farmer loyalty programmes can give smallholders the incentives to commit to selling to the off-taker. Due to the risk of side selling by farmers, out-grower models are more commonly applied to cash crops rather than staple crops, as cash crops are more difficult to monetise in local markets.

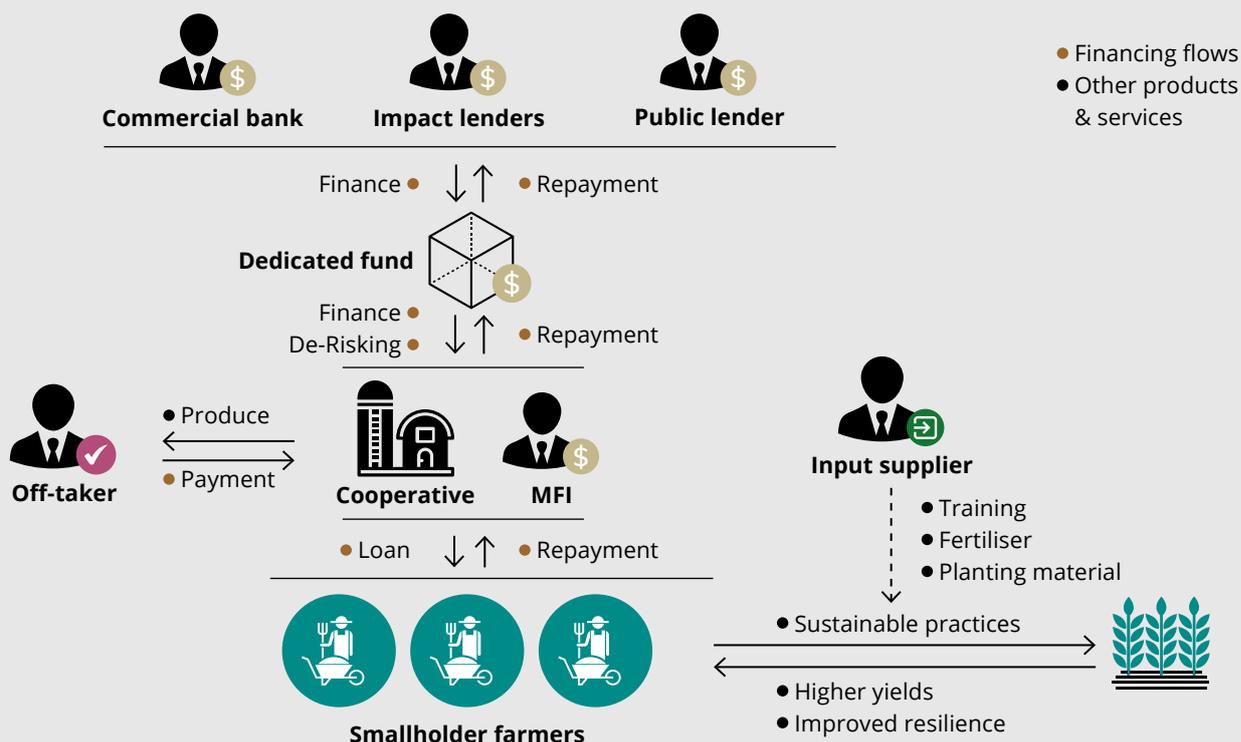
Figure 7: Finance flows and provision of other inputs through the out-grower model



Investment fund model

In the first three financing models, funding is either directly supplied by an organisation servicing or working with smallholders, or originates from external investors who use the local presence of producer cooperatives, microfinance institutions or off-takers to reach smallholders. These financing approaches represent the most common structures through which finance to smallholders can be delivered, and are suitable for programmes whose primary aim is to support smallholder agricultural activities. In larger investment programmes targeting different types of sustainable land use practices on a landscape or regional level, capital from investors is often pooled in a dedicated investment fund. A fund serves to combine and layer the different sources of financing under one umbrella, allowing for investments to be ringfenced (rather than sitting directly on the balance sheets of funders). Usually a dedicated asset management firm is responsible for managing the fund. By blending different sources of finance under one structure, funds can adapt the terms of finance depending on the objectives and commercial attractiveness of funded business models. Investments in sustainable farming practices by smallholders could be one specific target area. In most cases, funds will not directly extend financial support to farmers, but will collaborate with producer cooperatives or microfinance institutions to secure ‘last-mile’ service delivery (Figure 8). Refer to Case Study 2 in Chapter 4 for an example of an investment handled through the investment fund model.

Figure 8: Finance flows and provision of other inputs through the fund model



Box 13: Applying safeguards in sustainable land use investments

Despite the overall intention to protect natural capital and improve the livelihoods of local producers, sustainable land use investments could result in negative side-effects if not managed properly. To prevent this from occurring, finance needs to be coupled with strict safeguards that are actively monitored, and failure to comply with these codes of conduct should incur penalties to align incentives.

Financial institutions in the Southeast Asian region are currently lagging in the adoption of policies that address environmental risks and social issues. WWF's Sustainable Banking Assessment 2020 shows that only 13 out of 38 regional banks factor in their Environmental and Social criteria when making client acceptance decisions. Ten banks require clients that are not fully compliant with the banks' Environmental and Social policies to have time-bound action plans to bring themselves in line. And only six banks disclose any process for addressing non-compliance.⁹⁸ Given this limited attention to E&S issues, regional banks are failing to recognise the opportunities associated with transitioning to more sustainability-driven business models.

Where commercial funders lack appropriate safeguards, civil society institutions can play an important role in supporting efforts to integrate E&S safeguards on the investment level. Existing standards defined by international organisations and initiatives can help define the approach for doing so:

- Equator Principles, a risk management framework that builds on IFC Performance Standards for determining, assessing and managing environmental and social risk of projects (typically applied to project finance);
- UN Global Compact principles, which list ten good practices in the areas of human rights, labour, environment and anti-corruption;
- UN Principles of Responsible Investment, which define six principles of responsible investing relating to ESG factors;
- Operating Principles for Impact Management, a framework to ensure that impact considerations are integrated throughout the investment life cycle;
- Principles for Responsible Investment in Agriculture and Food Systems.

Production standards and certifications (e.g. Rainforest Alliance, FSC, RSPO) also offer safeguard assessment protocols. Value chain investors often look to incorporate certified commodity production to facilitate

Box 13: Applying safeguards in sustainable land use investments

access to market and attract international buyers. Defining smallholder finance standards based on these established approaches within relevant value chains can facilitate the certification process further down the road, when production scale increases and demand can be secured.

While safeguards need to be clearly defined at the onset of implementation, not all conditions can be defined upfront, and requirements can evolve over time. For example, smallholders may be given a number of years before they are required to transition to a fully biological fertiliser system, with financial incentives (such as loan instalments) tied to annual milestones to ensure gradual progress. Another example is the pace at which smallholders need to transition to agroforestry practices, which may need to take place in phases in order to spread the initial investments and allow smallholders to sustain sufficient income levels during the transition period.



4. INTERNATIONAL CASE STUDIES

While there is no silver bullet for getting smallholder finance 'right', international experiences are generating valuable lessons that can help inform the design and implementation of impactful smallholder finance schemes across the Southeast Asian region.

This chapter presents five case studies that showcase the diversity of approaches that can be pursued to support the implementation of smallholder finance schemes, highlighting the perspectives of a social lender, an impact investment fund, an asset manager, a non-profit organisation and an agritech start-up.



CASE STUDY 1

The Coffee Farmer Resilience Initiative: Using blended finance to support smallholder coffee producers in Latin America

After an outbreak of coffee leaf rust affected nearly half of all coffee-growing areas in Central America, the region required action that was beyond the capacities and resources of smallholders and local coffee enterprises. Root Capital, a non-profit impact investor, stepped in to provide capital and technical support to counter the disease's impact.

This case study illustrates how a combination of blended finance and public-private cooperation of stakeholders in the coffee value chain responded to a regional economic and environmental crisis, allowing smallholders to access affordable renovation and rehabilitation loans to continue producing coffee for international markets.

Background

An outbreak of La Roya — the coffee leaf rust disease — spread through Central America in 2012 and devastated vast areas of coffee plantations. The outbreak killed large swathes of trees, resulting in farms needing to be replanted or abandoned altogether. The disease impacted up to half of all coffee growing areas in the region.⁹⁹ This led to a sharp decrease in production, with levels in countries such as Honduras, Guatemala and Nicaragua dropping by as much as 25 percent.¹⁰⁰

Root Capital, a non-profit impact investor, was at the time managing a portfolio of investments in coffee enterprises in the region. Coffee leaf rust led to heavy losses for affiliated producers, with some losing more than 50 percent of their coffee trees.¹⁰¹ To deal with this challenge, Root Capital established the Coffee Farmer Resilience Initiative (CFRI) in partnership with development institutions, private corporations and foundations to deploy capital and technical support to counter La Roya's spread, and help rehabilitate and renovate affected farms.

Scope of support

The initiative channelled financial support to local coffee cooperatives, which used their internal credit funds to on-lend the Root Capital loans to individual farmer members. Individual farmers then used the loans to fund renovation and rehabilitation efforts on their coffee farms.

To assist cooperatives in managing this long-term financing, the CFRI also provided technical support to partner cooperatives, including: financial management training to build cooperative capacity to extend, monitor, and recover loans to farmers; and agronomic training to build cooperative capacity to develop and implement multiyear technical assistance plans focused on renovation and rehabilitation.¹⁰² Root Capital also provided small grants to a subset of participating cooperatives to seed related investments in technical assistance programming, such as the hiring of additional cooperative agronomists.

The coffee enterprises funded by CFRI then supported their smallholder suppliers to address the spread of coffee leaf rust through technical assistance related to:

- the proper timing and usage of fungicide to combat the Roya fungus;
- rehabilitation, which involved pruning, stumping and grafting of infected trees followed by input and fertiliser;
- renovation, which involved tree removal and replanting. This was the most resource-intensive intervention and required careful planning, technical knowledge, and access to improved planting materials and inputs. While the most effective long-term solution, it was the most challenging to implement;
- climate-smart agricultural practices (e.g. cover crops, planting shade trees) or income diversification strategies to improve farmer resilience to future shocks.

Engagement of smallholders

By supporting the renovation and rehabilitation of affected coffee farms, the CFRI enabled farmers to improve farm resilience and productivity

The objective of the CFRI was to support the renovation and rehabilitation activities of affected coffee smallholders, enabling their farms to become more productive and resilient. As final beneficiaries of the financing support, smallholders were responsible for implementing funded farm activities themselves, with targeted support from their cooperatives' technical assistance teams.

Local data on renovation costs of smallholder farms was not widely available when the initiative was launched, and Root Capital worked with its partner cooperatives to evaluate these costs, including coffee seedling production, transport, planting, and maintenance over the first several years until the coffee trees became productive. Results indicated typical costs ranged from around USD 5,000 to USD 12,000 per hectare over the three to four year renovation period. Almost three-quarters of these costs went to external labour (e.g. seasonal or day labourers), with the remaining costs going to seedlings (15 percent), inputs (10 percent) and farming tools (5 percent).



Financing model

Root Capital mobilised private and public financiers to catalyse its newly formed Coffee Farmer Resilience Fund, the financing mechanism behind the CFRI. The fund delivered its first loans to affected coffee enterprises in late 2013. Financial resources were secured from the following partners:¹⁰³

- the Inter-American Development Bank's Multilateral Investment Fund, the Ford Foundation, and Starbucks Coffee Company committed long-term investments (seven to 10 years) amounting to USD 12.5 million to directly support lending activities to farmers;
- Keurig Green Mountain (now Keurig Dr Pepper) and USAID Development Credit Corporation delivered de-risking in the form of credit enhancements. Keurig Dr Pepper allocated USD 400,000 in first-loss capital to the fund, equivalent to around three percent of target credit disbursements. USAID offered a 50 percent guarantee of up to USD 15 million, meaning that the donor would absorb half of the loss for every dollar not repaid by coffee enterprises after the USD 400,000 first-loss coverage was depleted;
- in addition to the credit enhancement, the USAID Bureau for Food Security also funded a USD 2 million grant programme, designed to fund complementary investments in coffee enterprises, technical assistance programming for smallholders;
- other donors stepped in to cover costs associated with programme design, mobile technology activities and impact assessment efforts. These funders included the DOEN Foundation, Open Road Alliance, the Skoll Foundation, and the Swedish Postcode Foundation. The Progreso Foundation, a Netherlands-based non-profit, and the Junta Nacional del Café, the Peruvian trade association, provided technical advice.¹⁰⁴

The fund allowed Root Capital to extend long-term loans to coffee cooperatives sourcing from farmers affected by La Roya. These loans included tenors of three to seven years and interest rates of 7 to 10.5 percent.¹⁰⁵ Importantly, principal repayment was aligned to the productivity cycle of the new coffee plants, which would not produce coffee for the first several years, through a multiyear grace period on repayments. In addition to this, short-term loan products were also offered to support cooperatives with more immediate investments.

