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Company Progress in Engaging Smallholders to Implement Zero- Deforestation Commitments in Cocoa and Palm Oil



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1.

Executive summary

The production of agricultural commodities – including palm oil and cocoa – drives about seventy percent of tropical deforestation. Palm oil alone has accounted for over 20 percent of total deforestation -mostly in Indonesia and Malaysia- driven by the production of agricultural commodities since 2005. The situation is not much better in the cocoa sector. Cocoa production accounts for a relatively lower share of deforestation, yet remains one of the most significant drivers of forest loss in West Africa (where almost 75 percent of global production takes place).

Faced with increased public pressure over the last decade, companies have adopted a range of policies to reduce the deforestation impact of agricultural commodities. This report evaluates actions that companies in the palm oil supply chain in Southeast Asia and cocoa in West Africa have taken to engage their smallholder suppliers to achieve their zero-deforestation commitments. It describes how companies have approached the particular challenges of engaging smallholders, and how effective e these approaches have been.

Companies with zero-deforestation commitments need to engage smallholders if they are to achieve these commitments. Smallholders cultivate a significant portion of the palm kernels used to produce palm oil; and produce most of the cocoa grown in West Africa. In Indonesia, 46 percent of the land in palm oil production is managed by smallholder farmers; as are 28 percent of the plantations in Malaysia. In West Africa, smallholders play an even bigger role, producing over 90 percent of the cocoa grown in that region. Given the significance of smallholders in these supply chains, their cooperation is essential if companies want to meet their zero-deforestation commitments. Companies have adopted a range of policies to reduce the deforestation impact of agricultural commodities, and have started to implement zero-deforestation commitments.

It is not easy for multinational companies to engage with the smallholders in their supply chain. Challenges include the complexity of the supply chain, the heterogeneity of the supply base, uncertain land tenure and lack of financial resources and farmer education. While the challenges vary between commodities and locations, a lack of resources, farmer organization and market access are nearly universal in palm oil and cocoa supply chains. Because of these challenges, smallholders require more comprehensive support to shift to sustainable agricultural practices that avoid deforesting than large suppliers and producers.

Actions that increase corporate sourcing transparency and awareness are essential. Complex supply chains make tracking the origins of palm oil and cocoa commodities very difficult; although there has been progress in supply chain mapping and traceability by companies in both supply chains. For example, an increasing number of companies claim total traceability. However, these companies are likely to be making these claims by only referring to company-owned mills and corporate-scheme smallholders in

palm oil, and direct sourcing from smallholders in cocoa. Companies that have more complex supply chains face a much more challenging task. Palm oil and cocoa that is sourced from intermediaries and third-party owned mills or warehouses are often very difficult to map and monitor, and a 'deforestation-free' supply is very difficult to guarantee. These companies need to work with supplier mills and middlemen in the supply chain to identify and map all direct and indirect suppliers and build full traceability back to the plantation and farm level. In the end, only larger-scale (i.e. jurisdictional or landscape) approaches can uphold the claim that deforestation is reduced in cocoa or palm supply areas. These approaches remain challenging to implement, and are in most high-risk areas either not existent or in their infancy.

Efforts to engage smallholders remain limited in scope, and engagement programs still fail to reach them at scale. For example, engagement with smallholder palm growers is generally provided in the context of certification and mostly excludes independent smallholders (i.e. those not affiliated with a particular mill). In cocoa sector, buyers offer packages of interventions and services to smallholder producers to secure supplies of cocoa beans that meet their standards. But these efforts are unlikely to be transformative if they do not address poverty alleviation alongside efforts to curb deforestation.

Only a broad financing compact involving companies and public agencies will ensure sustainability in the cocoa and palm sectors. Smallholders are too vulnerable and weakly-positioned to take on the risk of changing their behavior in favor of deforestation-free agricultural practices. Companies cannot expect that zero-deforestation commitments can be achieved without transitional financial support to farmers paired with long-term price signals. Governments also have to acknowledge that zero-deforestation agriculture requires addressing systemic challenges and investing in governance reform, land titling, extension services, law enforcement and support for diversified income sources for farmers. The required investment is enormous. At this point, comprehensive investment plans that would share the burden among public and private actors are non-existent.

Pre-competitive collaboration at the level of a production landscape may be the only way to achieve consistent impact at scale. This is especially the case where supply bases are shared and supply chains are unstable, as is often the case where companies source from independent smallholders. Current company engagement programs are small and poorly coordinated. They may seek to cover risk-areas, but are generally limited to existing farm operations. This means future smallholders – who clear forest to establish a farm – are rarely covered in any program. Other smallholders may buy land that has been cleared of forests by third parties driven by speculation. In both cases, deforestation occurs before farmers generate fruit and enter a supply chain.

Establishing production and procurement standards, such as a certification requirement, is not enough to change producer behavior in smallholder systems. Certification applies harmonized rules and requirements that help to increase transparency around production methods and standardize produce quality. It is often the preferred choice for companies seeking to implement their zero-deforestation commitments since it allows for most of the implementation effort to be outsourced to third-parties (i.e. the certifying body). However, standardized rules become limiting when large parts of the smallholder supply base are not covered; or

when they actively push suppliers into supply chains not covered by commitments (e.g. such as the case of independent palm producers, who can simply switch to supplying a mill that does not require certification). In these cases, deforestation is pushed out of some supply chains, but into others.

Initiatives that seek to achieve long-term transformational change hold potential for curbing deforestation. The Cocoa & Forests Initiative, for example, promotes pre-competitive industry coordination and is designed to be applied at scale. As such it has the potential to increase the sustainability of cocoa production at the jurisdictional level; addressing the risk of pushing farmers into supply chains that are not concerned with the environmental impacts of production. However, the sustainability landscape shows a mosaic of programs that lack coordination and fail to cover smallholders at scale. Since companies have limited interest in addressing larger systemic issues related to poor governance, poverty and human development where these go beyond their business interests, close cooperation between public agencies, donors, and non-governmental organizations is needed. Unfortunately, this cooperative approach is still in its infancy.

Tailored approaches to smallholder support yield better results. Smallholder interventions tend to be more successful if they are based on a clear understanding of the local context, consider smallholder needs and constraints, and follow clear theories of change for action. Decision-making processes informed by stakeholder consultations can help companies to consider the local circumstances that influence smallholder behavior in their outreach and engagement programs. Companies should also consider institutional and organizational support as a key part of smallholder engagement, alongside technical and financial support. Creating and supporting farmer organizations and cooperatives offers opportunities to develop economies of scale for smallholder support.

Overall, companies alone cannot solve the many challenges facing smallholders, making government engagement and support indispensable. Individual company support limited to their own supply chains and those smallholders that supply them is unlikely to achieve transformative change. Eliminating deforestation depends on strong government institutions that implement and enforce land use regulations. Steps to improve income and productivity must be matched with effective control on forest conversion to avoid expansion driven by greater profitability. Support to smallholders to adopt climate smart practices to grow more crops on less land need to become part of the development agenda and policies of governments. Governments also have to ensure legal land tenure, support farmer organizations, and provide proper rights and benefits to farmers. These tasks are the responsibility of national, regional, local governments and customary institutions. Deforestation cannot be addressed in isolation from these underlying social and economic issues. Civil society organizations can also help by mobilizing and sharing knowledge, expertise, technology and financial resources as part of landscape- or jurisdiction-based collaborative approaches with the public and private sectors. Building long-term partnerships is essential for effective and sustainable interventions.

2. Introduction

The production of agricultural commodities – including palm oil and cocoa – drives about seventy percent of tropical deforestation.¹ Palm oil alone has accounted for over 20 percent of total deforestation driven by the production of agricultural commodities since 2005.² Most of global palm production takes place in Indonesia and Malaysia (together comprising 85 percent of global production).³ Despite a decline in Indonesian deforestation since a peak in 2016,⁴ the burning of forest land to make way for planting and converting carbon-rich peat land to oil palm plantations continue to release millions of tons of greenhouse gases into the atmosphere each year.

The situation is not much better in the cocoa sector. Cocoa production accounts for a relatively lower share of deforestation, yet remains one of the most significant drivers of forest loss in West Africa (where almost 75 percent of global production takes place).^{5,6} Côte d'Ivoire's forest cover more than halved from 1990 to 2015. Experts suggest up to 38 percent of this forest cover loss was driven by cocoa cultivation.⁷ Deforestation is often the result of migration into forested regions, particularly in the classified, protected forests. In 2018, Ghana saw one of the highest increases in deforestation rates globally.⁸ In the Guinean Rainforest regions of Côte d'Ivoire, Ghana, Nigeria and Cameroon, cocoa cultivation increased by 3.3 percent annually from 1988 to 2007, resulting in 2.3 million hectares of forest cover loss.⁹

Faced with increased public pressure over the last decade, companies have adopted a range of policies to reduce the deforestation impact of agricultural commodities.¹⁰ Such policies, which often take the form of 'zero-deforestation commitments', are company pledges to reduce or eliminate deforestation associated with the production, trading, or purchasing of commodities within the company's supply chain (see Box 1). Zero-deforestation commitments help to reduce reputational risk, ensure long-term commodity supplies, protect market shares, and demonstrate corporate responsibility. They can be implemented through a variety of mechanisms, such as adoption of codes of conduct, targets to source 100 percent certified products, or market exclusion mechanisms.¹¹

Unlike standards or codes of conduct, zero-deforestation commitments rarely specify criteria for implementation. They are also typically only one part of a corporates' social responsibility efforts and their engagement with smallholders. For instance, companies often seek to respond to demands for improved socioeconomic outcomes from agricultural production in addition to environmental considerations. The challenges, then, go beyond forest loss to include child labor, extreme poverty, declining productivity and a threatened supply base – not to mention the traditional business woes of competitiveness and profitability.

In palm oil supply chains, there is evidence that companies are starting to address deforestation. Eighty-eight percent of companies reporting to CDP,

¹² an environmental disclosure platform, claim to address deforestation in their palm oil supply chain.¹³ One fifth of Forest 500 companies^a that sourced palm oil in 2018 had a zero-deforestation commitment, as did over half of palm oil producers and traders assessed on the online platform Sustainability Policy Transparency Toolkit (SPOTT), an initiative of the Zoological Society of London.^b This high engagement may be because of increased public awareness of the negative environmental impact of palm oil production, which in turn poses reputational risk for companies that source and use palm oil. Moreover, the Roundtable on Sustainable Palm Oil (RSPO) – the most advanced sectoral sustainability certification scheme – offers a platform of engagement for the industry. In 2018, 80 percent of over 1,300 RSPO companies submitted required annual progress reports.¹⁴

Box 1 Forest-related company commitments and definitions

Over the years, corporate forest-related commitments have taken several forms. Depending on their deforestation reduction targets and a company's definition of a forest, commitments can take the following forms:

- A **'zero-gross deforestation' or 'no-deforestation' commitment** refers to no gross deforestation of natural forests, i.e. it prohibits all deforestation.
- A **'zero-net deforestation' commitment** refers to a company policy that allows reforestation to compensate for loss of forests, with no overall change in the forest area.
- A **'zero-illegal deforestation' commitment** refers to a company policy to abide by and align their operations with existing government laws and regulations.
- A **'No Deforestation, No Peat, No Exploitation' policy** prohibits development of palm plantations on High Carbon Stock Forests, High Conservation Value Areas, no peat conversion and no exploitation of people and local communities. It does not apply to cocoa.

This multiplicity of commitments and their lack of specificity regarding targets and cut-off dates (i.e. a date after which clearance of natural forests and commodity produced there is noncompliant) has been partly due to a lack of consensus on the definition of forests and deforestation; and partly due to lack of clear guidance on how to set, implement and monitor forest-related commitments. The **Accountability Framework** developed by the Accountability Framework initiative (AFI)¹⁵ has filled this gap by aligning definitions and setting clear guidelines for companies to deliver on their supply chain commitments. The Framework provides a practical roadmap to set and implement commitments, monitor and report on their progress.