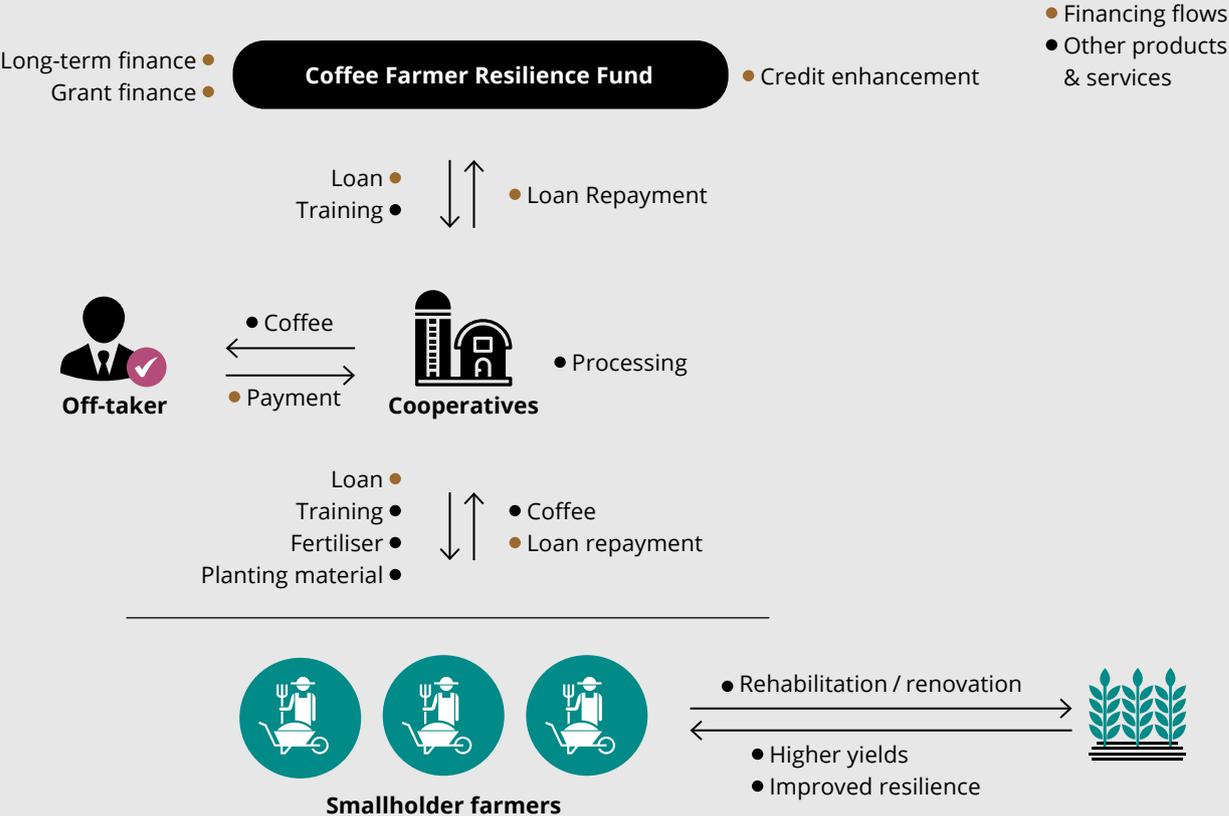
Coffee cooperatives on-lent the Root Capital funds to individual farmers through their internal credit funds, managing farmer selection, loan disbursement, ongoing monitoring, and collection of repayment.

The value of loans made to individual farmers typically ranged between USD 3,000 to USD 5,000 per hectare.¹⁰⁶ To make sure that these cooperative partners operated functioning credit funds, Root Capital conducted detailed due diligence, assessing their capitalisation strategies, governance structures, and availability of collateral; and offered financial training to build cooperative capacity in this area as needed.¹⁰⁷

Impacts

Within the first two years of operations, the fund approved USD 9 million in loans to nine local enterprises. These loans helped 1,335 smallholders to renovate 3,500 hectares of land across Honduras, Mexico, Nicaragua and Peru. Farmers supported through the coffee enterprises’ technical assistance programmes were more likely to adopt environmental conservation practices, such as soil ridges, terracing, and/or ground cover for erosion control, water conversation techniques, and use of organic fertiliser. In addition, farmers experienced gains in productivity as new trees planted through the initiative began producing coffee.¹⁰⁸

Figure 9: Financing structure of the Coffee Farmer Resilience Initiative



Long-term renovation loans were critical to help farmers overcome the 'valley-of-death'

Lessons learned

Tailor the terms and conditions for loan repayment to the needs of borrowers. A key aspect of the CFRI was the design of financial products that match the specific needs of coffee enterprises and farmers. The long-term renovation loans were designed to help farmers overcome the 'valley-of-death' threat, during which coffee plants are not yet mature and are not generating income for farmers. Furthermore, the blending of financial resources allowed the initiative to extend loans on concessionary terms, such as the grace period, that coffee enterprises and smallholder farmers could afford to repay. Without these favourable terms and conditions, farmers would not be able to engage in these intensive investments.

Provide tailored technical assistance to on-lenders. Using local agricultural enterprises as the key counterparty and delivery agent of the financing was an effective way to reach smallholders. However, these agricultural enterprises faced a number of their own capacity constraints. The CFRI responded by utilising a robust set of pre-selection criteria and a due diligence process that fully assessed the enterprises' capacities, and offered targeted technical assistance to areas that were lacking (including managerial, internal credit, and agronomic advisory). This increased their ability to reach and on-lend to farmers, while reducing the risk of non-repayment.

Secure financial support that can de-risk investments. The financial mechanism behind the CFRI introduced risk mitigation instruments to crowd-in private investment. Given the importance of the region to the global supply of coffee, the leaf rust outbreak resulted in a direct operational risk to long-term supply. Private partners — who depend on a high-quality supply of coffee — aligned in the need to take action but had a limited tolerance for risk. First-loss capital provided by coffee company Keurig Dr Pepper and a partial risk guarantee secured from USAID were critical for reducing risk to a level acceptable for these investors.

Significant investment in renovation activities is still needed. While CFRI enabled coffee cooperatives and farmers to respond to the immediate crisis of La Roya, smallholder coffee renovation remains a pressing need throughout Latin America and around the world due to decades of underinvestment in replanting. In many cases, the scale of the investment required is far beyond the reach of individual smallholders. Ongoing initiatives in the specialty coffee sector are starting to recognise the need to transition toward a model of ongoing, incremental renovation of smallholder farms to improve farm economics and secure future coffee supplies.

CASE STUDY 2

The Tambopata-Bahuaja REDD+ programme: Using carbon finance to leverage investment in smallholder cocoa producers in Peru

Two protected areas in Peru's Amazon Rainforest are under threat from unsustainable agricultural practices, logging and illegal mining. To reduce pressure on these protected areas, Althelia Funds, an impact investment fund, in partnership with a local NGO and the Peruvian government are delivering long-term conservation finance to protect nearly 570,000 hectares of threatened natural forest.

This case study illustrates how a public-private partnership can unlock access to international carbon markets, allowing smallholder investments in improved agroforestry systems to be de-risked.

Background

The Tambopata National Reserve and the Bahuaja Sonene National Park are located in the Madre de Dios region of Peru. These areas are recognised biodiversity hotspots, and their health is fundamental to the livelihoods of local communities. Yet unsustainable agricultural practices, alongside logging and illegal mining, are threatening the existence of these fragile ecosystems.¹⁰⁹

The investment aims to reduce local deforestation and forest degradation by restoring vital bufferzones through improved agroforestry systems

Althelia Funds (one of the funds of Mirova Natural Capital, an impact investor), Asociacion para la Investigacion y Desarrollo Integral (AIDER) and the Peruvian Ministry of Environment's National Service for Natural Protected Areas (SERNANP) partnered up in 2014 to provide long-term conservation finance to support nearly 570,000 hectares of threatened natural forest. The aim of the investment is to reduce local deforestation and forest degradation by restoring vital buffer zones through improved agroforestry systems that aim to produce 'deforestation-free' cacao produced by smallholder farmers. Financing leveraged through the international carbon market plays an important part in the overall financing structure.

Scope of support

The conservation and smallholder finance activities supported under the investment are bundled under a REDD+ programme registered under a voluntary carbon standard (the Verified Carbon Standard and Carbon, Community and Biodiversity Standard). The programme covers the following aspects:

- restoration of degraded lands within buffer zones through the establishment of cocoa plantations in agroforestry systems (where cocoa trees are grown underneath the rainforest canopy) managed by smallholders;
- aggregation of cocoa farmers through the establishment of a new cooperative (COOPASER) that supports smallholders with accessing the needed agricultural infrastructure (e.g. dryers, fermentation facilities, trucks) and coordinates sales of cocoa to international buyers;
- smallholder certification of organic and Fairtrade cocoa in areas at high risk of encroachment;
- technical assistance and training to improve agroforestry practices and stimulate other productive activities, such as sustainable timber management;
- provision of farming inputs valued at USD 2,000 per hectare, distributed over the course of several years;¹¹⁰
- biodiversity monitoring, research, control and surveillance of the protected forest.

Althelia Funds is the programme's primary financier and fund manager, with AIDER delivering technical support and ground-level implementation, and SERNANP providing additional financing and implementation support.

Engagement of smallholders

Smallholder farmers belonging to the COOPASER cooperative are directly targeted by the programme, which represent a ten percent share of the nearly 11,000 people residing in or around these protected areas. The cooperative, with support from AIDER, provided training to local producers on the setup of cocoa nurseries, seedling grafting techniques and rehabilitation. Smallholders were also encouraged to plant mixed crops as alternative sources of income and to improve food security, at the same time providing shade for cocoa plants. The cooperative structure allows for a higher return from cash crops by pooling produce and using its negotiation position to

secure higher prices.¹¹¹ The certified Fairtrade cocoa also provides access to additional premiums.¹¹²

Membership to the cooperative requires individual farmers to prove formal land title or provide proof of possession of farm, sign a zero-deforestation commitment, as well as commit to establishing at least three hectares of cocoa. A flawed system of land titling in the area, as well as overlapping land claims, means that the requirement for proof of title or possession poses a barrier for smallholder farmers wishing to participate in the project. To address this issue, a land titling programme promoted by Peru's Ministry of Environment and the Development Bank of Latin America (CAF) is working to formalise nearly ten thousand individual farms within 20 communities in the region. In 2018, nearly 300 land titles had been secured for smallholder farmers in the programme area, enabling these smallholders to join the cooperative and benefit from the programme's support.¹¹³



Financing model

Althelia Funds made available a EUR 5.8 million loan to enable AIDER, the programme implementer, to implement activities over a six-year period (2014 – 2020). The loan was offered to AIDER at an interest rate below the average market rate of commercial banks and with a three-year grace period over capital repayment. The resulting operational and financial flexibility took pressure off the NGO to generate cash flows in the beginning of the project.¹¹⁴ The loan covers two main types of landscape activities: production and protection:¹¹⁵

- for production, EUR 3.6 million was allocated for supporting 1,250 hectares of agroforestry systems and the launching of a cocoa producers' social business;
- for protection, EUR 2.2 million was allocated for controlling and monitoring the conservation efforts of the reserve, as well as the generation of carbon credits.

Rather than being supported with direct credit, members of COOPASER receive an in-kind package of farming inputs, valued at USD 1,500 per hectare, which is disbursed over a period of three years. The package consists of cocoa seedlings, high quality grafting materials, fertiliser and farm tools, and is delivered alongside targeted technical assistance. The use of in-kind support in place of a loan allows COOPASER to ensure that capital is used for input purchase rather than other expenditure, as well as that the used inputs are of a good standard.

The investment was originated through the Althelia Climate Fund, a fund that invests in initiatives that reduce deforestation, mitigate climate change, and/or protect biodiversity. In 2014, the USAID Development Credit Authority entered into a partnership with Althelia to provide a guarantee of EUR 100 million, covering up to half of the fund's performance on a portfolio basis. This guarantee significantly reduced risks for private sector lenders, and attracted institutional investors to the fund. As part of the investment structure, AIDER uses the carbon credits generated and sold by the programme to repay the loan. A share of the carbon credits is also collateralised to serve as security for the loan, meaning that a certain volume of future carbon credits is tied to the loan repayment in case of a default. Ultimately, the programme's aim is to repay the loan through the revenue streams from the sales of sustainable cocoa and carbon emission rights.¹¹⁶ Althelia Funds maintains control over the revenue stream of the carbon credits throughout the repayment term of the loan. Over the course of the loan, approximately 4 million tCO₂e reductions have been generated from avoided deforestation. At a floor price of USD 3 per tonne, the total

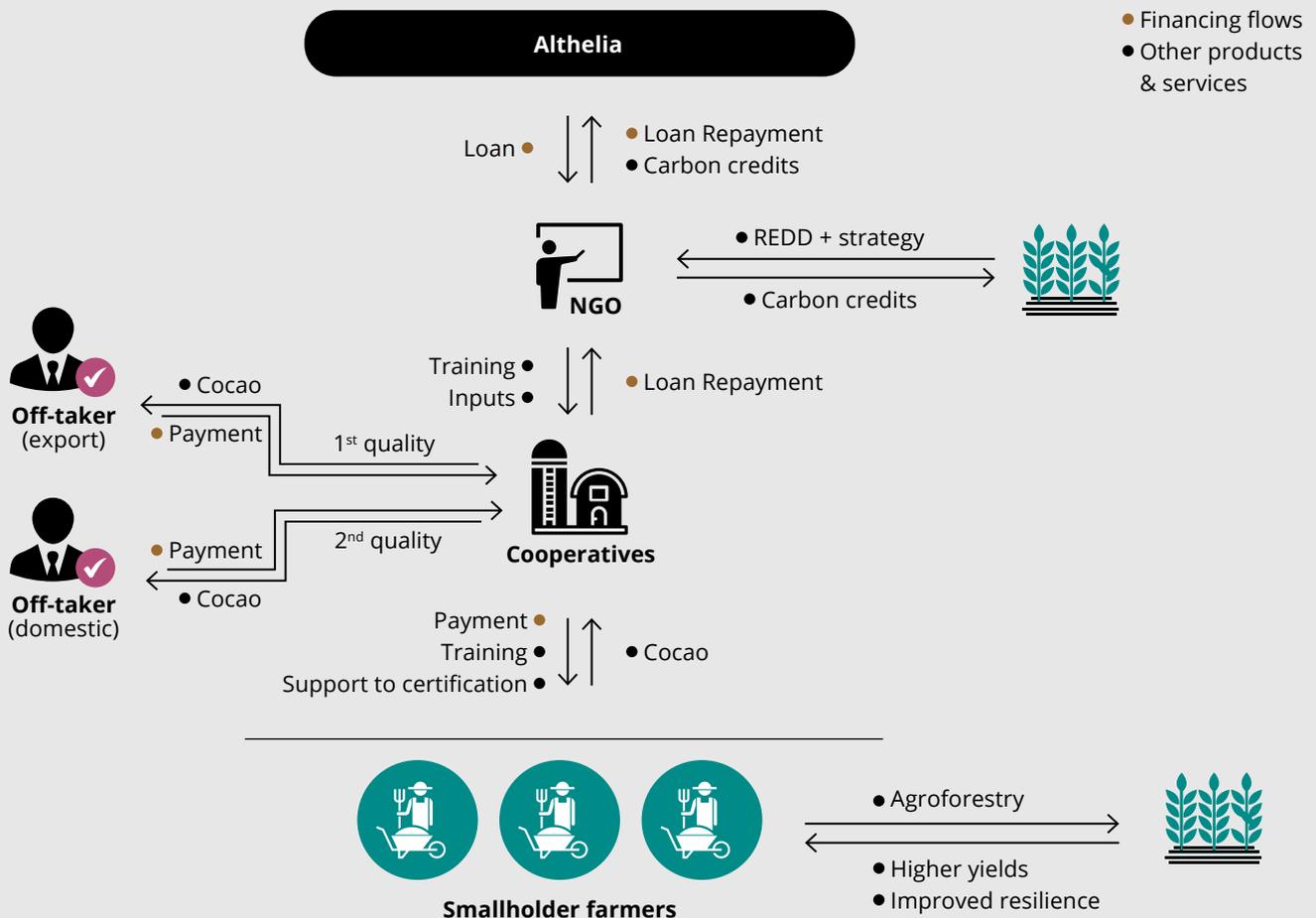
carbon credits would be USD 12 million, enough to repay the entire programme investment.

Impacts

The impacts of the Tambopata-Bahuaja REDD+ programme to date include:

- preserving nearly 570,000 hectares of natural rainforest;
- supporting sustainable land use activities on an additional 12,000 hectares managed by smallholders;
- avoiding 4 million tonnes of CO₂e emissions over the first seven years, part of which has already been certified as REDD+ carbon credits, and monetised;
- increasing organic matter in the soil, reducing erosion, and improving water absorption through the uptake of agroforestry. At full scale, the target area is yielding approximately 3,000 tonnes of certified deforestation-free organic and Fairtrade cocoa per year.¹¹⁷

Figure 10: Financing structure of the Tambopata-Bahuaja REDD+ programme



Lessons learned

Secure financial support that can de-risk investments. The guarantee provided by USAID was critical for Althelia Funds to be able to de-risk the investment proposition, thereby attracting private sector investment into a sector that otherwise would not be targeted by commercial funders. This financial comfort, combined with the carbon collateral, facilitated Althelia Funds to structure its loan to AIDER with a three-year grace period to give the investee the time to support smallholders in the transition to agroforestry practices. This was especially relevant in the context of cocoa plantations, as cocoa trees typically start producing yields only three years after being planted.

Use technical assistance to strengthen market access. The use of differentiated market channels to commercialise cocoa (e.g. organic, Fairtrade, deforestation-free cocoa) allowed the programme to achieve stable demand and premium pricing for its produce. The establishment of the cooperative was necessary to consolidate supply and facilitate access to off-takers. It furthermore supported the negotiation power of smallholders. Initial upfront costs associated with setting up the cooperative were offset over time by consolidating the supply side, centralising payment processes, and reducing operational costs. The presence of AIDER, a locally rooted NGO with 30 years of experience in the implementation of similar projects in the area, was vital for the successful implementation of the technical assistance.

Do not solely rely on payments for ecosystem services. Monetisation of the protected area's ecosystem services — in this case the carbon sequestration potential of the conserved forest — was the basis for structuring the loan agreement between Althelia Funds and AIDER. However, given the uncertainty regarding the price development of generated carbon credits, as well as the time it takes to monitor and verify realised emission reductions, the programme also incorporated the revenue streams from the sales of sustainable cocoa sold through the cooperative as a key cash flow stream to serve repayment of the loan. Conservation or sustainable land use programmes aiming to monetise natural capital benefits should always consider diversifying income streams to avoid reliance on one source of revenue.

CASE STUDY 3

The Sustainable Commodities Conservation Mechanism: Using corporate zero-deforestation pledges to incentivise community forest management

The uptake of zero-deforestation pledges by corporates and commodity-specific sustainability certification schemes are creating new opportunities for financing sustainable landscapes, benefitting the communities that reside in them.

This case study illustrates how a results-based payment facility set up by Lestari Capital is mobilising long-term finance from corporates for conservation and restoration projects. The facility is collaborating with members of the Roundtable on Sustainable Palm Oil and companies with zero-deforestation pledges in the palm oil sector.

Background

The Nanga Lauk Village Land¹¹⁸ represents a tropical forest landscape located within the Heart of Borneo region in Indonesia. The landscape covers an area of approximately 10,000 hectares and consists of peat swamp, riverine forest and lake ecosystems, and includes a 1,430 hectares Village Forest.¹¹⁹ The forest land is classified as a 'limited production forest', meaning that logging concessions can be awarded to companies looking to exploit the forest resources. Such developments threaten the functioning of the eco-system, which is home to a number of critically endangered species (including the Bornean Orangutan) and supports local communities that rely on forests for their livelihoods.

The People Resources and Conservation Foundation (PRCF) in Indonesia, with technical assistance funding from the Asian Development Bank (ADB), spearheaded efforts to support the local community with the uptake of forest conservation and management activities. In 2018, PRCF-Indonesia partnered up with Lestari Capital, a Singapore-based ecosystem services outcomes financing firm, to leverage long-term conservation finance through the company's Sustainable Commodities Conservation Mechanism (SCCM), an innovative incentive-payment scheme that uses the cancellation of carbon credits generated under the Plan Vivo Standard as evidence for landscape restoration and conservation efforts.

The SCCM links results-based payments to conservation requirements of the Roundtable on Sustainable Palm Oil

Scope of support

The SCCM is a Special Purpose Vehicle launched by Lestari Capital in 2018 aiming to support private sector companies to meet sustainability commitments, certifications and import requirements of key commodities in a transparent and efficient way. In its initial phase, the SCCM links results-based payments to conservation requirements of the Roundtable on Sustainable Palm Oil (RSPO), and the resulting compliance obligations of one of its members — Cargill, a global agricultural trading and processing company.

Specifically, the RSPO introduced the Remediation and Compensation Procedure¹²⁰ to address land clearance and plantation development undertaken by its members since November 2005 without prior High Conservation Value assessments. To ensure continued compliance with the RSPO, Cargill was required to invest resources in this compensation scheme to account for the land clearance that the company contributed to in the past. The resulting environmental liability, calculated through a Land Use Change Analysis, was expressed in hectares that required rehabilitation or protection by the member.

Lestari Capital and PRCF Indonesia identified the Nanga Lauk Village Forest as a matching conservation programme for this compensation scheme. PRCF Indonesia engaged Nanga Lauk community members and village forest management institutions (Lembaga Pengelola Hutan Desa) to understand the root causes of deforestation and forest degradation in the area, and combined with analysis of remote sensing data informed the design of a conservation programme that includes the following activities:¹²¹

- development of village regulations on sustainable forest resource use;
- carrying out patrols to deter and detect unsanctioned use;
- implementing sustainable forest management plans;
- negotiating with the Ministry of Environment and Forest on the management rights to the remainder of the forested land; and
- developing livelihood activities that enable the community to maximise their income from sustainable forest-use, including planting nectar producing trees to encourage honey production; training in rattan and bamboo management, processing and marketing; training in development of tree nursery and planting; and training and exchange visits to facilitate ecotourism business development.

Engagement of smallholders

Around 200 households reside in the Nanga Lauk Village. The plot sizes of farmland range between less than 1 to 16 hectares, and include rubber gardens, upland fields, agroforestry home-gardens, and fallow land. None of the smallholders possess land certificates, but informal ownership is recognised by the Nanga Lauk community. Additionally, in granting community management rights, the government recognises their presence, protecting them from illegal encroachment by loggers.

While the Remediation and Compensation Procedure of the RSPO does not include specific guidelines for how much of the conservation finance needs to be allocated to affected stakeholders, it does require project design to incorporate an 'equitable' distribution of resources that represents a fair and balanced sharing of rewards. In the project design, a share of the total budget is therefore dedicated to activities that directly contribute to smallholder livelihoods, as outlined above.



Financing mechanism

The SCCM has provided Cargill with the mechanism through which long-term conservation and landscape restoration finance can be channelled, in a secure way. The deal, valued at USD 3.5 million that is to be disbursed to the landscape over a 25-year period on a performance-basis, will deliver the financing needed to sustain the habitat conservation and livelihood activities in the Nanga Lauk Village Forest, including the financing of smallholder activities.

The basis for selecting the key performance indicators of the performance-based payments scheme are the monitoring requirements of RSPO's Remediation and Compensation Procedure as well as criteria adopted under the Plan Vivo Standard.¹²² Plan Vivo — a certification framework for community-based payments for ecosystem services — imposes a strict monitoring and reporting framework on the project, which includes indicators such as area under management, improvement of livelihoods, and institutional capacity building. Lestari Capital also conducts its own monitoring activities annually to ensure all the key performance indicators are met before disbursing the annual payment.

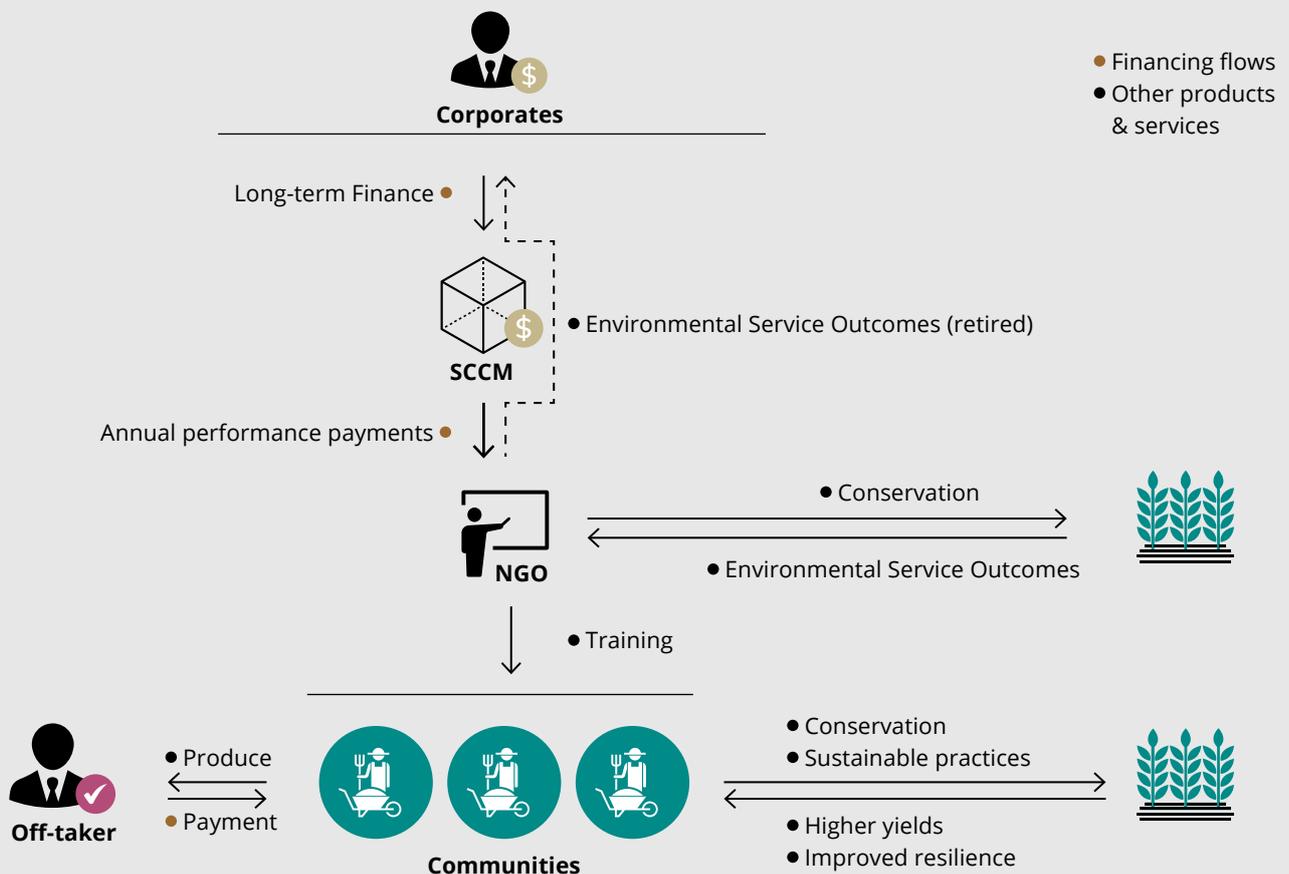
The Plan Vivo certification is used as a tool to confirm progress in project implementation, and the resulting certificates are not monetised but retired by Lestari Capital under Cargill's name. This is done to avoid the potential for 'double claiming' of results, as conservation achievements are already claimed by Cargill under the RSPO's Remediation and Compensation Procedure.