In cocoa supply chains, corporate zero-deforestation targets are embedded in the framework of the Cocoa & Forests Initiative (CFI). The CFI was launched in 2017 as a public-private partnership between the governments of Ghana and Côte d'Ivoire and a consortium of leading chocolate and cocoa companies to confront the high rates of deforestation in West Africa driven by cocoa production.^c The CFI commits partners to stop any conversion of protected forest land for cocoa production, to restore critically degraded and deforested ecosystems, and to transition cocoa production towards less harmful management practices.^d In March 2019, companies representing 85 percent of the global cocoa trade released Action Plans that

^a Global Canopy's Forest 500 assesses the 350 most influential companies in palm oil, soy, cattle, paper, and timber supply chains. Global Canopy. (2018). Forest 500. *Global Canopy*.

^b The Sustainability Policy Transparency Toolkit (SPOTT) developed by the Zoological Society of London is a free online platform supporting sustainable commodity production and trade. SPOTT scores tropical forestry, palm oil and natural rubber companies annually against over 100 sector-specific indicators to assess their performance related to environmental, social and governance (ESG) issues. From <https://www.spott.org/about/>.

^c Colombia joined the CFI as third government in 2018.

^d The various documents supporting the CFI can be found on the webpage of the World Cocoa Foundation, including the aggregated initial company action plans for Côte d'Ivoire and Ghana. World Cocoa Foundation. (2018, August 27). Cocoa & Forests Initiative. *World Cocoa Foundation*. <https://www.worldcocoafoundation.org/initiative/cocoa-forests-initiative/>.

describe activities that will be undertaken between 2018-22 to deliver on the commitments set out.

In both supply chains, cooperation with smallholders is essential if companies want to meet their zero-deforestation goals. Smallholders play a very important role in the production of both commodities: they produce about 40 percent of the total supply of palm oil; and almost all of the cocoa in West Africa (estimated 95 percent).^{e,16,17} In Indonesia, small-scale agriculture and small-scale mixed plantations together resulted in 22 percent of deforestation during 2014-16.¹⁸ Large-scale palm oil plantations remain an important driver of deforestation, but their contribution to deforestation has dropped from 40 percent in 2008-09 to less than 15 percent in 2014-16.¹⁹ In cocoa, almost all deforestation is driven by smallholders.

However, engaging farmers in deforestation-related programs is not easy. Farmers' low income and poverty make them vulnerable and limit their ability to invest in sustainable agricultural practices. The exposure to shocks triggered by extreme weather events, pests, or disease, and the implication that those shocks have for household income, naturally makes farmers risk averse. The vulnerability associated with weak land tenure security and fluctuating income favor small immediate awards over long-term increase in yield, diversification of income and farm resilience.

Companies' efforts to engage smallholders in the implementation of their zero-deforestation commitments remain limited in scope and scale. Many companies invest in traceability and larger corporate players implement smallholder engagement programs that offer inputs, training and access to finance. However, these efforts are often limited in scale, and fail to effectively address the systemic problems facing smallholders in palm and cocoa production. In palm, corporate efforts tend to focus on promoting and enabling certification, which in the absence of premium payments is of limited appeal to smallholders. In cocoa, company programs often lack coordination and fail to address constraints such as lack of tenure or diversification of income which would help to empower farmers in the long term.

Company efforts to engage smallholders are also impacted by local pressures and priorities. Changing or inconsistent public policies can negatively affect the ability of a company to successfully implement its commitments.²⁰ On the other hand, public policies synergistic with corporate deforestation policies can increase the likelihood that a company will meet its own deforestation-related targets. The provision of land tenure security or the facilitation of information sharing and supply-chain transparency are but a few examples.²¹ In addition, civil society actors such as local non-governmental organizations (NGOs) play an important role in supporting zero-deforestation commitment implementation as well as holding companies accountable for the progress in implementing and achieving their zero-deforestation commitments.²²

So far, it is not clear whether company efforts to eliminate deforestation from smallholder operations in palm oil in Southeast Asia and cocoa in West Africa will result in lower deforestation. The rates of deforestation in Côte d'Ivoire and Ghana remain among the highest in the world,²³ and findings on the impact of company efforts to push deforestation from their supply

^e 40.8 percent of the Indonesian palm oil production area is managed by smallholders (DJP 2015 via Jelsma et al. 2017).

chains in the palm oil sector remain inconclusive.²⁴ In the absence of clear data, there is a need to review company efforts to assess their effectiveness and shortcomings.

2.1

Objectives

The objective of this report is to evaluate whether companies with zero-deforestation commitments have been successful in engaging commodity-producing smallholders to achieve these commitments. We focus on palm oil companies active in Indonesia and Malaysia; and cocoa companies active in West Africa. Our analysis is based on a systematic review of actions that companies have taken to reduce the deforestation impact of smallholder operations. In doing so, we seek to answer the following questions:

- What have companies done to engage smallholders?
- Which strategies have been successful or are promising, and which ones less so?
- What are the challenges facing companies in successfully engaging smallholders?
- How can the effectiveness and impact of company action be improved?

We begin by providing a short overview of the palm oil sector in Indonesia and Malaysia and the cocoa sector in Côte d'Ivoire and Ghana (Section 3). We then summarize the instruments and tools companies use to implement their zero-deforestation commitments in smallholder systems, including barriers for action (Section 4). This section also contains the empirical core of this paper in that it summarizes efforts companies make to implement zero-deforestation commitments in the cocoa and palm oil sectors. Section 5 summarizes and discusses the findings. And Section 6 lays out some recommendations for companies to ensure effective implementation of smallholder engagement interventions.

3. Palm oil and cocoa production

3.1 Palm oil in Indonesia and Malaysia

Indonesia and Malaysia produce 85 percent of the world's palm oil, dominating global palm oil production.²⁵ Indonesia exports 70 percent of its production, while Malaysia exports 85 percent. Palm oil is a major industry that covers millions of hectares (ha) of land and employs millions of people, contributing significantly to Gross Domestic Product (GDP), employment, income and growth. In Malaysia, 46.6 percent of national GDP from agriculture came from palm oil in 2017.^f In Indonesia, palm oil contributes 2.5 percent of the country's total GDP, and the sector provides direct and indirect employment for more than 16 million people.²⁶

The palm oil supply chain is complex and involves many stakeholders at the supply and demand ends, as well as a few traders in the middle.²⁷ It is comprised of large-scale plantations, smallholders, mills, refiners, traders, manufacturers, and retailers. Large plantations as well as millions of smallholder farmers – each with different characteristics and levels of market integration – supply fresh fruit bunches from oil palms to mills where they are processed. Due to their perishability, fresh fruit bunches have to be transported to crushing mills – where crude palm oil and palm kernel oil are extracted—within 24 hours of harvest. The oil is further processed in refineries and used in the manufacturing of numerous consumer products. Most palm oil is processed and refined in Indonesia, Malaysia and Singapore, while manufacturing takes place mostly in consumer countries in Europe and Asia.

A handful of conglomerates who are involved in production, processing and trade of palm oil dominate the sector. These companies source palm oil from their own plantations as well as from smallholders and other third-party suppliers, and supply processed palm oil to diverse manufacturers of consumer goods across the world who are increasingly under pressure to source sustainably.²⁸ Unlike in cocoa, the downstream supply chain in palm oil is highly fragmented, which means individual manufacturers and retailers have less influence on upstream companies.²⁹ The largest companies who are active in all upstream stages of the supply chain (growing, crushing, refining and trading) include Wilmar, Musim Mas, Golden Agri Resources (GAR), Cargill and Asian Agri in Indonesia, and Sime Darby and FGV Holdings Bhd in Malaysia.

In Indonesia, smallholders cultivate 46 percent of the agricultural land used for palm oil, while large private companies control 50 percent. In Indonesia, smallholder plantations have an average size of 2-5 ha, and a maximum size of 50 ha.³⁰ The government has encouraged smallholders to cultivate

^f Total contribution of the agriculture sector was 8.2 percent or RM96.0 billion of the Gross Domestic Product (GDP). Total GDP was RM1,371.6 billion in 2017. Department of Statistics Malaysia. (2018, December 31). Selected Agricultural Indicators, Malaysia, 2018. *Department of Statistics Malaysia Official Portal*. https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=72&bul_id=UjYxeDNkZ0xOUjhFeHpna20wUUJOUT09&menu_id=Z0VTZGU1UHBT1VJMFpaXR00xpdz09.

oil palm as a poverty-reduction strategy, and the total area of smallholder plantations has grown from less than 1.6 million hectares in 2001 to 5.8 million ha in 2018.³¹ They now control 45 percent of total plantation area and by 2030, this will likely grow to 60 percent indicating the increasingly important role of smallholders in protecting the country's remaining forests and peatlands.³² In terms of productivity, smallholders in Indonesia consistently underperform compared to large-scale plantation companies, which on average produce 35 percent more palm oil per hectare of land than smallholders (see Figure 1).⁹ The main constraints on smallholder yields are a lack of sufficient inputs and labor to maximize harvest potential, as well as insufficient financing for replanting of aging stock.³³

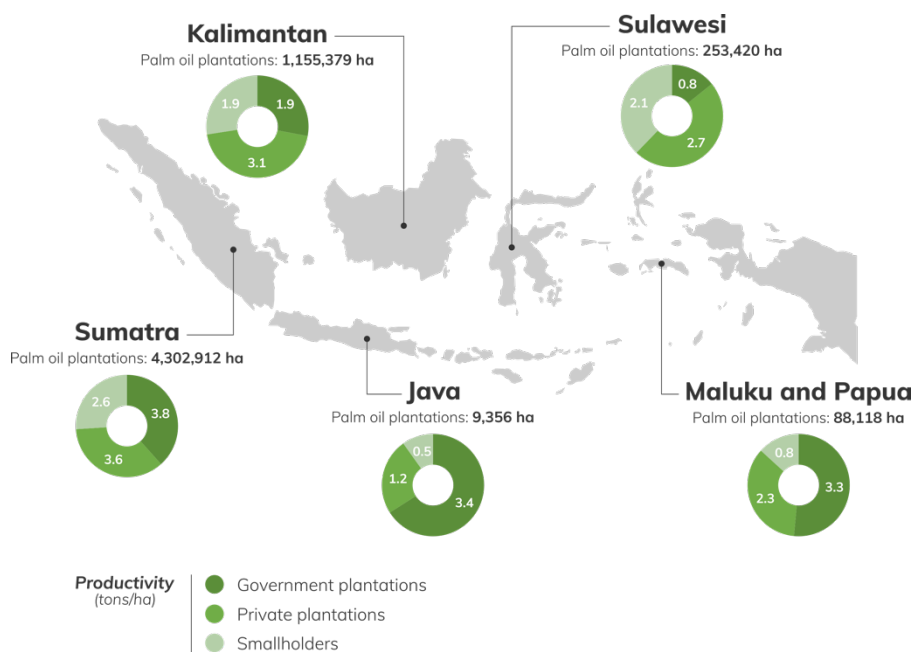


Figure 1 productivity across palm oil production systems in Indonesia

In Malaysia, there are almost six million hectares of palm oil plantations.³⁴ Two-thirds of these plantations are owned by large companies, while smallholders cultivate the remaining third of plantations. Seventeen percent of these are cultivated by independent smallholders, and 11 percent by contract or 'scheme' smallholders.³⁵ Smallholders receive technical and financial support from the government, and their productivity is comparably much higher than in Indonesia.³⁶

Table 1 Palm oil production and producing entities in Indonesia in 2018

	PRIVATE COMPANIES	STATE-OWNED COMPANIES	SMALLHOLDERS
Planted area (million ha)	6.4	0.6	5.8
Crude palm oil production (million tons)	20.5	2.1	14
Number of actors	1,569 companies	162 enterprises	1,872,016 households

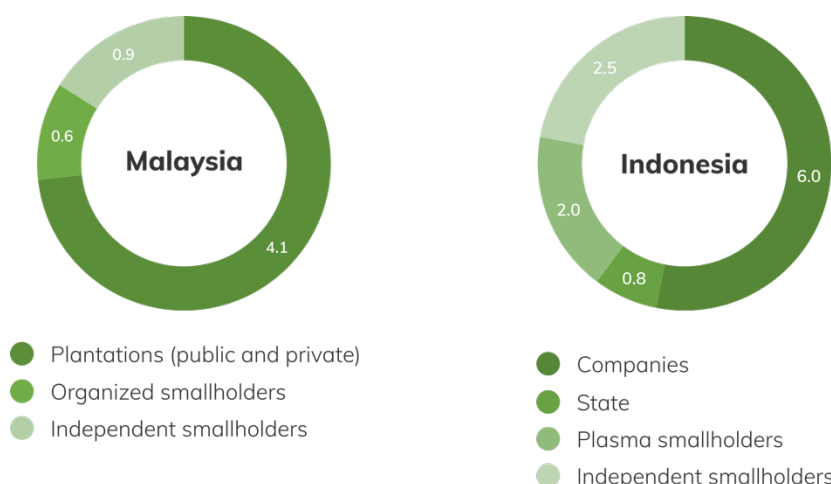
Palm oil smallholders operate either as independent agents or contract farmers. Independent smallholders are free to market their products but rely on official government extension services for technical support. Smallholders who have contractual arrangements are bound to supply the

⁹ Climate Focus calculations based on data from BPS – Statistics Indonesia.

facilities of the contracting firm with oil palm fruits. The firms typically provide financial and technical services to these contractual – or ‘scheme’-smallholders. Scheme smallholders typically achieve higher yields than independent growers and enjoy higher income.^{37,38} However, scheme smallholders’ dependence on oil palm may make them more dependent on palm oil price or production shocks than non-scheme smallholders.³⁹

Scheme smallholders in Indonesia are generally those farmers who took part in the Plasma Transmigration Program set up by the Indonesian government in 1987. The program relocated rural Indonesians to oil palm growing areas, assigning two hectares of land to farm and half an acre for housing and food crop cultivation to each household.⁴⁰ The scheme farmers were partnered with a company which provided employment while the land was prepared, and after four years, the oil palms were ready for harvesting. The company typically provided technical support, while the scheme farmer agreed to sell their produce to the company at a price set by the government. These scheme farmers are therefore also called plasma farmers.

Figure 2 Area of palm oil production by actor in Indonesia and Malaysia, in million hectares



Source: Data from Indonesia’s Agriculture Ministry (2015) and Malaysian Palm Oil Board (2018)

Palm oil mills source fresh fruit bunches from their own plantations, scheme smallholders, or local collectors. Large plantations and scheme smallholders directly transport fresh fruit bunches to palm oil mills. Independent smallholders sell to local collectors that in turn sell to palm oil mills, or they sell to local collectors or middlemen that in turn sell to cooperatives that finally sell to palm oil mills. Hence, there is no direct link between mills/companies and independent smallholders who in turn receive little to no support and often depend on informal land, input, and offtake markets. As a result, smallholders are difficult to monitor through current traceability systems.

Independent smallholders in both Indonesia and Malaysia are rarely organized in cooperatives. This is a critical barrier to their certification and to receiving support from palm oil companies and the government. Cooperatives usually offer better opportunities to develop economies of scale and to distribute costs of compliance among cooperative members.^{41,42} However, setting up cooperatives is not easy, and creating a functioning internal management, decision making, and financial management is often difficult to organize. Scheme or plasma smallholders are generally better organized. In Malaysia, for example, scheme smallholders are represented by the Federal Land Development Authority (FELDA) which was established to resettle rural poor and eradicate poverty

through oil palm and rubber cultivation. It is the largest smallholder organization in Malaysia, controlling over 490,000 ha of smallholder plantations and 330,000 ha of large plantations.⁴³

A lack of resources and tenure security limit Indonesian independent smallholders' ability to integrate into sustainable supply chains. Smallholders often also lack information about good agricultural practices, and hence typically produce less productively and sustainably. They often purchase cheap, low-yield seedlings and burn land to make way for crops.⁴⁴ Therefore, meeting stringent certification standard criteria like the possession of land titles, the use of high-quality planting materials, non-harmful agrochemicals, appropriate fertilizers, and documenting their activities in their plantation is cumbersome for most.⁴⁵ A lack of organization among the heterogeneous group of independent smallholders means they cannot leverage economies of scale to access inputs and services or to sell their produce, making it hard for them to integrate in the supply chain. In addition, the increasing demand for certified oil palm and slow inclusion of smallholders in the certification process results in a risk of smallholder farmers to be excluded from company supply chains. This in turn reduces the capacity of companies and government agencies to provide financial and technical support.⁴⁶

Furthermore, smallholder palm oil farmers have limited access to financial resources. Establishing and maintaining a plantation using sustainable practices is prohibitively costly for smallholders if they are not supported.⁴⁷ For example, replanting a smallholder farm – essential to maintaining the productivity of a farm as trees age out of their productive years – costs an estimated 50 million Indonesian Rupiah⁴⁸ (about USD 3,590^h). In Indonesia, 30 percent of all smallholder plantations need to be replanted by 2025, with an estimated cost of USD 5 to 6.5 billion.⁴⁹ Even when smallholders do manage to replant, they often struggle to repay loans and maintain a cash flow.⁵⁰ Most independent smallholders, therefore, are assessed by banks to be too high risk to access loans because of their ambiguous land ownership status, low income and high risk of default.⁵¹ Access to finance therefore often requires that farmers be organized into cooperatives.⁵²

3.2

Cocoa in Côte d'Ivoire and Ghana

West Africa is home to three quarters of the world's cocoa production.⁵³ Côte d'Ivoire alone accounts for over half of this total (56 percent), with Ghana second (26 percent) and Cameroon and Nigeria third (7 percent each).⁵⁴ Cocoa is especially important to the economies of Côte d'Ivoire and Ghana, where it accounts for 28 percent and 9 percent of exports respectively.^{55,56} In Côte d'Ivoire cocoa accounts for 10 percent of the country's total tax revenues; and in Ghana it accounted for 1.6 percent of total GDP in 2018.^{57,58} Exporting mostly unprocessed beans, with earnings equivalent to less than a tenth of world chocolate sales, neither country captures the large returns higher up in the value chain.⁵⁹

The cocoa market in both countries is, however, highly regulated. Domestically, both the Ivorian and Ghanaian governments regulate their cocoa markets through their central regulatory agencies: Cocobod in Ghana and the Conseil du Café et Cacao (CCC) in Côte d'Ivoire. Both agencies provide a variety of direct extension services to farmers, have support programs in place to combat cocoa diseases, and provide for inputs and

^h Based on an exchange rate of USD 1 = 13938.12 Rupiah as on January 6th, 2020.

planting.⁶⁰ Farmers receive the farm gate cocoa price determined by the respective government (Box 2).

Box 2 Cocoa pricing in the West African market

The world market price for cocoa is determined as an average price for cocoa futures in the New York and London commodity exchanges. Traders pay a slightly different price depending on quality requirements and country of origin. Historically, cocoa prices have been volatile and subject to shocks ranging from oversupply, pests and disease, weather patterns, and civil war.

While the farm gate price in most cocoa producing countries reflect the fluctuating world market price, cocoa pricing in Ghana and Côte d'Ivoire is different. Both countries have cocoa marketing boards that pre-sell part of their harvest in the year before the harvest season starts. The Conseil du Café-Cacao (CCC) in Côte d'Ivoire and the Cocobod in Ghana determine a fixed price around October 1st, when the main crop season begins. CCC fixes farm gate price at 60 percent of the value that the CCC has been able to make pre-sales, while COCOBOD pays farmers 70 percent of the world market price.

In June 2019, Côte d'Ivoire and Ghana proposed a floor price of USD 2,600/ton for the 2020/2021 season, as the price paid to traders (farmers receive a lower price than this after additional fees and costs are considered). However, this was revised following a meeting composed of CFI signatories Hershey, Mars, Blommer, Cemoi, SucDen, Mondelēz, Touton, Barry Callebaut, Cargill, Olam, and Ecom. The revision proposed that buyers instead pay a USD 400/ton fixed premium, called a "living income differential" to be redistributed to farmers as bonuses when cocoa prices fall between USD 2,600 – 2,900 during the season. The goal is to reach a minimum farm gate price and bonus payment of at least USD 1,820/ton. Drawing from recent data collected by KIT Royal Tropical Institute, an average cocoa farmer in West Africa may own between 2-4 hectares of land, and produce roughly 400 kg/hectare. Under the proposed scheme, the average farmer would then earn between USD 1,456 – USD 3,640 per year, which falls short of proposed living income levels.

Over 90 percent of cocoa in West Africa is produced by 1.8-2 million smallholder farmers (Table 2).⁶¹ In Côte d'Ivoire, average farm sizes are reported to be between three and four hectares. Ghanaian farms are estimated to be two hectares on average, though no reliable statistics are available.⁶² Very little of the cocoa value is captured by the farmers. The regulated farm gate prices set by the respective governments are significantly lower than the global cocoa price, and farmer incomes in these countries are lower than incomes in unregulated markets such as Indonesia, Nigeria, or Cameroon.⁶³ For the 2014/15 season, farmers in Côte d'Ivoire only earned 53 percent of the world cocoa bean price, and those in Ghana earned 48 percent.⁶⁴

Table 2 Number of cocoa smallholders in Côte d'Ivoire and Ghana

COUNTRY	NUMBER OF COCOA SMALLHOLDERS
Côte d'Ivoire	1,000,000 ⁶⁵
Ghana	800,000 ⁶⁶ - 1,000,000 ⁶⁷

Côte d'Ivoire has a more competitive and liberalized market structure than Ghana. In Côte d'Ivoire, farmers and cooperatives can sell cocoa to local intermediaries or to export cooperatives or companies which hold export-licenses.⁶⁸ In Ghana, farmers sell their cocoa through intermediaries to Licensed Buying Companies (LBC) that are authorized and approved by Cocobod. The LBCs then sell cocoa sourced from smallholders to Cocobod. Farmers receive a bonus payment if Cocobod can market the cocoa at higher than anticipated prices.⁶⁹ Farmers' lack of liquidity and knowledge asymmetries make them susceptible to intermediate traders who purchase cocoa at lower prices against direct cash. Other farmers either sell their crop directly to an LBC or a processor.

The aggregation and organization of cocoa farmers in West Africa is generally low. In Côte d'Ivoire, over 1,500 registered cooperatives represent 20-50 percent of farmers and are responsible for just over half of total production.^{70,71,72} However, most of these cooperatives are not functioning properly, typically due to a lack of capacity, knowledge gaps, funds, infrastructure, and mistrust. The majority of farmers in Ghana are not formally organized (85 percent according a 2011 study)⁷³, though they are automatically registered with the Ghanaian Cocoa Coffee and Sheanut Farmers Association (GCCSFA).⁷⁴ The GCCSFA is governed by a system of district and regional Chief Cocoa farmers from the cocoa growing districts and regions.⁷⁵ However, it is unclear whether farmers perceive to be represented by the GCCSFA.