Impacts

The Plan Vivo certification quantifies the carbon dioxide emissions from deforestation and forest degradation that are being avoided as a result of the SCCM investment. Under the baseline scenario, emissions from loss of above and belowground biomass in the next five years are estimated at 7,500 tonnes of CO₂e for the village forest and around 130,000 tonnes of CO₂e for the surrounding forest land. This translates to a range of 0.6 to 7.5 tonnes of CO₂e per hectare per year, depending on the forest type, and excludes avoided peatland emissions which are not quantified under the project.

Achievement of these emission reductions, and the associated benefits for biodiversity and livelihoods, are being tracked with activity-based indicators designed to demonstrate that project activities are carried out as described in the management plan. Information on biodiversity, threats to biodiversity, and drivers of deforestation are being gathered by forest patrol and monitoring teams, and the socio-economic impacts of the project are assessed with an annual participatory wellbeing assessment.

Figure 11: Financing structure of the Sustainable Commodities Conservation Mechanism



Lessons learned

Corporate compensation schemes can provide finance. Corporate no-deforestation commitments and related voluntary or compliance schemes can trigger investments that can be the basis for long-term conservation finance, with sustained benefits to smallholders residing in the target landscapes. Aggregate compensation liabilities under RSPO's Remediation and Compensation Procedure, which alone are estimated to amount to USD 150 to USD 300 million given the current membership composition, are just one example of this.¹²³ Similar commitments extending to commodities like cocoa and soy are expected in the future. Another example is the Forest Stewardship Council, which is in the process of introducing a comparable remedy procedure that will take effect after 2020.

Partner with specialised investors. Special purpose vehicles like the SCCM can match the rising demand of corporates for high-quality conservation programmes that can deliver sustainable environmental impacts. Selecting and vetting the right programmes can be a complex process, corporates can gain from collaboration with specialised investors that can reduce project failure rate and maximise conservation outcomes.

Finance for readiness activities needs to be secured. One shortcoming of the current approach is the lack of upfront finance needed to cover preparatory activities and fund upfront investments in capital expenditures. In the case of the Nanga Lauk project, this issue was not pertinent due to the preceding ADB-funded technical assistance programme that pre-financed the preparatory activities. However, initiatives lacking similar support will need to leverage other sources of finance to cover readiness activities.

CASE STUDY 4

The Sustainable Cocoa Production Program: Using blended finance to enhance the competitiveness of smallholder farmers in Indonesia's cocoa value chain

Ageing trees, inadequate agronomic skills in Indonesia's cocoa labour force, and lacking access to finance and agri-inputs, have led to a decline in the country's role in the global cocoa market. The Sustainable Cocoa Production Program was established to counter these fundamental challenges by deploying financial and technical support to smallholders to improve their production practices and improve their competitiveness in the global value chain.

This case study illustrates how a well-designed technical assistance programme can help unlock financing, allowing farmers to invest in their farms, secure certification and achieve better pricing for their cocoa.

SCPP was initiated to help cocoa farmers implement good agricultural practices that improve yields while ensuring sustainable production

Background

Indonesia has for decades been one of the world's largest cocoa producers. However, since 2000, the country has experienced declining yields and profitability — largely due to ageing trees, inadequate agronomic skills and lack of financial/agri-inputs access among the cocoa labour force. Across Indonesia, cocoa smallholders, which account for 95 percent of cocoa producers,¹²⁴ suffer from poor access to finance. This hinders access to quality inputs and implementation of sustainable agricultural practices. The Sustainable Cocoa Production Program (SCPP) was initiated in 2012 to help smallholders across Indonesia, with the objective of increasing the competitiveness and sustainability of the country's cocoa production.

SCPP brought together government, industries and NGO actors at national, regional and district levels. The programme was developed and implemented by Swisscontact, a Swiss non-profit organisation dedicated to tackling poverty in developing countries through private sector engagement. It was financed by the Swiss State Secretariat for Economic Affairs (SECO), the Embassy of the Kingdom of the Netherlands, the Sustainable Trade Initiative (IDH), the Millennium Challenge Account Indonesia (MCA-I), and eight local and multinational cocoa companies (Barry Callebaut, Cargill, Ecom, JeBeKoko, Krakakoa, Mars, Mondelēz International and Nestlé).¹²⁵

Scope of support

SCPP targeted the capacity-building of nearly 165,000 smallholder farmers across ten cocoa producing provinces. The programme supported four distinct pillars of work:^{126, 127, 128}

- improving farmer access to finance through the operationalisation of the Agribusiness Financing Facility (AFF). The facility provided training to smallholders on financial literacy, planning and saving, aimed at helping to reduce farmer exposure to undesirable loan commitments. The facility also offered support to financial institutions to improve their understanding of the cocoa sector and ability to develop suitable loan products;
- enabling the profiling, tracing and monitoring of smallholders through the introduction of CocoaTrace, a cloud-based Traceability Software and Management Information System developed by tech company Koltiva. By monitoring farmers' status and activities, CocoaTrace traces cocoa beans from farm to factory, keeps track of programme achievements, and helps banks make more informed credit decisions. Tracing of farmer transactions is enabled through the application of smallholder ID cards and unique QR codes;
- enhancing smallholders' skills on sustainable agricultural practices through the Farmer Field Schools. Trainings were provided by Master Trainers (mainly SCPP field facilitators with some government and private sector staff), who trained regional Lead Farmers, who in turn trained farmers at village level;
- the professionalisation of cooperatives through Cocoa Producer Groups, including supporting the implementation of the Rainforest Alliance's certification standard mechanism.

Engagement of smallholders

Support to smallholders was at the heart of the SSCP's mission. Recognising the inability of smallholders to improve yields, realise higher income, and gain access to higher pricing, the programme delivered multi-dimensional assistance with the aim to support the uptake of sustainable practices above and beyond the end of the programme.

The diversity in the capacity-building and training provided through the programme enabled farmers to enhance both productivity and resilience. Training in financial literacy and the tech-based profiling system empowered farmers to better market themselves to lenders, as well as identify least risk loans. Farmer Field Schools improved farmers' agronomic knowledge, which, combined with access to financing from banks, allowed smallholders to invest in farm rehabilitation and high quality seedlings. The Cocoa Producer Groups, in turn, allowed smallholders to gain better market access and secure higher pricing by benefitting from sustainability certification.



Financing model

Cocoa's continuous harvesting cycles make it an attractive crop from a financing perspective. Regular harvesting creates predictable cash flows, often a necessary requirement for lending. However, unproductive farming practices and ageing plantations create a high risk exposure for potential funders, which combined with poor sectoral knowledge create persistent barriers to commercial bank lending in Indonesia's cocoa sector. This is clearly evidenced by the fact that at the start of SCPP, only two percent of all cocoa farmers had access to agricultural loans extended by commercial banks.¹²⁹

The SCPP itself did not provide direct financing to smallholders, but instead created an enabling environment for financial institutions to deliver services to farmers directly. The primary financier was Bank Rakyat Indonesia (BRI), which already had an existing 90 percent market share in rural areas and vested interest in the cocoa sector. Most of the loans enabled through SCPP were provided via BRI through the Indonesian government's Kredit Usaha Rakyat (KUR) scheme. These smallholder loans were provided at 7–9 percent interest per annum; much lower than interest rates offered on loans outside the scheme (around 20 percent per annum). Investments were IDR 20 million (USD 1,400) on average, with a maturity period of up to 3 years for working capital loans and up to 5 years for investment capital loans. The financial institutions retained all profits from farmer loan repayments.

In addition to helping farmers to register their land, one innovative feature of the SCPP was to propose the use of cocoa beans as collateral, replacing traditional collateral such as land or vehicle titles. As the KUR scheme also offered a 70 percent built-in credit guarantee for banks, farmers were however not expected to provide any collateral for smaller loans (e.g. below IDR 25 million, or USD 1,700).

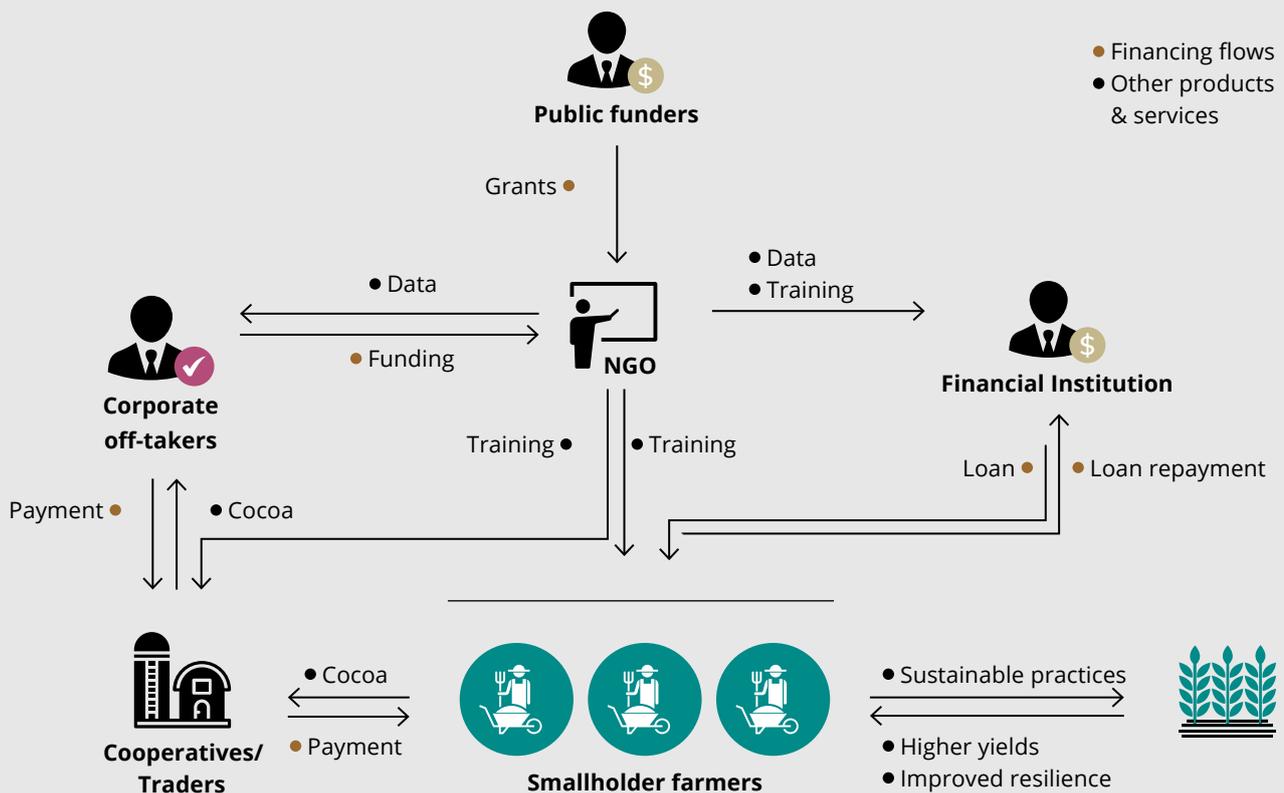
While the corporate partners did not directly finance smallholders, their contributions were instrumental in supporting the overall implementation of the SCPP. In addition to co-funding the technical assistance programme, the companies indirectly provided financing by serving as off-takers of the cocoa.

Impacts

As of 2019, the programme had resulted in:¹³⁰

- nearly 165,000 farmers trained in sustainable agricultural practices, post-harvest handling, professional farm management, nursery management and certification;
- over 6,000 Cocoa Producer Groups established and supported;
- over 100,000 cocoa farmers certified with third party sustainability standards;
- farm productivity increasing by 19 percent, after farmer training activities (from a baseline value of 508 kg/ha/year to 603 kg/ha/year);
- considerable increases in smallholder saving activity: increased median savings of 19.6 percent and average savings of 8.9 percent;
- total cocoa production increased by over 21,000 tonnes per year, equivalent to an additional USD 42 million per year for the rural economy;
- 22 percent of the trained cocoa farmer households reported increased incomes of at least 75 percent.

Figure 12: Financing structure of the Sustainable Cocoa Production Program



Lessons learned

Tailor the technical assistance to address financier needs. SCPP delivered training to financial institutions on the cocoa sector, shared (with the consent of the farmers) relevant smallholder data with banks (e.g. on location, productivity, demographics), and helped banks identify the most creditworthy farmers within a target region. Furthermore, the fact that training in Good Agriculture Practices delivered by SCPP helped to increase productivity that gave banks additional security. Finally, by promoting the use of cocoa bean traders as branchless banking agents, the transaction costs for the banks could be reduced while giving smallholders a stronger sense of trust by allowing them to deal with a familiar agent. Doing so allowed the SCPP to partner up with BRI, a large local player that was able to offer affordable loans to thousands of cocoa smallholders.

Select a lead entity that can act as neutral mediator. By taking a neutral position, Swisscontact was able to be recognised as a trustworthy partner by the various stakeholders involved and deliver both tailored support to smallholders on the one hand, and to banks on the other. Swisscontact's active role in gathering data first-hand and its internal monitoring and evaluation systems enabled stakeholders to get access to objective data, giving quantitative reassurance to parties that there was value in joining the SCPP. Swisscontact's experience with dealing with similar programmes in the past made it an attractive partner for donors, companies and governments alike.