Future security in cocoa supply is increasingly uncertain due to multiple factors, including: aging trees with diminished productivity, climate change and changes in crop suitability areas, deforestation, soil degradation, and crop disease. A decline in soil fertility— especially in the absence of organic matter and fertilizer application following forest clearing —, the low quality of planting materials, and pests and diseases are some of the major causes of yield decline. This rising insecurity in cocoa supply has the potential to negatively impact the livelihoods of smallholder cocoa producers who rely on this crop for as much as 70-100 percent of their income.⁷⁶ As a consequence of low-quality inputs and production methods, yields are low with about 500-600kg/ha in Côte d'Ivoire and about 400kg/ha in Ghana, compared to 1,000-1,900 kg/ha yield of intensified production in the region.⁷⁷

Many farmers address the decline in productivity through farmland expansion into forested areas, effectively 'mining' forest soils for minerals. Area expansion often results from a lack of access to improved inputs and practices, as well as capital to invest in healthier and more productive trees. Replacing aging cocoa trees with new ones would in fact be an option if farmers were to continue cocoa production sustainably. Replanting and rehabilitating trees, alongside proper soil management and fertilizer use, are essential to increasing yields while reducing the need to clear forest land for production. Through improved farm management and pest and disease control, cocoa yields could be increased by 40 percent to 700 kg/ha. Fertilizer use could increase yields to as much as 1,000 kg/ha.⁷⁸

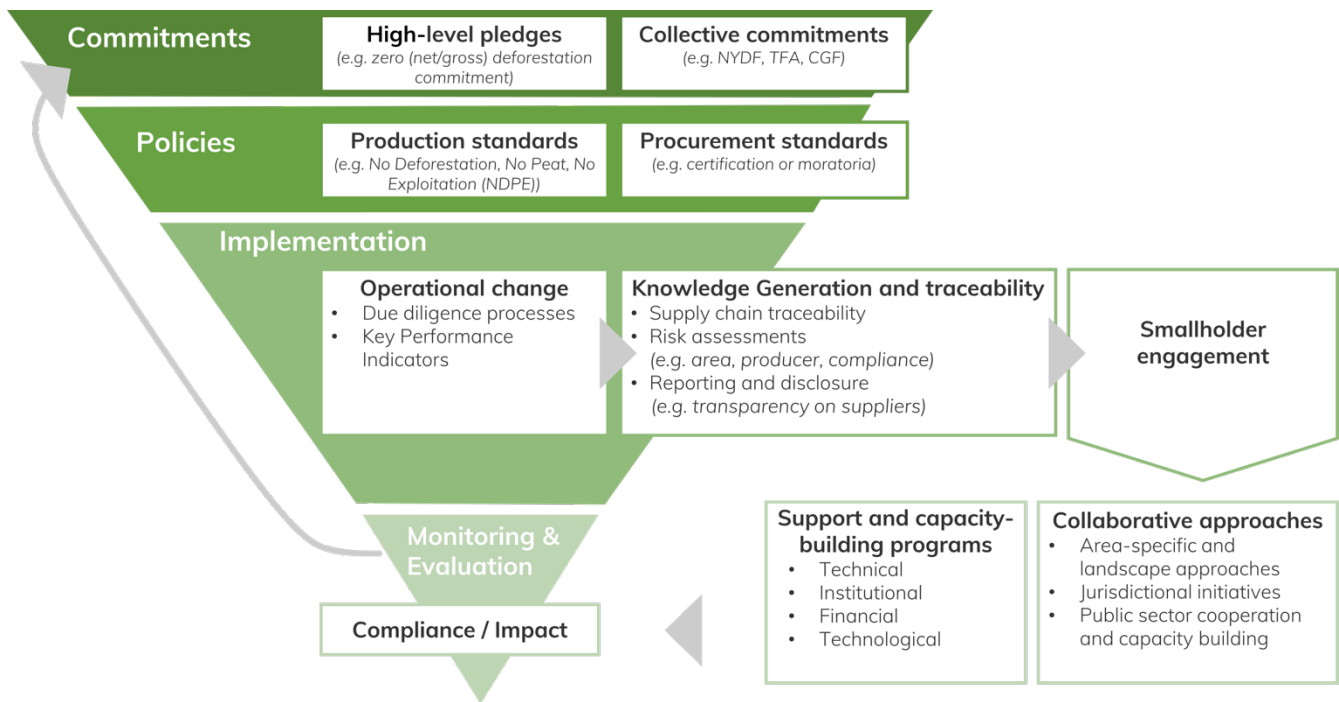
4.

How do companies implement zero-deforestation commitments?

Companies must take concrete steps to implement zero-deforestation commitments to address forest loss. The implementation process follows a cascade of activities (Figure 3) starting with the public commitments and pledges through which the company announces its intentions. Generally, a company will then formulate a number of internal strategies which aim to change the company's own day-to-day operations. Implementation and compliance mechanisms for zero-deforestation commitments usually include incentive- and sanction-based standards. Incentive-based standards, such as certification programs, are industry-wide protocols with the goal to provide benefits to individual producers for curbing deforestation. Sanction-based standards, such as bans or moratoria, target individual entities or entire jurisdictions and establish penalties for deforestation, typically through market exclusion.⁷⁹ Tools for implementing zero-deforestation pledges therefore include the adoption of codes of conduct, targets to source 100 percent certified products, and market exclusion mechanisms (Table 3).⁸⁰

An essential step in implementing zero-deforestation commitments is to understand where deforestation risks are present in a company's supply chain. This is particularly relevant in the palm oil and cocoa sectors where companies rely on a myriad of smallholder producers spread across wide geographical areas. Companies therefore need to be able to identify the areas in their supply base that represent the greatest risk of deforestation, peat land conversion, or fire.⁸¹ These risk assessments can also be used to develop coherent sourcing policies and appropriate targets and timescales for eliminating deforestation. While it is methodologically challenging to identify the production areas at greatest deforestation risk, helpful tools are increasingly available. Based on satellite data and geospatial information systems, so called "geospatial deforestation risk assessments" collect and analyze information on past and present deforestation events and forest status.⁸² When implemented at the level of a cooperative or mill, these systems can help detect changes in forest cover within the supply base. High-risk areas can then be identified to provide producers targeted support and incentives to enhance the sustainability of their production practices.⁸³ Satellite-based tools may also support monitoring of impact after engagement. Tools like Global Forest Watch Pro, which allows companies to use geospatial data to monitor deforestation in their supply chains, can further help companies to coordinate their activities.⁸⁴

Figure 3 Flow of company actions to engage suppliers and smallholders in zero deforestation targets



Once companies have mapped the smallholders active in their supply chain, they can start to engage them to achieve the company’s zero-deforestation commitments. This is commonly done through support programs. These may be run as standalone efforts – whether by the company or by a partner NGO – or may be implemented collaboratively as part of a larger landscape- or jurisdictional- approach.

Table 3 Company instruments to implement zero-deforestation commitments

POLICY	DESCRIPTION	EXAMPLES
Commitments and policies		
High-level commitments	A commitment to achieve a particular outcome in relation to deforestation and forest restoration. Such high-level commitments can come in the form of single-company aspirational pledges or collective commitments. Often, these pledges include a commitment not to convert any forest land (gross deforestation) or a commitment ensuring that forest land be cleared or converted only as long as an equal forest area is replanted elsewhere (net deforestation).	Ten goals of the New York Declaration of Forests, ⁱ Goals of the Tropical Forest Alliance (TFA) ⁸⁵ and associated pledge of the Consumer Goods Forum (GCF), ⁸⁶ Cocoa and Forest Initiative (CFI). ⁸⁷ While TFA and GCF include palm oil, among others, in their pledges, the CFI focuses on cocoa.
Production standards	A more concrete commitment relating to the production method of palm oil or cocoa. Production standards often exclude certain areas (e.g. no developments in High Conservation Value (HCV) and High Carbon Stock (HCS) or new peat areas), or the exclusion of certain sourcing areas through moratoria.	No Deforestation, No Peat, No Exploitation (NDPE) commitments, e.g. by Wilmar, ⁸⁸ PepsiCo, ⁸⁹ or Cargill. ⁹⁰ An example of a collective and collaborative production standard is the Soy Moratorium of the Brazilian Amazon.
Procurement standards	A more concrete commitment relating to the quality and sustainability of palm oil or cocoa. Such product criteria often relate to the certification of produce.	Mars' s Sustainable Palm Oil Sourcing Policy. ⁹¹ Nestlé's pledge to source 100 percent RSPO certified palm oil by 2023. ⁹² Hershey's commitment to source 100 percent certified cocoa by 2020. ⁹³
KNOWLEDGE-GENERATING SYSTEMS		
Traceability and supplier mapping	The tracing of produce or its components through stages of a supply chain. NGO initiatives have supported these efforts, e.g. through publishing a Universal Mill List that allows mapping palm oil mills. ⁹⁴	In April 2019, Barry Callebaut announced that a third of its global cocoa supply is traceable. ⁹⁵ In March 2019, Olam announced that they have achieved 100 percent traceability of its cocoa supply chain in Côte d'Ivoire and Ghana. ⁹⁶
Deforestation risk assessments	Collection of field data, stakeholder consultations and desk-based analyses of existing information that inform the company of forest risks related to the production area or production practices. Non-governmental organizations and private providers have developed tools to facilitate risk assessments, e.g. Proforest or WRI's Global Forest Watch Pro. ⁹⁷	Cargil, Golden-Agri Resources, Louis Dreyfus Company, Mondelez, Procter&Gamble, and Unilever all use Global Forest Watch Pro. ⁹⁸
Monitoring	Assessments of (non-)compliance to the company's sustainability policies. Compliance may be assessed at the level of production or primary processing unit(s) (e.g., farms, farmer groups, or mills), supply chains, or an entire company commitment. Often supported by systems that facilitate the collecting of farm level data and information. This can be directly inputted by the farmer (such as in a digital format) or through a company representative.	PepsiCo Palm Oil Traceability Protocol; ⁹⁹ Olam Farmer Information System (OFIS); the SHARP Responsible Sourcing from Smallholders (RSS) framework; ¹⁰⁰ Lifecycle Assessments (LCA). ¹⁰¹
Reporting and disclosure	Publication of data related to the implementation of commitments, compliance and effectiveness of efforts.	Publicly disclosing company suppliers (direct and/or indirect), e.g. by Unilever ¹⁰² and Ferrer ¹⁰³
IMPLEMENTATION OF COMPANY POLICIES: INTERNAL COMPANY ACTION		
Internal due diligence	Pro-active and re-active company processes to ensure the implementation of company policies.	Information not publicly available
Specific Key Performance Indicators (KPIs)	A system of measurable and auditable metrics to gauge operational performance. When these KPIs are tied to executive and managerial compensation, they can provide incentives for full implementation.	Mondelez's Cocoa Life program ¹⁰⁴
IMPLEMENTATION OF COMPANY POLICIES: SUPPLIER AND PRODUCER ENGAGEMENT		
Supplier codes of conduct	A formulation of binding operational principles for suppliers. If suppliers are noncompliant they may be excluded from the supply chain until they mitigate deforestation risks in their operations.	COFCO's Supplier Code of Conduct and commodity specific policies, ¹⁰⁵ Based on its palm oil policy, Mondelez has excluded twelve non-compliant suppliers from its supply chain. ¹⁰⁶ No exclusions are known in the cocoa sector.
Smallholder support programs	Programs, financed in whole or in part by companies, intended to provide technical training, input support (extension services), financial literacy and access, and capacity, technology, or financial services to smallholder producers within company supply chains and sourcing areas.	Mondelez's Cocoa Life program, ¹⁰⁷ Nestlé and Earthworm Foundation's Rurality program, ¹⁰⁸ Musim Mas' Palm Oil Development Scheme for Smallholders (IPODS).
IMPLEMENTATION: COOPERATIVE APPROACHES		
Area management	Development of plans for how to protect particular areas (e.g. HCV/HCS, peat). Actions will depend on the local context and may range from total protection to moderate use of certain areas and co-management with communities. ¹⁰⁹ This may include public sector capacity building.	Musim Mas' 'training the trainers' for extension services ¹¹⁰ or providing mapping technical support to local peat agency..
Landscape and jurisdictional initiatives	Multi-stakeholder initiatives in a landscape or jurisdiction that include companies, subnational governments, farmers and civil society.	The jurisdictional approach in Sabah in Malaysia includes specific goals for mapping smallholder farms, improving their capacity and facilitating smallholder land registration. ¹¹¹

ⁱ The text and context of the NYDF can be accessed via the NYDF Global Platform: <https://nydfglobalplatform.org/>

4.1

Types of smallholder support programs

Cocoa beans and palm fruits are primarily produced by smallholders. These smallholders are linked to large companies that procure their produce in raw or processed form, either directly or via middlemen, aggregators and traders, making them an integral part of global agricultural supply chains and markets. Companies therefore play a critical role in incentivizing sustainable commodity production and improving smallholder livelihoods. In cocoa, a relatively small number of off-taker companies control a significant portion of the market, theoretically giving companies leverage to demand a certain standard of practice. Roughly half a dozen companies control the bulk of cocoa sourced from West Africa. The four largest firms (Mars, Mondelez, Nestlé and Ferrero) own half of the market share of West African cocoa. Most of this cocoa is destined for the Netherlands – the largest importer of cocoa beans in the world – and the United States.¹¹²

The palm oil market is much less concentrated, though a limited number of companies still control the refining of crude palm oil and have leverage over the mills from which they source.

Since smallholders have limited resources and are directly exposed to climate-related risks, they typically require more comprehensive support to avoid deforestation than large suppliers and producers. Smallholder engagement programs therefore need to be tailored to the local context. Engagement programs should consider the environmental outcome (avoided deforestation) as well as the need to improve smallholder livelihoods to ensure long-term sustainability of supply, avoidance of shifting to unsustainable practices. Sustainable production can only be achieved if there is an investment into the individual farm, coupled with the establishment of a resilient landscape in which farmers operate. This often requires cooperation with non-government and government partners.

Smallholder support programs cover a range of activities that work towards sustainable commodity production. These include interventions across technical, institutional, financial, and technological categories (Table 4). *Technical* support includes capacity building for skills, knowledge, and access to technical resources for farmers to adopt or implement new management practices. *Institutional* support focus on the legal, regulatory, political, or community-based conditions that can help or hinder these practices, while *financial* support is concerned with increasing the ability of a smallholder to afford or receive finance for farm-level activities. Last, *technological* support specifically provides new or updated technology – from tractor sharing to mobile apps – which improve farm infrastructure, enhance coordination or management across a value chain, or increase access to knowledge and data.

Table 4 Types of smallholder support

	DESCRIPTION	OBJECTIVE(S)	ILLUSTRATIVE ACTIVITIES
Technical support	Concerns the agronomic skills, knowledge, and access to resources needed to implement and/or adopt sustainable production practices	Provide or expand access to the needed skills, knowledge, and technical resources for farmers to adopt new management practices for sustainable production and/or certification standards	Providing inputs, trainings, farm management plans, farm-level tools, extension services, planting materials, etc.
Institutional support	Concerns the legal, regulatory, and/or political conditions that could enable greater access	Address gaps in the legal or regulatory ecosystem and/or farmers' knowledge of engaging	Assisting with land or tree tenure, awareness raising events, supporting farmer aggregation

	and/or motivation for farmers to practice sustainable production	in these processes to improve farmers' ability to adopt sustainable practices and/or certification standards	points such as cooperatives, community-based natural resource groups, or local governance structures.
Financial support	Concerns the provision of financial knowledge, resources, or contact with financial institutions to access and efficiently utilize affordable finance	Address issues with affordability, accessibility, or high risk of non-repayment of finance to improve farmers' ability to purchase or receive lending for implementing sustainable production strategies and/or achieve certification standards	Improving lending terms in available finance (i.e., grace periods for repayment, lower interest rates, etc.); provide collateral (i.e., off-taking contract) to provide direct loans and/or financial products to smallholders, offer trainings on financial literacy, etc.
Technological	Concerns the provision of new and/or upgraded access to technology or infrastructure.	To improve management, coordination, and/or knowledge for farmers. Includes farmer-to-farmer information sharing, access to knowledge resources, improved production efficiency or outcomes, and/or access to other needed resources to adopt sustainable production practices and/or achieve certification standards	Improving data collection and analysis, information and communication technology, or farm-level infrastructure or agricultural technologies

4.2

Challenges in engaging smallholders

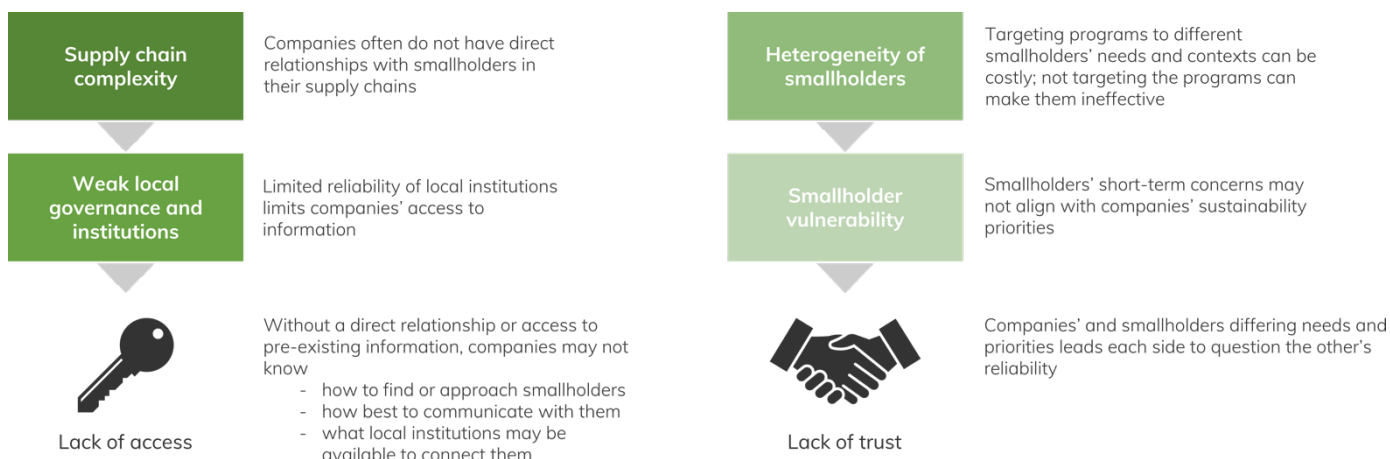
When designing smallholder engagement programs, companies have to overcome specific and systemic barriers. Because of the complexity of their supply chains, it is not easy for companies to reach and influence the behavior of their suppliers and producers. Often, larger companies with deforestation-related commitments buy products through multiple layers of middlemen and processors. Smallholders may also operate illegally in protected areas. In many cases, they have no pre-existing relationship through which to influence smallholders. Where they buy from smallholders, they rarely maintain longer-term structural relationships. An exception are scheme smallholders in the palm oil sector, which have contractual relationships with larger buyers. Engagement often requires overcoming information asymmetries and enhancing trust to successfully offer capacity, technology, or financial support (Figure 4).

For smallholder farmers changing practices is often cost-prohibitive. It requires smallholders to invest capital that they often lack and to adopt agricultural techniques that are often unfamiliar to them. The upfront costs of a transition to sustainable farm management and the opportunity cost of foregoing short-term revenue are often prohibitive for farmers. This is also a barrier for an individual company when implemented at scale. Engagement can also entail financial risks to the company; in many cases, smallholders are not contractually bound to one company, so they may sell parts or all of their yields to other offtakers, even after benefitting from a company's support program. In the absence of farm transition and diversification programs as well as price rewards, it will be difficult to ensure the adoption of sustainable practices in the long-term. A change on the ground would have to go beyond smaller individual programs, and require multiple and larger programs that change practices at scale without bifurcating the market into 'sustainable' vs 'business as usual' operations; effectively only pushing deforestation from one farm into another.¹¹³

Other limiting factors include the lack of land ownership rights; weak government enforcement of protected areas; and lack of access to

extension services and information. Many smallholders which pose a deforestation risk lack legal title or permission to occupy the land that they farm. In the context of poor governance, high levels of corruption, a lack of coordination among government agencies, and little resources to ensure enforcement of laws, it is very difficult to ensure the protection of forests. Smallholder programs that improve productivity and diversify farm income must be matched by investments in law enforcement and good governance – also to avoid a rebound effect that drives further deforestation as farm productivity increases.

Figure 4 Challenges to effective corporate engagement of smallholders to implement zero-deforestation commitments (adapted from Gradl et al. 2012) ¹¹⁴



Any intervention to address deforestation in small-scale production systems has to consider the large heterogeneity of smallholder farmers as well as the diversity of challenges they face.¹¹⁵ While many smallholders in developing countries share similar vulnerabilities, each farm has its own characteristics depending on its land and resources, family circumstances, market access and production system. Not all smallholders are equally land- and resource-constrained. To be effective, companies have to understand the constraints farmers face and invest in long-term relationships with farmers that help to overcome insecurity and doubt among farmers.¹¹⁶ For engagement programs to be effective they have to address multiple challenges in addition to reducing smallholders' impact on forests, such as sustainably improving family income and food security, increasing farmers' resilience and reducing other environmental impacts.

4.3

Implementing zero-deforestation commitments in the palm oil supply chain

Some companies buying palm oil have already begun to engage smallholder producers to achieve their zero-deforestation commitments. This includes actions and programs that directly seek to engage smallholders; i.e. preparatory measures that increase the knowledge base of companies (traceability and forest risk assessments) and implementation of actions that seek to modify smallholder behavior through direct engagement programs.

4.3.1 Supply chain traceability

Given the complexity of the palm oil supply chain, it takes a significant investment of resources to build the knowledge infrastructure necessary to implement full traceability. For companies to know whether their supply of fresh fruit bunches or crude palm oil comes from sources not associated with forest clearance and peat burning, they need to trace it down to the plantation level. This requires full traceability back to their own plantations as well as plantations of their third-party suppliers.¹¹⁷ This is challenging since crude palm oil and fresh fruit bunches are often traded between multiple smallholders and local traders before arriving at the mill.¹¹⁸

Middlemen usually mix fresh fruit bunches from various sources before they are transported to a mill, without recording or registering their transactions.¹¹⁹

This means that companies rarely know from where their suppliers are sourcing. Several large companies report to have achieved '100 percent traceability'. Yet in most cases this refers only to the company's own mills. Data reported are generally estimates and based on self-declarations by companies and their suppliers. This claim also excludes the significant share of a companies' supply that comes from third-party mills, whose traceability cannot always be ensured (Table 5).^j For example, Golden Agri-Resources has achieved 100 percent traceability from all 43 of their own mills back to the plantation level, but they also source from 403 third-party mills, only 50 of which report full traceability to the plantation level.¹²⁰ Similarly, Wilmar reports 100 percent traceability for own mills but only about 15 percent of their 850 third-party supplier mills are traceable to the plantation level.¹²¹

Companies typically take a two-pronged approach to establishing full traceability in their supply chains. For tracking raw materials processed in their own mills, companies work with plantations, growers, middlemen and smallholders and collect information like names, GPS coordinates, palm oil planted area, certification status and volumes sourced.^k For third party mills, companies often first identify and prioritize suppliers based on their respective deforestation risk, before reaching out to engage with them to help them reach their own suppliers and smallholders. However, there is limited information on the nature of this support and engagement. To this end, it is impossible to ensure that sustainable and unsustainable palm oil are not mixed. Ultimately, only the strict identification and segregation of fresh fruit bunches at the source of can reduce potential contamination.¹²²

Another way to achieve traceability goals is using segregated and identity-preserved, certified palm oil under the certification scheme overseen by the Roundtable on Sustainable Palm Oil (RSPO). The RSPO provides certified palm oil through four types of systems— namely, book-and-claim, mass balance, segregated, and identity preserved – only the latter two options include palm oil that is verified through supply-chain traceability mechanisms and derived from certified sources.¹²³ Mass balance and book-and-claim systems (where the proportion of certified product is guaranteed, but each unit is not tracked) can still include untraceable and unsustainable palm oil. Yet, out of over three million smallholders, only about 157,000 are RSPO certified.¹²⁴

^j 63 of 71 companies assessed by ZSL SPOTT (<https://www.spott.org/palm-oil/>) cannot trace any of their raw materials from their supplier to plantation of origin.

^k Based on publicly available information of 10 companies who report 100 percent traceability from their mills (see Table 6).