Secure long-term backing for programme implementation. Securing long-term funding with a long-term perspective on development, such as that provided by SECO, was critical for the design of the SCPP. Long-term funding shifts the desire for short-term impacts in a value chain — often needed from grants — to long-term impacts across an entire sector, a necessary approach when a lasting transition to sustainable practices is the end goal.

CASE STUDY 5

Impact Terra's Golden Paddy digital platform: Harnessing the power of digital technology to facilitate access to finance for smallholder farmers

Lack of access to finance and good quality agricultural inputs is severely hampering smallholder productivity across Myanmar. Yet the high mobile phone penetration in rural communities is unlocking possibilities for digital service providers to cost-effectively connect smallholders with local financial institutions and agricultural service providers.

This case study illustrates how innovation in the space of digital technology is contributing to a stronger business case for smallholder investments by allowing farmers to improve productivity through access to tailored microcredit, timely agro-advisory and good quality inputs.

Impact Terra aims to enhance farmers' crop productivity by providing real-time, tailored agronomic advice, weather and pest alerts

Background

Myanmar is rich in natural resources and has a favourable climate, which has made it a key supplier and trader of agricultural produce. Agriculture employs nearly two-thirds of the country's total population, the majority of whom are smallholder farmers.¹³¹ Poverty is persistent in the sector, and farmers struggle to improve productivity due to the lack of access to proper farm inputs and storage facilities. Despite high poverty rates, mobile phone penetration in Myanmar is one of the highest of all developing countries, reaching around 80 percent of the population, including an estimated 70 percent of smallholder farmers.¹³² This high connectivity presents a wide range of opportunities for digital service providers.

Impact Terra, a social enterprise and agtech firm based in Yangon, is leveraging technology through its Golden Paddy digital platform to provide value-added services to farmers, whose rural location may previously have hindered access to these. The platform — consisting of a mobile application, web application and a Facebook platform — aims to enhance smallholder farmers' crop productivity by providing real-time, tailored agronomic advice, weather and pest alerts, better market connections and access to improved financial opportunities. The platform's early-stage investors include the Netherlands Space Office's Geodata for Agriculture and Water facility and the venture philanthropy organisation Leap21.¹³³

Scope of support

The objective of Impact Terra is to deliver scalable farming advice and contribute to the financial inclusion of smallholders. Its digital platform leverages big-data analytics, remote sensing data and crop prediction models to deliver tailored advice to rural customers, as well as service providers. The Golden Paddy App is a business to consumer (B2C) mobile application designed to provide tailored agronomic support services to smallholders; whilst the Golden Paddy Crop Insights web application offers business to business (B2B) support to financial institutions, traders and agricultural enterprises.

Golden Paddy mobile application

The mobile application targets smallholder users and offers free-of-charge support to smallholders by delivering actionable agronomic advice and connecting smallholders to financial and non-financial service providers. To use the application, farmers must register their primary crop and location. After registration, Impact Terra's customer services team collects additional data points which aid in segmenting users, in particular according to total acreage. Following the creation of this initial profile, an in-house collection team segments users based on their attractiveness to services providers. It makes personal contact with selected farmers by phone to collect a 25-point profile. This includes household data (size, income) and farmer activities (years of experience, types of crops, historical yields). This collected information is used to tailor support services offered through the application, which includes real-time weather and pest alerts and market price insights. The application also publishes shop listings for good quality agricultural inputs, in addition to daily market prices in selected locations. Such activities help increase market transparency and help smallholders make the most productive and cost-effective choices.

Golden Paddy Crop Insights platform

The Golden Paddy Crop Insights platform is a web portal designed to provide data insights to agricultural service providers — such as financial institutions, agribusinesses and traders. The collected smallholder data is — with the farmer's permission — used to deliver aggregated market intelligence to these service providers, in combination with Impact Terra's Crop Recommendation Engine (an in-house crop prediction model) and the Remote Sensing Engine (crop growth and risk insights) to create real-time reports for third party service providers. Businesses have direct access to farmer data at province or township level, which helps guide strategic decision making.

One impactful way in which the data is used by service providers is in the credit scoring process that microfinance institutions employ. While each funder will apply its own approach to credit scoring, the data collected by Impact Terra delivers vital inputs for the analysis of cash flows and repayment capacities. Moreover, data sourced from satellite technology that incorporates impending weather and climate impacts gives a level of granularity to the data currently out of reach for most microfinance institutions. With this depth of knowledge, microfinance institutions can develop loan products with disbursement and repayment conditions better tailored to crop type and location. Such information can also guide financial institutions in identifying new areas for branch deployment or spending prioritisation.



Engagement of smallholders

Financial inclusion and improved smallholder livelihoods are at the core of Impact Terra's mission. To achieve this, the firm is reliant on close smallholder engagement to understand farmer needs, and gain access to information that is needed to allow agricultural service providers to deliver tailored support services. To date, Impact Terra has onboarded over 60,000 smallholders, and will continue to deliver high value services to target user groups based on crop, farm size and location.

As Impact Terra brands itself as an independent platform for smallholder farmers in which it invites organisations with different objectives to partner up, it is able to unlock support to dedicated sustainable farming activities. Currently, its agronomic advice aims to help farmers increase their productivity in accordance with Good Agricultural Practices. Connecting farmers to providers of good quality inputs is a key part of the puzzle.

Financing model

Monetisation of the platform

Impact Terra monetises both its B2C product, Golden Paddy, and B2B product, Golden Paddy Crop Insights. Whilst the Golden Paddy mobile application itself is provided to farmers free of charge, the platform is mainly monetised through data sales and advertising services among different service providers. For financial institutions specifically, Impact Terra also offers paid onboarding of customers, while also providing risk reports to their loan officers for use in the field.

The Golden Paddy Crop Insights platform is the main B2B product and access is managed through paid subscriptions. Service providers such as development agencies, input manufacturers and financial institutions pay a monthly license fee to access the insights provided by the platform. The platform therefore serves strategic as well as operational needs for many different types of business users.

Farmer financing model

Whilst financial partnerships with capital providers and the use of digital disbursement mechanisms such as mobile wallets could be an effective way to accelerate loan processing and payments, the financial sector in Myanmar is not yet sufficiently mature to accommodate for such approaches. In addition to this, to disburse loans a digital lender would also have to obtain appropriate licensing. For these reasons, Impact Terra currently does not directly offer financial services to smallholders, and partner microfinance

institutions continue to pursue traditional approaches to servicing smallholders by disbursing loans and handling repayments through physical branch offices.

The data that Impact Terra generates, however, allows the microfinance institutions to rethink their approach to evaluating the credit risk of rural borrowers, and focus the evaluation of the repayment capacity of farmers more fundamentally on the underlying cash flows of funded investments. Traditionally, microfinance institutions in Myanmar require farmers to put up land titles as collateral for loans, a practice that is both highly impractical in a country where the vast majority of smallholders lack formal land titles, and perilous as in case of default, farmers face the risk of eviction from the land on which their livelihoods depend. By providing financiers with big data insights and educating bank staff on how to use the data to evaluate smallholder cash flows, Impact Terra aims to shift the focus of the credit score assessment to the underlying business case of smallholder investments. Impact Terra is also encouraging partner microfinance institutions to change the repayment terms of loans so that interest payments do not have to be serviced throughout the growing season, when farmers have little disposable income. Most financiers currently still require loans to be serviced periodically, which does not align with the cash flows generated by the financed business models. A growing number of microfinanciers is also introducing flexibilities on principal repayments, by linking the principal repayment date to harvest timing of a specific crop.

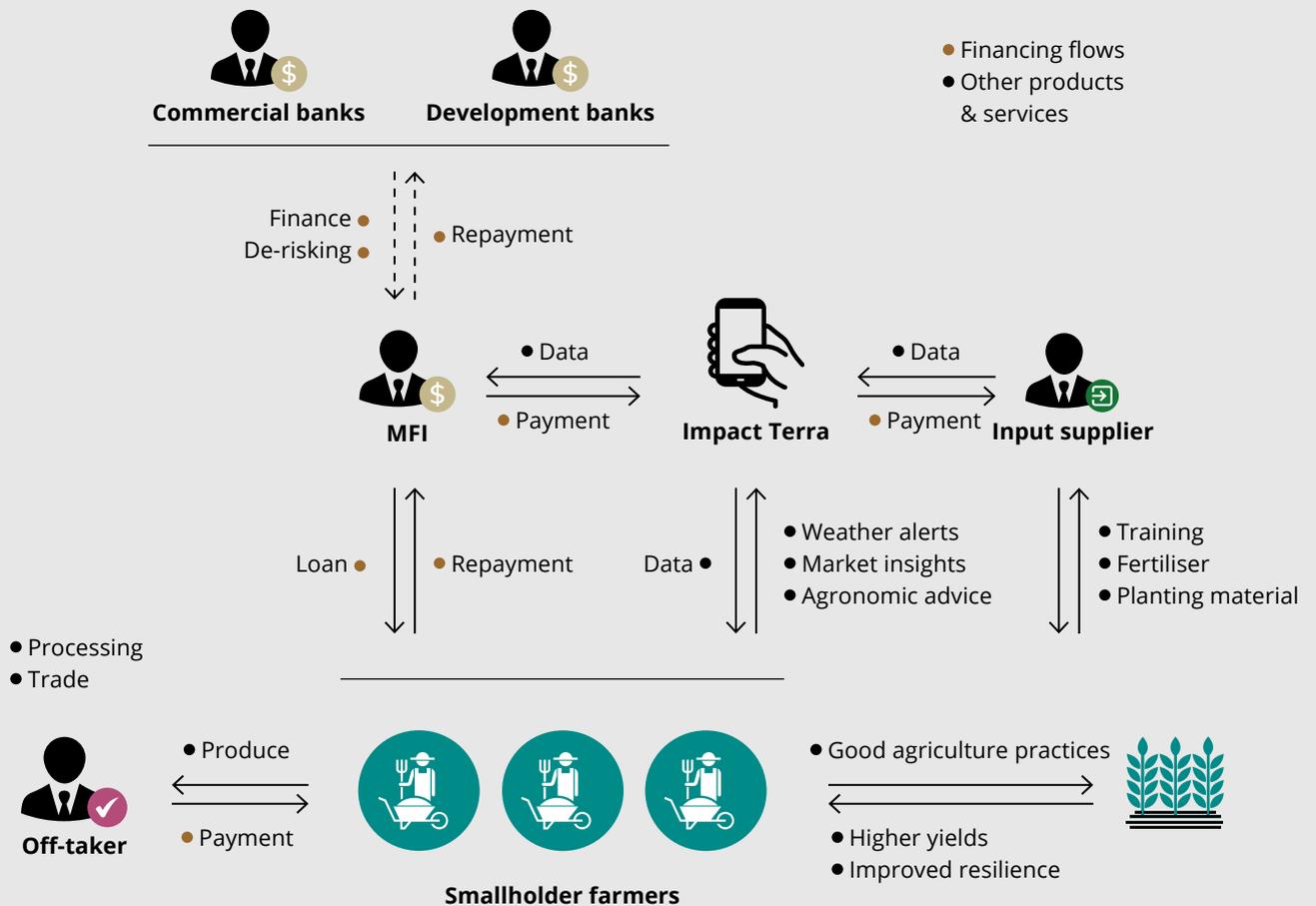
Another shift that is occurring are microfinance institutions tying loans to good quality inputs and specific content (by adapting Good Agricultural Practice with advice and alerts from the Golden Paddy application). This allows financiers to have the guarantee that the credit is spent on agricultural inputs that are tailored to the needs of farmers (e.g. the right seed in combination with the right fertiliser), and ensures farmers gain access to better quality and more sustainable inputs that can improve farm productivity. In practice, this means that credit is channelled directly to input manufacturers, and farmers are able to pick-up their packages from local retailers or a large wholesaler by showing a personal coupon. According to anecdotal evidence from partner microfinance institutions, loan recipients making use of the Golden Paddy services were able to increase their yields by 10 to 15 percent, a likely result of the combination of a use of good quality inputs and targeted agronomical advice. These results appear to be also encouraging partner microfinance institutions to extend larger pre-season loans to farmers; the loan amount per acre that is received by Golden Paddy farmers tends to be higher than that of peers.

Impacts

To date, the Golden Paddy platform has:

- registered over 60,000 farmers to the platform;
- contributed to yield increases of between 10-15% for maize farmers, compared to peers not using Golden Paddy services;
- supported businesses to create 300 digital shop profiles;
- supported distributors to create 500 product profiles;
- delivered over 150,000 market price points.

Figure 13: How Impact Terra is impacting traditional service delivery to smallholders



Lessons learned

Willingness to pay for third-party credit scores remains low.

Impact Terra offers local microfinanciers insight into the risk profiles and cash flow projections of individual farmers or aggregated farmer groups. Microfinance institutions are using this data in different ways, and the data collected through the platform are incorporated with other performance metrics that these funders traditionally apply. There is limited appetite from these banks to purchase complete credit scores, which are developed by Impact Terra with its financial partners. One reason for this is the requirements for microfinance institutions to follow pre-defined credit risk assessment guidelines imposed by their funders (e.g. commercial banks or a development banks). In most cases, proof of land title is used as the primary form of collateral, and farmers that cannot present valid land titles are disqualified from the onset. The Golden Paddy platform is seeking to change this by evidencing the validity of the business case behind specific smallholder investments, but it will still take some time before the local financial sector is ready to rely solely on cash flow-based credit allocation decisions.

Microfinance institutions are slow to adapt loan design. Similar to the adoption of alternative credit scoring approaches, microfinance institutions remain slow to adapt the loan products they offer to rural customers. The data collected by Impact Terra allows funders to more carefully evaluate farmer cash flows and pinpoint the periods when farmers have sufficient free cash flow to service debt payments. However, adapting loan terms to specific crops or borrower types takes time, and in many cases formal financiers fail to offer financial support tailored to the needs of farmers. This is one of the reasons why farmers opt for informal financing routes, and remain dependent on loan sharks charging high interest but with more flexible repayment terms.