Table 5 Traceability approaches from companies with 100 percent traceability of fresh fruit bunches from their own mills to plantations in Indonesia and Malaysia (sources: SPOTT and companies' own reporting)

COMPANY	SOURCING MILLS	STRATEGIES TO ENGAGE WITH THIRD-PARTY MILLS FOR TRACEABILITY
Golden Agri Resources Ltd ¹²⁵	43 own mills 403 third-party mills	Identify the number of mills in the supply chain, their names, their addresses and volumes supplied, and engage with them to map their suppliers.
Indofood Agri Resources Ltd ¹²⁶	24 own mills 19 third-party mills	Identify name, parent company, address and location of plantation and supplier mill. Regularly audit suppliers to ensure compliance with the company's Supplier Guidelines.
Olam International Ltd ¹²⁷	13 third-party suppliers who potentially source from 1,100 mills	Collaborate with direct suppliers to improve their traceability to the plantation. Work with World Resources Institute to assess the risk profile of the 1,100 mills which potentially supply to Olam's direct suppliers.
IOI Corporation Bhd ¹²⁸	15 own mills 372 third-party mills	Map third-party supplier mills using location, name and volumes sourced. Review risks using geospatial data, engage with supplier mills to collect data and improve their traceability.
Wilmar International Ltd ¹²⁹	45 own mills 850 third-party mills	Work with third-party suppliers to map the location of smallholders and middlemen.

4.3.2 Forest risk assessments

Most global corporations do not report on their deforestation risks and their impact on forests. For example, only 30 percent of the 1,500 companies asked by CDP to disclose on their forest-risk commodities (timber, palm oil, cattle and soy) in 2018 did so.¹³⁰ And only ten of the 99 palm oil companies assessed by SPOTT in 2019 disclosed the locations of their scheme smallholders,^l with only 26 companies reporting on their scheme smallholder support programs.^m Twenty-one companies published some information about independent smallholders who are part of their support programs.

Palm companies increasingly assess forest risk, but typically do not disclose in-depth information on company forest-risk assessments (Table 6). The overwhelming majority of palm oil companies operating in Indonesia and reporting to CDP (89 of 96) have started to conduct forest-related risk assessments.¹³¹ However, information on the methods used and frequency of assessment remain scarce. More information is provided through the SPOTT database, which scores palm oil, natural rubber and tropical forestry companies annually on over 100 sector-specific indicators regarding the public disclosure of their operations, policies and practices related to key environmental, social and governance issues.¹³²

Out of the 99 palm oil producers, processors and traders analyzed by SPOTT, only 17 report regularly assessing and categorizing the deforestation risk level of all own and third-party supplying mills. However, the approaches used and information disclosed differs considerably. At least four companies, namely Cargill, Goodhope Asia, IOI and Olam reported to collaborate with the World Resource Institute's Global Forest Watch (GFW) platform. Another two companies, namely Bunge and Wilmar, collaborate with Starling, a partnership between Airbus and the Earthworm Foundation. While Starling uses a comparable approach to GFW Pro in assessing deforestation risk, all assessments typically come at higher granularity and frequency.

^l Climate Focus analysis based on SPOTT (2019). Palm oil. ESG policy transparency assessments. <https://www.spott.org/palm-oil/>

^m Climate Focus analysis based on SPOTT (2019). Palm oil.

Mapping independent smallholder suppliers remains difficult since information about their location is scarce and data generation is costly. Large companies often rely on hundreds of thousands of external suppliers to fill the demands of their processing and trading facilities. While monitoring mills are a positive step forward, companies and the palm oil industry will be unable to meet deforestation-free pledges without tracing palm oil purchases to the plantation source. As long as the exact sources of fresh fruit bunches cannot be identified and hence segregated at the mill, a contamination of supply with produce from deforested areas cannot be guaranteed.¹³³ Several of the assessed companies disclose the names and coordinates of both supplying mills and concessions. Third-party smallholder suppliers are much more difficult to identify and map. To this end, tools like the GeoTraceability Platform for Palm Oil, which allow to map commodity suppliers, can help companies to gain visibility on the suppliers delivering fresh fruit bunches to independent palm oil mills, as well as gain insights on the different supply channels.¹³⁴

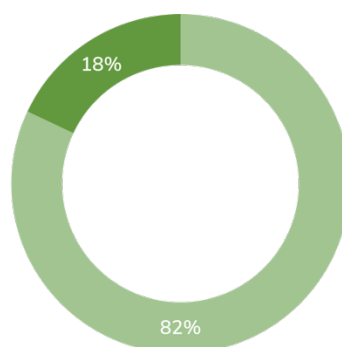
Table 6 A sample of SPOTT-listed palm oil producing or trading companies conducting deforestation risk assessments

SPOTT COMPANY	MAPPING APPROACH	RISK ASSESSMENT APPROACH
Golden Agri Resources Ltd (Producer and exporter)	Concession boundaries and scheme smallholder boundaries are made available to the RSPO, which are declared to represent 100 percent of the company's concession sites. Maps will become available on GeoRSPO.	Golden Agri Resources Ltd has piloted the monitoring of deforestation since 2016 in the Semitau region using satellites, drones and ground verification. Plans to roll out monitoring to all estates from 2017, but no updates are provided. Uses supply chain mapping methods and technology, namely GeoTraceability and Koltiva135.
Cargill Inc. (Trader of oil and kernel)	Submitted concession boundaries to the RSPO and declares these represent 100 percent of its concession sites, but they may not all be available due to ongoing legal issues. Maps will become available on GeoRSPO.	Uses WRI's PALM Risk Tool to assess risk levels of mills, and reports the share of low, medium and high-risk mills on an annual basis. Monitors deforestation of 100 percent of mills near real-time based on WRI's GFW Pro including radar technology, but does not report figures for non-compliant deforestation. ¹³⁶ Mapping of supply chain in high-risk landscapes to the plantation level using a 'risk-calibrated approach', but no further details are provided.
IOI Corporation Bhd (Producer and exporter)	IOI's three-step palm oil verification approach requires that all mills and refineries in the supply chain disclose information such as GPS coordinates and ownership groups.	Monitoring of oil palm plantations and supply chain through WRI's GFW platform. Conducts mill risk reviews by means of remote sensing and geospatial analysis supported by the Earthworm Foundation. Prioritizes high-risk mills for engagement. ¹³⁷
Olam International Ltd (Producer, trader, refiner)	Maps of estates are disclosed. Company does not source from plasma scheme smallholders.	Partnered with Proforest and WRI to assess the risk profile of the 1,100 mills which potentially supply Olam's direct suppliers, based on GFW Pro. ¹³⁸
Wilmar International Ltd (Producer and exporter)	Boundaries of both concessions and scheme smallholders have been made available to the RSPO. Maps will become available on GeoRSPO. The names of over 850 supplying mills in both Indonesia and Malaysia can be found through the company's Supply Chain Map.	Uses the Spatial Monitoring, drones and Reporting Tool (SMART) to monitor HCV areas and to identify threats. Plans to support Earthworm's 'Starling' system to foster deforestation monitoring and expedite ground-truthing in critical landscapes. Company has internal compliance teams to conduct annual internal audits of its own mills, and conducts risk screening of third-party mills through their Aggregator Refinery Transformation (ART) Program. No further details are provided. ¹³⁹

4.3.3 Smallholder engagement

Out of the 69 largest palm oil producers, processors and traders operating in Indonesia and Malaysia, only 39 have programs to engage smallholder producers.ⁿ These programs cover about 18 percent of total palm oil smallholders – mostly scheme smallholders – active in these countries (Figure 5). The level of detail that companies publish about their activities to support smallholders varies but is limited and vague. A look at the smallholder support programs of twelve palm oil companies – based on the size of their operations and availability of information – revealed that all of these companies except one have programs to support both their scheme and independent smallholders (Table 7).

Figure 5 Smallholders covered by company support programs in Indonesia and Malaysia^o



- Smallholders covered by company programs
- Smallholders not covered by company programs

Company support is generally provided in the context of certification and mostly to scheme smallholders. This includes support to improve their farm practices to enable them to achieve certification under standards like the RSPO and national standards (Indonesian Sustainable Palm Oil Standard and Malaysian Sustainable Palm Oil Standard). Scheme smallholders who have supply agreements with a company are organized in cooperatives and typically receive technical and financial support from the company as part of their agreement.¹⁴⁰ This has helped them to perform better in good agricultural practices and in compliance with certification standards compared to independent smallholders.¹⁴¹ It is therefore not surprising that globally more than 356,000 hectares of scheme smallholder plantations are RSPO certified, compared to only about 28,000 hectares of independent smallholder plantations.¹⁴² Most independent smallholders have little knowledge of good agricultural practices and lower productivity compared to scheme smallholders and large plantations; and tend to expand their plantations through conversion of peatland and forests.¹⁴³

RSPO has made efforts to scale certification among independent smallholders - without meaningful impact so far. RSPO adopted certification guidelines and requirements specific to smallholders,¹⁴⁴ and established the Smallholders Support Fund to fund the costs of smallholder certification.^p

ⁿ Climate Focus analysis based on the assessment of 99 palm oil producers, processors and traders by SPOTT. See <https://www.spott.org/palm-oil/>.

^o Sources: (1) Azman et al., 2018; (2) Federal Land Development Authority (FELDA) (3) Statistik Perkebunan Indonesia Komoditas Kelapa Sawit 2016-2018 and ZSL SPOTT palm oil ESG policy transparency assessments 2019. Thirty-nine companies report to cover under their smallholder programs.

^p See Introduction to RSSF at <https://www.rspo.org/smallholders/introduction-rssf>

Despite this, most independent smallholders continue to find it difficult to achieve certification and the number of certified smallholders remain limited; with fewer than 3,400 independent smallholders in Indonesia and Malaysia certified so far.¹⁴⁵ One challenge is maintaining records and documentation of farm practices, which is a requirement under RSPO.¹⁴⁶ Another challenge is the upfront costs and costs of maintaining certification.¹⁴⁷ In addition, independent smallholders often perceive certification schemes as incapable of addressing their key challenges such as the condition of their plantations, yield increase, farm input needs, farm management costs, and plantation distance from mills.¹⁴⁸

Companies are increasingly engaging with independent smallholders, but challenges mean they are yet to reach them in meaningful numbers. Most companies we assessed report some engagement with smallholders, but many do not appear to be engaging deeply and across their full supply chain. Only two of the assessed companies report to support the majority of their independent smallholders. These smallholders are often invisible to authorities and companies given their geographically dispersed locations and reliance on middlemen to access the market.¹⁴⁹ Even when companies map and identify their independent smallholder suppliers, they struggle to effectively work with them because of their lack of organization, unclear land title and unwillingness to cooperate with companies.¹⁵⁰ Lack of support by local governments further impedes company efforts to engage smallholders in remote rural areas.¹⁵¹ In some regions in Indonesia, company efforts are even met with resistance by local governments.¹⁵²

Where companies reach independent smallholders, they try to integrate them into their supply chain. Companies provide capacity building in farm management, training in good agricultural practices, and agricultural inputs.⁹ For example, Asian Agri reports to work with independent smallholders that combined cultivate 41,000 hectares of land in Indonesia with the aim to build long-term partnerships under the company's Corporate Shared Values program.^{153,154} As part of this program, the company informs smallholders about corporate policies and compliance requirements. Further engagement activities include trainings to access financing, and support to obtain land registration documents and certification.¹⁵⁵ However, in the absence of independent verification and reporting of such programs it is difficult to assess their effectiveness and impact.

A small number of companies are implementing innovative financing solutions to help independent smallholders integrate into sustainable supply chains. These are based on collaborative efforts between companies, government, civil society and financial institutions to address smallholder challenges from multiple angles. Examples of such multi-stakeholder programs in Indonesia include:

- The Innovative Financing Scheme of Golden Agri Resources. The government supports smallholders in legalizing their land ownership, and Golden Agri Resources provides them with high-quality inputs, subsidized interest loans, Indonesian Sustainable Palm Oil certification support, and four years of compensation during the production gap resulting from replantation.¹⁵⁶
- Indonesian Palm Oil Development for Smallholders Program of Musim Mas. Musim Mas provides independent smallholders with agronomic training, financial support, and ultimately access to global markets. To this end, Musim Mas has signed a Memorandum

⁹ Based on an analysis of smallholder support programs of 12 palm oil companies operating in Malaysia and Indonesia.

of Understanding with the Bank Negara Indonesia in supporting smallholders and tested different approaches to increase farmers' access to credit. In addition, Musim Mas and International Finance Corporation train members of the local community in providing agronomic skills to smallholders. This allows the local community to take ownership of the program, improving the local standard of agricultural knowledge and multiplying the program's reach while reducing costs.¹⁵⁷

Table 7 Examples of company smallholder support programs

COMPANY NAME	SUPPLY CHAIN SUSTAINABILITY POLICY	OBJECTIVES
Sime Darby Plantation Sdn Bhd	Scheme Smallholder Support Program	<ul style="list-style-type: none"> - build capacity on the Good Agricultural Practices - RSPO, Indonesian Sustainable Palm Oil or Malaysian Sustainable Palm Oil certification - promote community resource management
	Independent Smallholder Support Program	<ul style="list-style-type: none"> - not specified
Golden Agri Resources Ltd	Scheme Smallholder Support Program	<ul style="list-style-type: none"> - build capacity on the Good Agricultural Practices, especially on integrated pest management and fertilizer management - provide plasma smallholders with high-yielding seeds and good quality fertilizers
	Independent Smallholder Support Program	<ul style="list-style-type: none"> - help farmers achieve legality as well as ISPO certification, improve their product marketing skills, enhance their natural environment and key habitat areas (in partnership with Nestlé and Earthworm Foundation) - enable access to financing and help to sustain smallholder's livelihoods during the four years it takes for the new seedlings to mature, and thus encourage more independent smallholders to replant with better quality, higher-yielding seeds
FGV Holdings Bhd	Scheme & Independent Smallholder Support Program	<ul style="list-style-type: none"> - raise productivity - impart knowledge on methods to improve yields, Good Agricultural Practices, Personal Protective Equipment for safety, and bookkeeping for financial management - disseminate Sustainability practices throughout the palm oil value chain to protect biodiversity and the ecosystem
Indofood Agri Resources Ltd	Scheme Smallholder Support Program	<ul style="list-style-type: none"> - obtain ISPO certification - provide affordable seeds and fertilizers - high standards of agronomy and productivity - provide loans and help with financial management
	Independent Smallholder Support Program	<ul style="list-style-type: none"> - obtain RSPO certification - improve access to markets, agricultural practices, and safer labor practices - improve yields
Wilmar International Ltd	Scheme Smallholder Support Program	<ul style="list-style-type: none"> - ensure compliance with company's sustainability policy and certification
	Independent Smallholder Support Program	<ul style="list-style-type: none"> - obtain MSPO and ISPO certification - adopt best management practices, as well as sustainability requirements - identify gaps and deploy resources more effectively - enable access to fertilizer through a subsidized loan structure
Kuala Lumpur Kepong Bhd	Scheme Smallholder Support Program	<ul style="list-style-type: none"> - obtain certification - fund the initial financing of the scheme and manage the Kredit Koperasi Primer Anggota (KKPA) Scheme until the borrowings are repaid
IOI Corporation Bhd	Scheme Smallholder Support Program	<ul style="list-style-type: none"> - obtain MSPO certification - implement best management practices - boost small farmers' productivity - enable transparency and data gathering
	Independent Smallholder Support Program	<ul style="list-style-type: none"> - monitor third-party suppliers to ensure compliance to the company's policy commitments
Musim Mas	Scheme Smallholder Support Program	<ul style="list-style-type: none"> - empower local communities to achieve the necessary technology for sustainable agriculture

	Independent Smallholder Support Program	<ul style="list-style-type: none"> - provide practical support, including bank loan guarantees - provide quality seeds and fertilizers - support independent smallholders in meeting the same efficient farming standards as those adopted by large palm oil organizations - facilitate the local community to take ownership of the program
	Cargill Scheme & Independent Smallholder Support Program	<ul style="list-style-type: none"> - to lead community-based identification, protection and restoration efforts of local HCV and HCS peatlands - obtain RSPO certification - avoid application of herbicides and use palm oil mill by-products, including empty fruit bunches, as natural fertilizer
Astra Agro Lestari Tbk PT	Scheme Smallholder Support Program	<ul style="list-style-type: none"> - obtain ISPO certification - support the implementation of sustainability principles - provide workshops on the company's sustainability policy
	Independent Smallholder Support Program	<ul style="list-style-type: none"> - enable access to market information, technology, and capital to improve productivity, business efficiency, income, and welfare - ease the access to capital loans, guarantee in resource/material provision, guarantee in plantation development standards, guarantee in fresh fruit bunch reception priority and partner smallholder's income - obtain ISPO certification
Asian Agri	Scheme Smallholder Support Program	<ul style="list-style-type: none"> - raise awareness on the company's sustainability policy - train the plasma smallholders to implement sustainability principles in their oil palm plantations - assist smallholders to acquire bank loans and repay these debts - regular meetings among smallholders
	Independent Smallholder Support Program	<ul style="list-style-type: none"> - provide training and support in agronomy best management practices - support to smallholders to form cooperatives - provide smallholders with access to market information - provide financial support to acquire fertilizers and build infrastructure
R.E.A. Holdings plc	Scheme Smallholder Support Program	<ul style="list-style-type: none"> - provide loans to the cooperatives and manage plasma areas in return for a pre-agreed management fee - access to land (through independent smallholder schemes) to cultivate oil palm, provide oil palm seedlings, fertilizers, herbicides and technical assistance
	Independent Smallholder Support Program	<ul style="list-style-type: none"> - provide regular assistance to independent smallholder cooperatives through direct visits to smallholdings to provide training and advice - provide training in best agricultural practices to smallholder cooperatives

Companies also recognize the significance of jurisdictional programs to support smallholder inclusion in sustainable supply chains, and to achieve their zero-deforestation goals. These programs allow interventions to be tested in a specific jurisdiction, and have the potential to be scaled up to the national level. Ideally, under these programs, governments can accelerate progress by providing the needed policies and laws, making finance available, and facilitating effective land titling and registration while palm oil companies and NGOs provide technical assistance, and financial institutions provide funds to incentivize best practices among smallholders to reduce impacts on forests and other natural ecosystems.¹⁵⁸ For example, the jurisdictional approach in Sabah in Malaysia includes specific goals for mapping smallholder farms, improving their capacity and facilitating smallholder land registration (Table 8).¹⁵⁹ As such, many companies see these programs as a potential approach to reduce some of the supply chain complexities and to improve traceability.¹⁶⁰

However, these programs are still in their pilot phases and face significant challenges in their implementation. While there are signs of positive progress in the pilot programs being implemented in Indonesia and Malaysia, agreement across diverse stakeholder groups remains a key challenge as there is still nonalignment between government, companies and NGOs.¹⁶¹ Furthermore, consistent and aligned leadership and coordination among local government authorities is needed. At the moment, local governments depend on national government authorities for guidance and solutions, and hence delaying the implementation of these programs.¹⁶²

There are also concerns whether these programs can all deliver the desired outcomes (including improved conditions for smallholders) and how progress can be monitored and outcomes verified to assure their effective implementation.¹⁶³

Table 8 Examples of jurisdictional programs in palm oil section

PROGRAM	OBJECTIVES AND ACTIVITIES
Jurisdictional Approach to Certification in Seruyan District in Indonesia	The Indonesian Seruyan District is working with several palm oil companies in the district. The companies have signed an agreement with the Government of Seruyan to accelerate the adoption of sustainable farming practices by independent oil palm smallholders in the entire district. It also includes ecological field surveys and spatial modelling is carried for the whole district. By doing so, regulations for flora and fauna conservation can be developed and eventually lead to a district wide environmental protection plan. ¹⁶⁴ Furthermore, a farm mapping including farmer registration is performed in collaboration with INOBU, which also provides input, training and access to credits for smallholders.
Sabah Jurisdictional Approach in Malaysia	The Malaysian province of Sabah has committed to have 100 percent of the palm oil produced in Sabah certified as sustainable by 2025 and to declare 30 percent of Sabah’s land as a protected area. Activities for this jurisdictional approach include mapping of HCV and HCS forest areas, land use change analyses, plan and operationalize Free, Prior and Informed Consent mechanisms, mapping smallholders’ farms and mills, training and capacity building for smallholders and introducing several working groups for monitoring and evaluation. ¹⁶⁵ Those stakeholders are organized under the Jurisdictional Certification Steering Committee (JCSC) that include representatives from government, private sector, civil society and smallholder organizations.

4.4

Implementing zero-deforestation commitments in the cocoa supply chain

Some companies buying cocoa from West Africa have already begun to implement their zero-deforestation commitments. This includes improving the traceability of their supply chains, conducting forest risk assessments to identify where deforestation is likely to occur, and directly engaging with smallholders.

4.4.1 Supply chain traceability

Increasingly, cocoa companies map their suppliers and establish traceability systems to trace cocoa to a specific location. This helps companies ascertain that their suppliers comply with their policies and to determine the nature of issues they need to address in their supply chains. However, even where companies trace cocoa from smallholder farms to the point of purchase (e.g. a cooperative, a licensed buying company), the intermediary could buy from multiple, untraced sources and mix all the cocoa beans.¹⁶⁶ If intermediaries do not have a dedicated traceability system that can document all their sourcing, companies cannot know how much each farmer contributed to the cocoa they buy through this mass-balance system. There is also the risk of ‘cocoa laundering’: a farmer can purchase beans from other smallholders whose farms are established on cleared forest and sell them as their own deforestation-free cocoa.

Members of the Cocoa and Forest Initiative have pledged to achieve 100 percent cocoa traceability to the farm level.¹⁶⁷ The pledge includes mapping of cocoa farms to ensure cocoa is not sourced from protected forests, and to identify deforestation risks in cocoa production areas. In their initial action plans, companies have agreed to map 569,400 cocoa farms in Côte d’Ivoire and 450,300 farms in Ghana.¹⁶⁸

Some upstream companies with a large smallholder supplier base in both Côte d'Ivoire and Ghana have begun mapping their suppliers (Table 9). For example, Cargill, Barry Callebaut and Olam have begun to map all their farmers and collected cocoa farm data, including smallholder agricultural practices, farm size and yield, and distance to local infrastructure. This allows these companies to tailor their interventions to the needs of their farmers. Because many companies do not directly source from smallholders, they work with intermediaries to collect and record smallholder data. Olam's traceability system, for example, is used by cooperatives and licensed buying agents to register, record, and manage farmer transactions when they buy cocoa and dispatch it to Olam warehouses. This information is automatically synched to Olam's inventory systems, allowing them to trace the product.¹⁶⁹

Table 9 Examples of supply chain management approaches; as reported by cocoa companies in their sustainability reports