Clear offtake markets and guaranteed long-term contracts for certified products are needed. At present, the business case for the uptake of sustainable practices remains weak across most crop types grown by smallholders in Myanmar. Organic inputs and sustainable production methods come at a higher cost, and require longer-term commitment periods before yielding returns. The low rate of farmer aggregation makes it costly to achieve product certification in the first place, and agribusinesses and traders are often unwilling to make long-term commitments or guarantees for the offtake of certified products, let alone offer price premiums. Given the vast number of smallholders in Myanmar with no access to formal services at all, connecting farmers to formal financial services and good quality inputs is a first step towards the transition to more sustainable farming practices — but the demand side has to follow suit.

5. ROADMAP TO SMALLHOLDER FINANCE

The growing track record of impactful smallholder finance schemes, expanding interest in sustainable land use investment, and innovation in digital finance and service delivery models, are all solidifying the business case for smallholder investments in sustainable production.

This final chapter lays out actions that practitioners can take to support the development and implementation of smallholder finance schemes, offering recommendations on business model development, financial mechanism design, and programme implementation.



5.1 OVERVIEW

This chapter lays out actions that practitioners can take to aid the development and implementation of smallholder finance schemes. Structured in the form of a roadmap, the objective of this final part of the report is to provide recommendations for actions that CSOs and financiers can take to support smallholder business models in sustainable farming. A distinction is made between recommendations for CSOs and financial service providers owing to their distinct roles, areas of expertise, and degree of connectivity to smallholders.

CSOs are often locally anchored, maintain close relationships with local stakeholders, and offer a good understanding of smallholders' needs and local implementation constraints. As such, they can play an important enabling role, offering support to help overcome implementation barriers and bringing together relevant actors to make smallholder finance work. They can mediate between investees and investors, helping to bridge the information gap that exists between practitioners on the ground and financial actors. CSOs can also offer valuable insight into both local natural capital and socio-political conditions. This unique perspective of CSOs can help formulate impactful financing approaches that are both commercially attractive, and contribute to improved environmental and social conditions.

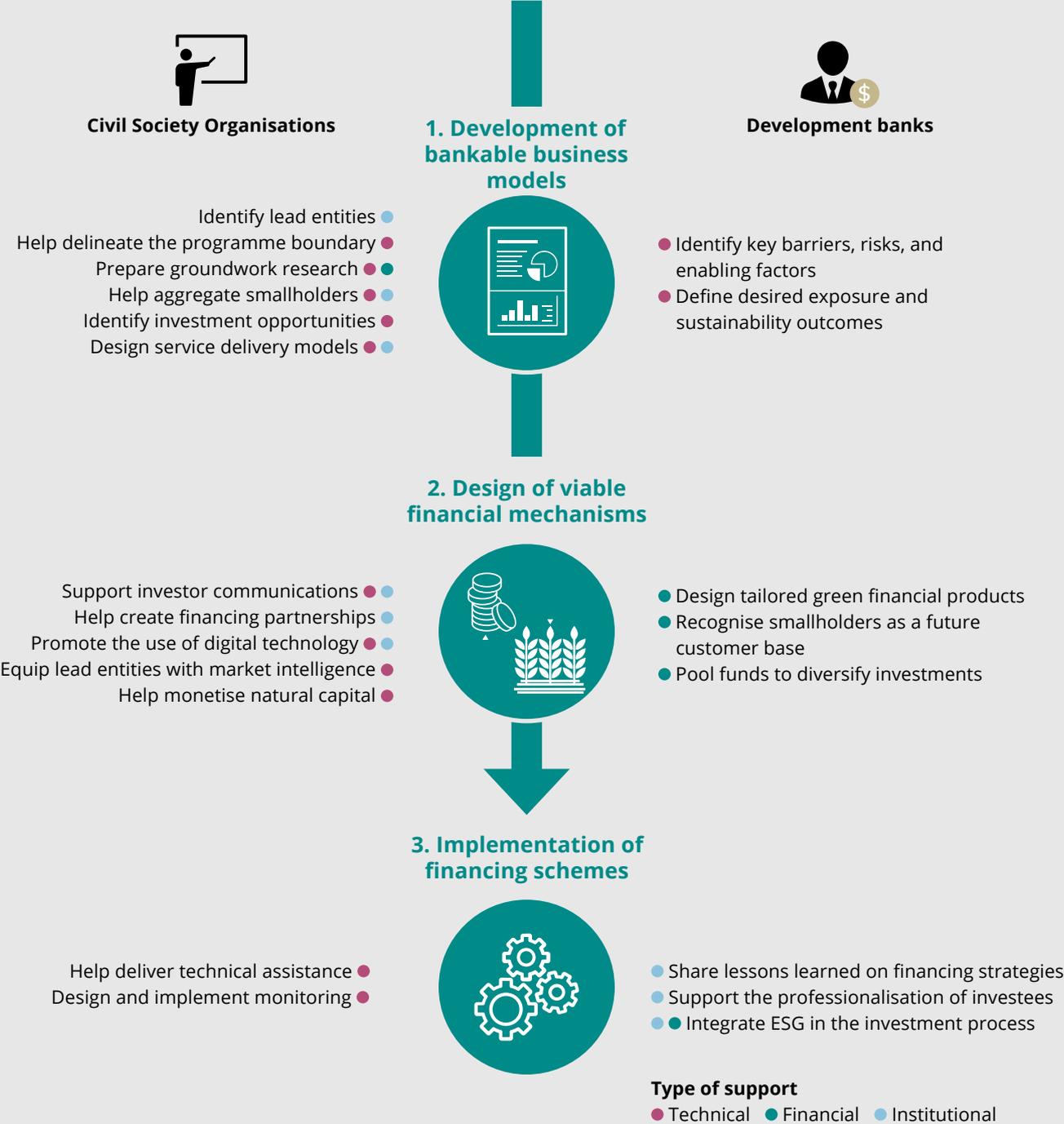
Financiers, in turn, can pave the way for smallholder investments by closely engaging with investees throughout the investment cycle. By identifying avenues to address key investment risks, financiers can help investees identify new revenues streams, develop innovative aggregation models, and implement alternative delivery channels to improve profitability, reduce transaction costs, and facilitate risk management. These discussions can also give financiers the opportunity to adapt the terms and conditions of their financial products to meet smallholder needs. Post-investment collaboration, in turn, can help to further professionalise investees. This can strengthen the capacity of these organisations to take on follow-up investments, creating new opportunities to unlock smallholder financing for sustainable production across the Southeast Asian region.

The recommendations are structured in three overarching steps of the roadmap (Figure 14). We start with actions that CSOs and financiers can take to facilitate the design of bankable business models. Next, we outline measures for the design of financial mechanisms that have the potential to unlock capital flow to smallholders. We close with an overview of what CSOs and financiers can do to further support the effectiveness and impact of smallholder finance schemes throughout their implementation. Recommended actions encompass technical, financial and institutional areas of support

targeted at lead entities (i.e. investees) in charge of managing smallholder finance activities. These may include, among others, local producer cooperatives, microfinance institutions, corporate off-takers active in a specific value chain, or dedicated investment funds.

The recommendations presented here are not exhaustive in nature, and actions will have to be tailored to meet the needs of the local context in which they are implemented. Whilst the recommendations are intended for practitioners in Southeast Asia, we hope they can also be helpful for CSOs and financiers operating in other regions of the world.

Figure 14: Roadmap to smallholder finance and recommendations to CSOs and financiers





5.2 DEVELOPING BANKABLE BUSINESS MODELS

Chapter 2 of this report introduces key elements of smallholder business models in sustainable agriculture, highlighting both demand-side and supply-side barriers to financing smallholders. To overcome these barriers and unlock bankable investment opportunities, tailored technical assistance and close collaboration between smallholders, financiers and other relevant stakeholders is required.

The starting point for defining the implementation modalities of smallholder finance schemes is the identification of a lead organisation that can act as the principal investee and the overarching managing entity of a financing programme. In situations where there is no evident candidate, CSOs familiar with the local context can help identify such a leader, and assist this entity with the creation of an enabling environment for the implementation of bankable business models. An important first step in this process is the delineation of programme boundaries to ensure that commercial, environmental and social aspects are adequately integrated. To this end — as lead entities will not always share an equally strong agronomic understanding — CSOs can offer technical support to help identify land use practices suitable to both the biophysical and social contexts, and subsequently advise on the types of extension services that smallholders will require to successfully implement these measures. In addition, CSOs can play a vital role in supporting the aggregation of smallholders into farmer organisations that can consolidate supply, and act as viable partners for both off-takers and financiers.

Financiers, in turn, have a role to play in helping to inform the design of business models by clarifying their risk-return expectations, outlining key observed barriers, and jointly developing strategies for overcoming these issues. Financial actors should also be receptive to the innovations being introduced by developments in the fintech and agtech space, and be open to collaboration with these new market entrants to improve efficiencies in the financial servicing of rural customers.

Actions for Civil Society Organisations

Identify a lead entity that can oversee the implementation of the smallholder financing activities

Identify a lead entity

Most financiers will avoid direct exposure to smallholders, and will channel their resources through financial service providers that have the capacity to on-lend capital to rural customers. The starting point for defining the implementation modalities of smallholder finance schemes is therefore the identification of a lead organisation that can act as the principal investee and overarching managing entity of the investment programme. In targeted value chain investments, this lead entity could be a producer cooperative, a microfinance institution or a corporate off-taker that sources products through one or several farmer groups. In landscape-level initiatives, this role could also be taken on by a dedicated investment fund. Where there is no proactive or apparent candidate, CSOs familiar with local stakeholders can help identify such a lead entity, and evaluate how the entity's business model can be enhanced through the transition to more sustainable production methods. A clear understanding of the business case for transition can subsequently inform the selection of suitable investments, and enable the identification of financing and input delivery needs, technical support requirements, and policy enablers.

Help delineate the intervention boundary to ensure commercial, environmental and social aspects are adequately integrated in the programme design

Help delineate the intervention boundary

The design of smallholder finance schemes should consider the broader commercial, environmental, and social goals of the different actors involved. This means that the programme scope and funded activities have to account for the diversity of issues that fall within these different — albeit interconnected — goals. CSOs can help lead entities adopt a socio-ecological approach to delineating a programme's geographical boundary.

Given the common aim to combine improved agricultural production and environmental goals, the area of intervention will often extend beyond the farms that smallholders operate on, and might include areas that have high potential for sustainable land use transitions, such as degraded areas or forest frontiers. Besides biophysical boundaries, local governance aspects are another important consideration. Administrative boundaries (both informal and jurisdictional) can help define target communities that could be covered under a programme, and help identify regional policies that may act as barriers or enablers to sustainable land use investments. As the programme boundary should also reflect the presence of relevant stakeholders, CSOs can help convene and raise awareness of key actors present in the landscape or region. For example, corporate off-takers may have limited awareness of their impacts or dependencies on local ecosystem services and functions, and may lack the know-how needed to tackle risks related to deforestation, climate change, or social tensions.

This is especially relevant in settings where the link between off-takers and smallholders is indirect, and supply is handled through several intermediaries.

Prepare groundwork research that captures current conditions and evaluates the costs and benefits of sustainable land use options

Prepare groundwork research

The design of smallholder business models should be based on an informed understanding of local production and socio-economic conditions, and key factors that affect smallholders' decision-making processes. Firstly, data is needed to characterise the often-diverse socio-economic profiles of smallholders in a target region. Baseline research should capture farmers' financial data (e.g. availability of savings, collateral), production data, historical yields per crop, farm-gate pricing trends, and terms under which smallholders can access finance and inputs (if at all). This data will be important to evaluate opportunities for accessing already available finance streams, as well as to identify barriers to channelling green finance (such as legality of land tenure, lack of collateral, or lack of farmer aggregation).

Secondly, feasibility studies evaluating the viability of sustainable agricultural practices need to be implemented. This research should evaluate the economic, environmental and social viability and potential trade-offs of selected farming practices, which can for instance be measured by means of land use profitability assessments or land use prioritisation toolkits.¹³⁴ Feasibility studies should also explore the challenges that smallholders — across gender and different socio-economic groups — could face when transitioning to new practices; potential implications of new practices on existing land management and governance systems; possible conflicts with other natural resource user groups; and the needs of smallholders to realise the transition.

Thirdly, stakeholder mapping can be a helpful tool to identify relevant stakeholders, and help with the formation of multi-stakeholder partnerships to create dialogue, build trust, and align objectives within a target landscape or region. CSOs can support the implementation of these studies and tools by providing expert input on research design, data collection, and analysis of information. CSOs can also offer financial resources to support this effort, or help connect lead entities to incubators or accelerators, which can be instrumental in providing early-stage support.

Aggregate smallholders

Aggregate smallholders to consolidate supply, benefit from economies of scale, and de-risk the engagement for both off-takers and financiers

By typically working on small, fragmented, and often remotely located plots, individual smallholders do not represent attractive counterparties to off-takers or financiers. The implication of being side-lined by larger off-takers and formal financial service providers is that smallholders become dependent on local intermediaries not only to sell their produce, but also to (pre-)finance their agricultural activities. This restricts both

income possibilities, as well as access to affordable finance that can enable the purchase of quality inputs, or longer-term investments in farm renovation or rehabilitation efforts.

CSOs can support the aggregation of smallholders into farmer organisations that can consolidate supply and represent a viable partner for transactions – both commercial and financial. Farmer organisations can lower the overall cost of producing a certain commodity by allowing its members to benefit from economies of scale (e.g. by sharing costs for inputs or warehousing), and improve yields by delivering agro-advisory services and market intelligence. Farmer organisations can also improve the profitability of smallholder production systems by strengthening farmers’ negotiation power, facilitating access to certification, and securing long-term off-take agreements that deliver income security. All these factors can reduce the risk profile of smallholder activities. At the same time, aggregation makes smallholders more approachable for funders, including microfinance institutions already specialised in rural finance. In regions where farmers are already members of producer organisations, CSOs can assist with the further professionalisation of these organisations by delivering training on financial management, and by devising strategies to improve rural livelihoods more generally.

Identify investment opportunities in sustainable land use that will contribute to an economically resilient smallholder transition

Identify investment opportunities

Lead entities that do not have a sufficiently strong understanding of the local context will require external support in the formulation of bankable business models. Important knowledge gaps could include data on the socio-economic and biophysical conditions present in a target landscape, specific agronomic knowledge on the practice of sustainable agriculture, and the ability to evaluate the risks and potential returns associated with these measures. CSOs can help clarify the value proposition of smallholder investments by supporting with the identification of sustainable farming practices that can help maximise the revenue potential. Strategies for on-farm diversification of cash flows (e.g. through intercropping) could be pursued to alleviate the risk of overdependence on revenues from a single commodity. CSOs can also help identify value-added opportunities that can further improve financial returns to investors, such as the integration of productive or value-enhancing supply chain activities (e.g. processing or warehousing). These strategic considerations should all be summarised in a coherent business plan. CSOs can assist lead entities with the formulation of business plans to ensure they address key risks and opportunities, and are formulated in a way that speaks to investors (Box 14). CSOs that take on this advisory role should have a thorough understanding of the actual needs and demands of potential financiers, to avoid the development of pipelines that subsequently cannot be effectively connected to investors.

Design service delivery models that align with the objectives of the business model and are able to overcome barriers observed by smallholders

Design service delivery models

The resilience of smallholder business models depends, amongst other things, on farm productivity and their ability to access markets. The transition to sustainable agricultural practices therefore needs to be supported by a suite of extension services that aims to enable smallholders to run their agricultural activities at full potential. To ensure long-term sustainability of the effort, agricultural extension services should be part of the business model of a lead entity, and therefore be offered alongside the financial support channelled through a scheme. CSOs can help with the design of service delivery models by first helping lead entities identify the necessary extension services, and subsequently supporting with their implementation. CSOs that are locally present can also partially fulfil the role of service providers, for instance by training farmer cooperative representatives on aspects of financial management, offering technical advice on the introduction of sustainable agricultural practices, or delivering other forms of needs-based support on an ongoing basis. Last but not least, CSOs should look for ways to integrate digital advisory platforms to facilitate access to agronomic advice, climate information services, and market data. Doing so can greatly help improve the operational efficiencies of smallholder finance activities, making them more profitable – and bankable – overall.



Identify avenues to address key barriers and risks, and define the enabling conditions needed to inform the design and implementation of bankable business models

Define the desired level of exposure to target investments, and clarify the targeted sustainability outcomes

Actions for Financiers

Identify enabling conditions

Bankable business models are developed through an iterative process that benefits from frequent interactions between lead entities, financial service providers, and end beneficiaries. Without close consultation, lead entities run the risk of devising investment proposals that do not resonate with financiers, or fail to meet minimum engagement criteria.

The concerns that investors may have can relate directly to the viability of the proposed business models (e.g. insufficient returns given the risk profile), or extend to more general mandates (e.g. inability to invest over long horizons, applicability of minimum investment volumes) or the terms and conditions of finance (e.g. collateral requirements). By disclosing these types of barriers to financing, investees will have the opportunity to adapt business models by introducing strategies that improve the risk-return profile of investments, scaling up investment ambitions, or engaging with donors to de-risk specific exposures. Such early-stage discussions can also help clarify the need for certain enabling pre-conditions that could be provided by regional or national authorities, and that may take time to develop. Furthermore, experienced financiers can also help investees identify alternative revenue streams, develop innovative aggregation models, or design alternative delivery channels that can further improve profitability, reduce transaction costs, and facilitate risk management. This type of advice can be invaluable during the business model development phase.

Define acceptable levels of risk exposure

By clarifying the desired level of exposure in investments, financiers can help lead entities in defining the precise scope of intended investment activities. This information can relate to the maximum investment volume that can be committed, the type of financial instrument that can be deployed by the funder, and any other specific terms and conditions of financing. Early disclosure of these criteria can help clarify the degree of co-financing or de-risking that may be required, and whether elements of the organisational structure will have to be adapted to accommodate blended financing or capital pooled from a group of investors. Where credit guarantees are expected by investors, early involvement of a development bank or government facility will be vital to increase the chances of securing funding on time. In addition to defining financial criteria, financiers should also clarify their expectations regarding the environmental and social outcomes of their investments. This can help lead entities to incorporate investor interests into the programme design, and account for ESG monitoring requirements.

Box 14: Preparing a business plan that speaks to the investor

A business plan for sustainable agriculture should aim to define the scope of the investment opportunity in smallholder practices and offer insights into the financial returns and environmental and social impacts that are to be realised over the investment horizon. While some investors reading a business plan may have experience with agriculture finance, not all funders will share an equal level of understanding of smallholder investments. It is therefore important that a business plan is presented in a format that is familiar to investors, and is written in an accessible way. Both financial and technical experts should be engaged in preparing the plan, to ensure a balanced narrative.

Key elements of a business plan include:

- **Investment objective.** The investment objective should clarify both the commercial goals behind the proposed activities, as well as the environmental and social impacts that will be realised as a result of the planned interventions.
- **Business case.** The business case should outline the key elements of the value proposition. This should include a cost-benefit analysis of the proposed activities to allow investors to evaluate whether an acceptable risk-adjusted rate of return can be realised.
- **Financing needs.** A business plan should specify the total investment costs, and indicate how these are spread out over the investment horizon. A clear distinction should be made between commercial investment opportunities, and enabling investments that do not directly offer financial returns.
- **Financial structure.** The financial structure should specify the type of financial instruments that are pursued. Where numerous funding sources apply, investors will need to understand how their funding fits into the overall structure, and how compensation arrangements will be organised.
- **Risk management strategies.** A business plan should propose strategies for managing or eliminating key commercial, institutional and political risks present in a target landscape or region. This will allow investors to more accurately evaluate the level of risk associated with their investments.
- **Lead entity.** Investors will seek to engage with organisations that have a track record in the implementation of similar financing schemes, and can show proof of concept. A business plan should clarify what relevant technical and commercial expertise the lead entity has, and argue why the entity is suited to oversee overall implementation.

Box 14: Preparing a business plan that speaks to the investor

- **Partnerships.** The success of smallholder finance schemes hinges on lasting partnerships between different stakeholders. Showcasing that the buy-in of local communities, supply chain actors, and other relevant decision makers has been secured early on in the process will strengthen the attractiveness of investments.
- **Exit strategy.** Depending on the type of financial support offered, investors will need to understand how — and when — their investment can be recouped. This will be especially relevant in the context of equity or convertible debt investments, which are monetised upon sale (buyout by owners or an acquisition by a third-party).

Tools like the business model canvas can help guide investees on how to communicate key elements of a business model. The more defined the scope of a proposed investment programme, the higher the likelihood that it will attract suitable investors. Investees should therefore consider shortlisting and approaching a smaller selection of relevant investors with a well-defined business plan from the onset, rather than engaging many diverse investors with a more general pitch.





5.3 DESIGNING VIABLE FINANCIAL MECHANISMS

As explored in Chapter 3 of this report, a variety of potential financing strategies can be applied to unlock capital flow to smallholders. Some strategies will build on existing relationships between off-takers and local financing institutions, such as microfinance institutions or producer cooperatives. Others will depend on more complex financing arrangements, where different sources of capital are blended in dedicated investment vehicles to de-risk investments and deliver tailored financial solutions.

CSOs can support discussions between investees and investors to help identify the elements of the business model that will require investment, and what financing channels can best be pursued to ensure effective finance flow. CSOs that have experience in applying for public co-financing can support lead entities through the financial structuring and fundraising process. CSOs can also supply investees with market intelligence to help determine smallholder credit needs and facilitate the credit scoring process. To help investors unlock alternative revenue streams through the monetisation of natural capital or ecosystem services, CSOs can offer expertise and technical know-how on monitoring environmental and social impacts of investments

Financiers, in turn, can facilitate the financial mechanism design process by specifying the need for particular de-risking instruments, and leading the development of financial products tailored to the needs of smallholders and sustainable agricultural practices. Financiers can also crowd-in other investors to pool funds and share investment risks, and should seek collaboration opportunities with fintech companies that can provide cost-effective solutions to overcome 'last-mile' financing problems.

Actions for Civil Society Organisations

Support communications

CSOs can support investees in quantifying overall financing needs by helping with the costing of key activities. CSOs can offer insight into the estimated level of effort associated with the implementation of sustainable land use interventions based on previous experience, and facilitate the cost-benefit analysis of selected sustainable farming practices. Organisations that are locally present can also help evaluate the financial capacities of smallholders, or the organisations they are associated with. Farmer cooperatives with financial resources may be able to cover a share of the necessary investments in sustainable practices, with external capital only required for longer-term investments such as farm rehabilitation, or investment in

Support communications between investees and investors to identify elements of the business model that require financial support

Create financing partnerships that use blended finance to overcome barriers to smallholder investments

long-term assets. By bringing this information to the table, CSOs can help bridge the discussions between lead entities and potential investors, and identify profitable areas for investment.

Create financing partnerships

Despite the growing interest of investors to seek exposure to sustainable agriculture and land use investments, many potentially viable programmes in the smallholder space do not succeed in attracting funding due to their perceived high level of risk. A lack of tested business models and limited track record in similar investments discourages commercial funders from stepping in without certain minimum guarantees. Such guarantees could be delivered through public resources, for instance by means of credit guarantees or first-loss funding structures. Public funds can also shield investors from exposures such as income risks (e.g. through insurance schemes), exchange-rate fluctuations (e.g. through a hedging facility), or collateral issues. They can also be instrumental in incentivising commercial funders to offer longer-term financing aligned with the investment horizons of target sustainable land use investments.

CSOs can help structure bankable deals by supporting the design of blended financing models that use public resources to de-risk smallholder investments. To attract blended finance, donor or concessional financiers will need to recognise how their contributions will crowd-in other sources of (commercial) finance. Public funders will also need to understand the environmental and development impacts their investments will contribute to. Experienced CSOs will have valuable insight into these pre-requisites, available funding levels, and conditions of financial support. CSOs may also have experience in directly applying for such funds, and can support lead entities through the financial structuring and fundraising process, which can take several years. Finally, CSOs can also help connect lead entities to existing platforms that aim to facilitate access to sustainable finance, such as the Food and Land Use Coalition or the Smallholder and Agri-SME Finance and Investment Network.

Promote the use of digital technology and data analytics to bundle the delivery of finance with agricultural advisory services

Promote the use of digital technology

With rapidly increasing mobile-broadband penetration across Southeast Asia, there is a growing business case for digitally enabled smallholder business models. As described in Chapter 2, while funders face a myriad of barriers when financing smallholders, innovations in digital technology and data analytics introduced by fintech and agtech companies are unlocking new ways (e.g. using blockchain, artificial intelligence, machine learning) to evaluate the credit worthiness of farmers (see next recommendation), and to channel financial resources to them. These new market entrants are also increasingly looking for opportunities to bundle digital financial services

with agricultural advisory services to maximise the convenience and impact for farmers.

Mobile money solutions in particular present opportunities to access smallholders at much lower cost by speeding up loan application processes and facilitating loan disbursements and repayments. This can enable a lead entity responsible for on-lending funds to digitise internal lending procedures, and creates opportunities for the uptake of alternative service delivery models that can benefit smallholders. CSOs can help establish the necessary connections between digital technology providers and lead entities, creating fertile ground for partnerships that service smallholders. CSOs can also play an important role in supporting the subsequent introduction of innovative digital technologies and processes to smallholders, by for instance raising farmers' awareness of the benefits of using specific mobile phone solutions.

Equip lead entities with market intelligence that facilitates the credit assessment process of smallholders

Provide market intelligence

Investees acting as on-lenders of financial resources to smallholders may benefit from support with the profiling of credit risk. CSOs can leverage their local presence to help segment the potential customer base and create farmer profiles that can inform lending decisions. Examples of the type of information that on-lenders will require include smallholder segmentation based on crop, location, historical productivity, or asset ownership, as well as data on market sizing (e.g. through satellite imagery), and insights into financing needs (e.g. scale and terms of credit). Another aspect that is becoming increasingly more prominent in these types of assessments is exposure to climate risk, and the potential impacts this may have on agricultural production. Alongside pursuing traditional approaches to data collection, CSOs should look for opportunities to collaborate with digital service providers working on solutions that aim to facilitate and reduce the costs of credit scoring. By facilitating access to this form of market intelligence to investees and brokering partnerships with relevant fintech or agtech companies, CSOs can play an important role in helping to close the information gap that exists between capital providers and smallholders, contributing to a more transparent and efficient ecosystem for finance to flow.

Offer local expertise and technical know-how on environmental and social issues to help investors evaluate the possibility for monetising natural capital

Offer expertise on PES schemes

Lead entities should strive to maximise the value proposition of target investments by evaluating the possibilities for generating alternative cash flows. Payments for ecosystem services present one opportunity for generating additional revenues and improving the risk-return profile of sustainable agriculture investments. One barrier to smallholders participating in such schemes is a lack of farm-level baseline data, as well as the challenges associated with quantifying the carbon sequestration potential of sustainable farming practices (e.g. no-till farming, crop rotations, agroforestry, or restoration of degraded land). This requires technical expertise and resources that CSOs can offer. Another barrier is the lack of scale, which makes it challenging for programmes to recoup the investment costs associated with joining such schemes in the first place. CSOs can offer support with programme scaling by assessing the possibilities of expanding the intervention boundary through the inclusion of other stakeholders, such as neighbouring farmer organisations or off-takers.

CSOs can also help advocate new approaches to monetising the environmental and social benefits associated with sustainable agricultural practices that are currently not viable. In the international carbon markets, for instance, agriculture projects still represent only a small share of registered activities under most carbon standards, and the costs of certifying emission reductions generated by certain measures (e.g. soil carbon sequestration) often outweigh the benefits. By supporting research and piloting efforts, CSOs can help lower the entry-barriers for payment for ecosystem service schemes in sustainable agriculture.

Actions for Financiers

Design green financial products tailored to the needs of smallholders, or the organisations they belong to

Tailor green financial products

Traditional financiers will often not understand the specificities of agricultural investments. Financiers may lack in-house agronomists, natural capital or climate experts, making it challenging to evaluate or model agricultural productivity, determine how seasonality can affect the repayment capacities of smallholders, or stress test financial models. Furthermore, these institutions may lack knowledge about specific commodity value chains and buyer relationships, making it difficult to assess the financing needs. As a result, financiers entering the smallholder space are at risk of introducing financial solutions that are not sufficiently tailored to the needs of the end beneficiaries.

Financial service providers must recognise that more customer-focused financial products are needed to enable the transition to sustainable land use. These may come paired with different investment horizon and cash flow implications. For example, farm rehabilitation activities may lead to unproductive periods of several years, making it impossible for farmers to fund such investments through short-term loans. Also, yield fluctuations between harvest seasons mean that free cash flow peaks at certain times of the year; a reality that needs to be accounted for in loan repayment schedules offered to smallholders. Financiers need to understand these complexities, and should collaborate closely with investees to design financing products that offer terms and conditions that reflect smallholders' repayment capacities.

Recognise the potential of smallholders to become an important future customer base, not only for agricultural loans, but also for other financial services

Recognise smallholders as future customers

Smallholders who are unable to invest in improved productivity and more resilient agricultural practices are at risk of falling into a poverty trap. The implications of this for farmer households include, a lack of adequate education, restricted access to healthcare, and limited possibilities to diversify income. Financiers should recognise that by facilitating financial inclusion of smallholders today, they can equip this customer group with resources that will allow them to engage in farm entrepreneurship, improve profitability, and accumulate savings. This, in turn, is likely to lead to new financing needs in the future.

As discussed in Chapter 2, smallholders are dynamic and can transition from subsistence farming to more commercially oriented production, diversify their incomes off-farm, or shift away from farming activities altogether — a set of changes that is closely linked with the notion of rural development. With this comes demand for a suite of financial services, including the need for savings accounts, insurance products, fixed-asset

loans, or transfer of remittances. Familiarity with a certain financial institution will increase the likelihood that farmers will return to that same institution for follow-up services. This creates an opportunity for banks not only to increase their agricultural loan portfolios, but also to benefit from future demand for other non-agricultural financial services from this underserved segment of potential borrowers.

Attract other investors to pool funds and share investment risk

Attract other investors

By inviting other investors to join a target investment opportunity, financiers can share investment risks between several parties. Whereas blended finance involves the mixing of public, private or philanthropic capital, pooled funds relate to a collective investment that combines capital from different financiers. As with blended finance, pooling funds can lower the exposure to certain investment risks, allowing an individual investor to step in at a risk-return level that meets the investor's expectation. This can be achieved by segmenting investments by level of risk, which allows lenders or issuers of equity to market their offering to a broader range of investors. The varying levels of risk, reward and maturity in such investment structures can increase demand for the overall offering, which in turn can translate into reduced average costs of capital for the financing sought. Pooling of funds is generally applicable to programmes with larger investment volumes, but financiers involved in smaller initiatives should also evaluate the possibilities for co-investment to help manage risk.





5.4 IMPLEMENTING EFFECTIVE FINANCING SCHEMES

Once financial backing is secured, lead entities can benefit from continued support throughout the implementation phase of a smallholder finance scheme. CSOs are well positioned to support smallholders, agricultural enterprises and farmer organisations with the uptake of sustainable agricultural practices, either through the provision of technical training or by facilitating the adoption of digital solutions that can help strengthen agricultural market access. Technical assistance can also be aimed at the design and implementation of monitoring frameworks for environmental and social performance, which may be imposed by investors, production standards, or payment for ecosystem service schemes. As such, CSOs can play a critical role in positive impact assurance of smallholder investment programmes.

Financiers — aside from financially supporting the implementation of smallholder activities — can help strengthen the case for smallholder investments by sharing lessons learned, and incorporating feedback from customers to further improve their financial offer. Financiers should also showcase the environmental and social impacts of their investments, with the hope that this generates a snowball effect and attracts other financial service providers into the sustainable land use space.

Actions for Civil Society Organisations

Support the implementation of technical assistance tailored to both the needs of smallholders, and financial service providers

Provide technical assistance

Technical assistance is essential to de-risk the implementation of smallholder production schemes, and the extent to which the practicalities of technical assistance are factored into a business model has a bearing on its marketability and success. By delivering tailored support to smallholders and the organisations they belong to, technical assistance can help overcome the myriad of barriers associated with the transition to sustainable agricultural practices. The nature and delivery mechanism of the assistance will vary depending on the way farmers are organised and the type of crops and land use practices that are being targeted, but should typically involve a combination of capacity-building (e.g. education and training) and enabling activities (e.g. marketing activities, networking). CSOs can also actively support the adoption of digital solutions developed by fintech and agtech companies, which can facilitate the delivery of technical assistance by means of introducing digital marketplaces or agricultural advisory services.

Help design and implement robust monitoring frameworks for environmental and social performance

CSOs can play an important role in the provision of such assistance throughout the various stages of the investment cycle (Box 15). Experts from these organisations can introduce best practices (e.g. by means of demonstration farms) and provide technical training to farmers and cooperative representatives on approaches to improve the yield and quality of crops grown by smallholders, strategies to improve the climate resilience of agricultural practices, or ways to maximise the carbon sequestration potential of pursued activities. Training can also target financial literacy and business management skills; for smallholders directly, or for cooperatives more broadly. Training should also aim to include financial service providers, who may need to build capacity to better understand and identify both risks (e.g. agronomic, climate-related) and opportunities of agricultural investments.

Design and implement monitoring frameworks

Smallholder finance schemes can incorporate environmental and social monitoring plans for a number of reasons. Funders may include explicit sustainable development impact considerations in their offering, requiring investees to periodically report on pre-defined impact indicators. These can relate to international standards (e.g. Equator Principles, UN Global Compact), or be funder-specific (e.g. linked to ESG safeguards by commercial banks). Standards certifying sustainable food production (e.g. Fairtrade), sector-specific environmental initiatives (e.g. the RSPO), or company zero-deforestation commitments can be another reason for programmes to take up monitoring efforts linked to sustainable production. Finally, environmental and social performance indicators may have to be measured when alternative revenue streams are pursued under a payment for ecosystem services scheme, such as the international carbon market.

CSOs can assist lead entities with the design and implementation of the monitoring activities imposed by a particular funder, standard, or scheme. In addition, CSOs can also help identify secondary or undesirable environmental and social impacts not covered by such frameworks, and introduce safeguards and mitigation measures to counter these. One approach for doing so can be through the design of inclusion and exclusion criteria to discourage investments that can generate negative environmental impact or trade-offs. In doing so, CSOs can play a critical role in positive impact assurance of smallholder investment programmes.

Share lessons learned to help future programme implementers and investors implement impactful smallholder finance schemes

Actions for Financiers

Share lessons learned

Despite the large number of smallholder finance initiatives worldwide, little information is publicly available on the design features of smallholder finance schemes, the extent to which they are able to effectively mobilise affordable finance flows, and how they contribute to broader environmental and social aspects. Unwillingness of funders to disclose lessons learned associated with the pursued financing strategies creates information asymmetries and hampers the ability of programme implementers and other practitioners to learn from common pitfalls, or replicate success stories. While for confidentiality or commercial reasons funders may not be able to reveal specific details associated with transactions, sharing general information on broad investment barriers and the strategies used to overcome them will help propel the smallholder financing space forward.

Communicating observations on the types of risk mitigation strategies that have helped (or could have helped) to de-risk smallholder investments, as well as how blended finance can improve the risk-return profile of investments, will be particularly valuable to public funders. Sharing results and experiences to audiences beyond the programme setting could also facilitate the formation of new partnerships, and help secure additional funding to scale-up existing initiatives or allow for the replication of successful approaches elsewhere. ‘Blueprints’ for tested investment models are one way of helping practitioners develop bankable financial transactions in sustainable agriculture. Financiers can collaborate with CSOs to develop such blueprints, and help spread these lessons learned.

Build capacity of investees

Financiers entrusting capital in the hands of investees have a clear incentive to ensure that financial resources are managed effectively, generate attractive returns, and deliver robust ESG impacts throughout the implementation of the financing activities. Financial service providers can support capital recipients by further professionalising their internal financial management processes. This can include, for example, training loan officers of financial cooperatives on the loan origination process, which could benefit from digitised credit scoring methods that both reduce transaction costs and improve the accuracy of assessments. Investees may also benefit from training on risk mitigation strategies through the adoption of risk assessment tools tailored to agricultural financing, and the uptake of methods that help quantify the potential value at risk of outstanding loan portfolios. By contributing to increased professionalisation of investees, financiers can promote investees’ self-sufficiency in financial handling beyond the end of a programme, strengthening the case for future investments in the smallholder space.

Support the financial professionalisation of investees

Integrate the use of ESG frameworks in the investment decision process

Integrate ESG into investment decision-making

Financial service providers should recognise that use of ESG data in the investment decision process has to become standard practice and be mainstreamed into the financial sector's modus operandi. A growing number of fund managers, corporates and commercial banks are integrating ESG issues into their investment practice and decision making, realising that this benefits their reputational and fundraising perspectives. Initiatives like the Task Force on Climate-related Financial Disclosures, Task Force for Nature-related Financial Disclosures, and the EU Taxonomy for sustainable activities are all directed at speeding up the transition to a 'greener' financial sector. Major financial actors including development banks and governments are already testing the use of incentive mechanisms to encourage borrowers to 'green' their financing activities, either rewarding financiers for positive contributions to ESG issues, or penalising them by adjusting the cost of capital depending on the adopted risk management processes, and performance. Laggards are at risk of becoming disadvantaged by having fewer options to access capital as time goes by, or become side-lined altogether.

Box 15: Structuring technical assistance throughout the investment cycle.

Investments in sustainable farming often build on pilot activities, which lay the groundwork for scaled-up action but require considerable technical and financial resources to become viable. Once implementation gets going, the focus shifts to supporting adoption, managing risks, and monitoring results. Assistance tailored to the needs of both farmers and the organisations they belong to is vital throughout these various stages of the investment cycle.

Pre-investment

In the pre-investment stage, technical assistance can for example serve to build awareness about the benefits of transitioning to sustainable practices to organise multi-stakeholder dialogues to identify synergies and mediate any potential conflicts, or to set up the governance structures needed for managing the many trade-offs and interdependencies that exist within a target landscape or region. At the farm level, this may include integrating extension services within models that incentivise a shift to longer-term collaborative relationships. In addition to this, early stage technical assistance may help gather market data to inform the preparation of business plans, define potential routes to market of target crops, or evaluate the possibilities to benefit from payment for ecosystem service schemes.

Post-investment

Once smallholder programmes become operational, there may be need for capacity building and enabling activities targeting key value chain players throughout the implementation phase.

Box 15: Structuring technical assistance throughout the investment cycle.

Upstream support directly targeting smallholders can cover a range of extension services that support farmers in the transition to sustainable practices. Examples of such support include:

- participatory methods to train smallholders on the adoption of new, sustainable agricultural practices to improve productivity;
- business and financial skills to assist smallholders in making informed income-oriented decisions that optimise available resources and diversify incomes;
- access to markets, which could include marketing activities, bulking of produce, or supporting the certification of small-scale producers;
- quality input provision, such as pesticides, fertiliser, planting seed and seedlings.

Downstream support can be targeted at cooperatives, processors and off-takers to promote market linkage and support value chain development. Examples of this include:

- establishment of digital platforms that link smallholders with buyers, bypassing middlemen and realising better prices for the produce sold;
- management and monitoring of supply operations, which can link larger buyers with local aggregators and improve the efficiency and reliability of transactions;
- enabling cashless transactions through mobile technology, through which value chain partners can accept cashless payments at a low cost.

In addition to the up- and downstream support targeted at value chain actors, *institutional and policy support* can be delivered to financial institutions and government authorities. These organisations can play a critical enabling role, but might lack the experience, expertise and resources to adapt existing processes or policies to ones that incentivise sustainable agriculture investments. Examples of support activities include:

- training financial service providers on the development of credit instruments tailored to the needs of smallholders;
- supporting banks with the uptake of ESG criteria for lending to ensure that high standards are applied when financing value chain actors;
- assisting government institutions with the uptake of policies that support multi-stakeholder initiatives and empower communities in landscape partnerships.



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Reinhardtstr. 18 | 10117 Berlin | Germany

Tel.: +49 30 311 777-700

info@wwf.de | wwf.de