COMPANY	DEFORESTATION RISK ASSESSMENT, FARM MAPPING AND TRACEABILITY TARGETS	ONGOING ACTIVITIES AND PROGRESS REPORTED	TOOLS USED
Barry Callebaut ¹⁷⁰	<ul style="list-style-type: none"> - establish a harmonized risk assessment approach for all cocoa farms in Côte d'Ivoire and Ghana - achieve 100 % traceability for direct supply chain by the end of 2019 	<ul style="list-style-type: none"> - mapped 47,182 cocoa farms in direct supply chains in Ghana and Côte d'Ivoire within 25 km from a protected area - conducted census interviews with 229,142 cocoa farmers (>75 %), capturing socio-economic and household data 	Satellite imagery combined with farmer census interviews provide key insights into the geographical location, farm size, crops grown, as well as the household composition and income of thousands of cocoa farmers and their farms
Cargill ¹⁷¹	<ul style="list-style-type: none"> - conduct deforestation risk assessments in all direct sourcing areas - achieve 100 % farmer-to-plant traceability 	<ul style="list-style-type: none"> - achieved 100 percent traceability from farm to factory for direct suppliers in Ghana - mapped > 80,000 of the 120,000 farms in the direct supply chain in Côte d'Ivoire - included 57,500 hectares in deforestation risk assessment in Ghana - included 187,749 hectares in deforestation risk assessment in Côte d'Ivoire 	GPS-based farm polygon mapping in combination with satellite imagery platforms like Global Forest Watch Pro provide for deforestation risk maps
Mars ¹⁷²	Achieve 100 % traceability and farm mapping by 2025	<ul style="list-style-type: none"> - 95 % of cocoa is traceable to a country of origin via Mars' Tier 1 direct suppliers. - nearly 40 % of cocoa supply chain can be traced to Tier 2 (farmer group) and 24 % to a Tier 3 (farm level) - GPS-mapped 24 % of global cocoa supply chain to farm level in 2019¹⁷³ 	Used GPS data to map cocoa sources. Publish Tier 1 and Tier 2 suppliers lists and work with them to achieve traceability
Mondelēz International ¹⁷⁴	<ul style="list-style-type: none"> - map all registered Cocoa Life farms to monitor tree cover loss - carry out deforestation risk assessments in all direct sourcing areas by 2022 	<ul style="list-style-type: none"> - mapped 93,416 farms under the Cocoa Life program: 29,627 in Côte d'Ivoire and 39,653 in Ghana - sourced 43 percent of cocoa volume via Cocoa Life 	Satellite imagery solutions like Global Forest Watch to identify potential signs of forest cover loss and risk of deforestation
Nestlé ¹⁷⁵	<ul style="list-style-type: none"> - achieve 100 % traceability to the cocoa farm by 2019; - map all 87,000 farms in Ghana and Côte d'Ivoire; 	<ul style="list-style-type: none"> - Not reported 	A combination of certification, supply chain mapping, satellite imagery, landscape initiatives, and collaboration with direct suppliers

Olam ¹⁷⁶	- map direct and indirect suppliers		
	- achieve 100 % traceability by 2020.	- map all 30,200 supplier farms in Ghana and 117,070 farms across 187 co-operatives in Côte d'Ivoire by 2020	- has achieved 100 percent traceability of its sustainable cocoa supply chain in Ghana and Côte d'Ivoire - mapped 93,303 farmers with 244,165 ha using GPS

GPS-based farm polygon mapping and collection of farm-specific information into the Olam Farmer Information System (OFIS). Based on the platform Global Forest Watch Pro, a Forest Loss Risk Index is developed

Cocoa companies are moving from paper-based to cloud-based supplier mapping and traceability. Direct suppliers, local traders and partner farmer organizations of these companies collect GPS coordinates and household information for each cocoa farm they source from. All this information is centralized in the cloud for companies to use.¹⁷⁷ Companies can combine this information with forest maps to monitor deforestation risks in their sourcing areas. In the downstream supply chain, chocolate manufacturers and retailers map their traders (tier 1 suppliers) and their traders' suppliers (tier 2 suppliers) to know the source of their cocoa supplies and to assess their suppliers against their own policies.

Despite recent advances in farm mapping technologies, companies continue to face challenges. While companies rely on satellite imagery to locate their smallholders' farms in a given area, field-based staff are still needed to physically assess and measure farm boundaries to create accurate maps. This is difficult since cocoa farms are highly fragmented over millions of hectares of land. For example, for Cargill to map all the farms from which they source in Côte d'Ivoire alone, their team of field technicians would have to walk more than 80,000 km of farm boundaries.¹⁷⁸ Unclear smallholder land and tenure documentation, and a lack of clear forest and land use maps add to this challenge. Ongoing policy reforms on land and tree tenure, and efforts to improve forest management and land use planning by Ivorian and Ghanaian governments, will help to address these challenges.

Despite these challenges, leading cocoa companies seem on track to achieve their traceability goals under the CFI, though this will cover a limited number of smallholders. They have mapped significant parcels of smallholder farms in their supply chains in Ghana and Côte d'Ivoire that can help them trace their supplies and identify deforestation-risks. However, if the loopholes that exist in the current traceability systems are not addressed, traceability claims may not always be robust.

4.4.2 Forest risk assessments

CFI companies have committed to carrying out deforestation risk assessments throughout their sourcing areas, and to working towards greater alignment of methodologies in 2019.¹⁷⁹ More specifically, since January 2018, companies are conducting farm mapping within their direct supply chain to identify and collect cocoa farm boundary data to ensure cocoa is not being sourced from forest lands, national parks, reserves, or classified forests. However, the interpretation of collected data can be complex and time consuming. To this end, there is a clear need for simple and cost-effective tools for companies to assess their own risk of exposure and to increase their capacity to meet sustainability targets. Olam's Forest Loss Risk Index, for example, involves the GPS mapping of its cocoa supplier network that spans across 650,000 suppliers; a time-consuming and complex data collection process. Olam's farm mapping data is combined with historic deforestation rates, existing forest cover, and

national park boundaries. As a result, Olam can highlight deforestation risk hotspots and assign an individual risk weighting to each supplier.¹⁸⁰

Risk assessments inform sourcing decisions and compliance systems. Based on the mapping of all farms at risk of sourcing from protected forest areas, companies can stop any purchases from farms that are located within a protected area boundary. Moreover, collected farm data do not only include information on farm location, but also on farm size, soil quality, and productivity, all of which providing the purchasing company with the ability to design tailor-made Farm Business Plans and trainings on good agricultural practices.¹⁸¹ For example, Nestlé underlines that farm mapping and risk assessments are an essential component not only of the traceability system the company wants to set up, but also for its compliance with anti-deforestation legislation in both Ghana and Côte d'Ivoire.¹⁸² Risk assessments and associated supplier maps can also be useful for retailers such as Marks & Spencer and other members of the Retailer Cocoa Collaboration (RCC) in holding trading partners accountable to their CFI commitments.^f

Cocoa companies continue to improve their reporting and disclosure on their progress against their sustainability goals but more needs to be done. Many companies now report information like the list of their suppliers, their sourcing regions and locations of their smallholders. They also report their progress in mapping suppliers and in achieving traceability. However, reporting is based on communicating successes only, but not on lessons learned.¹⁸³

4.4.3 Smallholder engagement

In the cocoa sector, company policies and programs for smallholder support are largely shaped by industry-wide sustainability efforts. These include the Cocoa Livelihoods Program, Cocoa Action, and most recently the CFI. These function as voluntary umbrella initiatives setting sector-wide sustainability goals (Box 3). These initiatives are developed and managed through the World Cocoa Foundation, a trade organization representing more than one hundred companies.

Seven companies, namely Barry Callebaut, Olam, Cargill, Mondelēz, Hershey, Mars, and Nestlé, are involved in all these initiatives in Côte d'Ivoire and Ghana. Each company has their own individual program to support smallholders, guided by engagement targets within their overall sustainability strategies for traceability, certification and zero-deforestation production (0).

^f Marks & Spencer was one of the founding members of the RCC. Marks & Spencer (2019). Marks & Spencer Cocoa and Forests Action Plan. <https://corporate.marksandspencer.com/documents/plan-a-our-approach/marks-and-spencer-cocoa-and-forests-action-plan-march-2019.pdf>

Table 10). Smallholder programs cover technical, institutional, financial, and technological aspects but may differ in project targets, timelines, and implementation mechanisms.

Box 3 Sector-wide cocoa sustainability initiatives

The Cocoa Livelihoods Program (CLP) was first established as CLP I, which ran from 2009 – 2014. CLP II ran from 2014 – 2019 and focused on cocoa productivity and farm resilience as it related to food security. With over USD 70 million in funding and the participation of 15 companies, the CLP I promoted a ‘package of training’ through Farmer Field Schools on: good agricultural and farm management practices, provision of inputs, and increasing access to improved planting materials. The CLP II was implemented through a matching grant mechanism to 10 World Cocoa Foundation member companies, who worked with government agencies, non-governmental organizations, civil society, and donor organizations on their programming.

CocoaAction started in 2014 to align the industry on issues related to low cocoa productivity and community development, particularly towards education and child labor monitoring. This included a joint industry-wide strategy to confront pests and disease, environmental concerns, market challenges, access to education, child protection, and gender equality. These were implemented through the provision of a ‘productivity package’ and a ‘community package’. The strategy also included a microcredit component to help farmers receive crop protection and inorganic fertilizers.

The 2017 **Cocoa and Forests Initiative (CFI)** is a joint public-private partnership between industry and the governments of Côte d’Ivoire and Ghana to collaborate in establishing zero-deforestation supply chains. The CFI focuses on forest protection and restoration, sustainable production and farmer’s livelihoods, and community engagement and social inclusion. The CFI aims to end sourcing from protected areas and national parks, and to move towards zero-deforestation supply chains. Unlike CLP and CocoaAction, there is not a recommended ‘package’ of tools under the program, and member companies are free to pursue implementation strategies as they see fit.

Producers working on the ground with farming communities can directly implement their farmer support programs, while processors and retail companies, such as public-facing chocolate brands, must rely on their suppliers to achieve their supply chain targets. Barry Callebaut, Olam, Cargill, and Mondelēz, located upstream in the supply chain, have on-the-ground programs to support cocoa farmers or farmer groups. These include the Cocoa Horizons program (Barry Callebaut), The Cocoa Compass Strategy (Olam), Cocoa Promise (Cargill) and Cocoa Life (Mondelēz). In general, they either work directly with farmers, channel their support through farmer organizations such as cooperatives, or conduct program activities via other value chain or implementation partners such as NGOs or governmental agencies. Downstream, consumer-facing companies like Hershey, Mars, and Nestlé tend to rely on their supply chain partners or third-party certification of their supply chains to meet their overarching sustainability policy goals. For example, Mars made public a list of their Tier-1 global cocoa suppliers on whom they rely to implement their strategy, which includes Cargill, Olam, and Barry Callebaut.¹⁸⁴ The smallholder engagement strategies of these upstream and downstream companies are outlined Table 10.

Table 10 Upstream and downstream company smallholder engagement strategies in the cocoa sector

PROGRAM	OBJECTIVES	DELIVERY STRATEGY	STATUS
Upstream			
Olam's Cocoa Compass	By 2030, ensure the 150,000 farmers supplying Olam have achieved a living income and reduced natural capital costs (water, carbon) by 30 %, among others	<ul style="list-style-type: none"> - training of farmers in Good Agricultural Practices (GAPs), Good Labor Practices, Integrated Pest Management, and Business Capacity Training - issue farm development plans - provide seedlings, shade trees, fertilizer, personal protective equipment, solar dryers - raise awareness on forest protection - support to get land tenure - provide interest free loans and microfinance - provide premium payments - provide short, medium, and long-term financing 	Data on progress are not yet available. The Compass builds on Olam's existing sustainability programs such as the Olam Livelihood Charter. The following targets have already been achieved: <ul style="list-style-type: none"> - 100 % traceability in Côte d'Ivoire and Ghana - USD 136 million paid in sustainability premiums to farmers and farming cooperatives in partnership with customers - over 64,000 tailored Farm Development Plans have been issued - child labor monitoring and remediation systems cover 95,000 cocoa farmers in Côte d'Ivoire and Ghana
Cargill's Cocoa Promise	<ul style="list-style-type: none"> - one million farmers benefit from services and premiums delivered under the program - full traceability - zero deforestation - > 200,000 farmers trained 	<ul style="list-style-type: none"> - mapping farmers via GPS - farmer coaching for development plans, fertilizer application training, pest/disease management, financial management, seedling distribution - establishment of Village Savings and Loans Associations - child labor prevention through financial training and education to farmers and their communities - digital payments through mobile banking - Cooperative Management System to centralize inventory information, payment flows and financial operations - help professionalize farmer organizations - creation of market groups to connect farmers directly with actors in the supply chain - provide partner cooperatives in Côte d'Ivoire with commercial loans for trucks 	<p>It is not clear how the programs targeted for West Africa have compared to other regions, or what portion of farmers are covered under the high-level targets in the Cocoa Promise.</p> <p>There are no data on progress of the cocoa-specific commitment of having >200,000 farmers trained.</p>
Mondelēz's Cocoa Life program	By 2025, source 100% of chocolate through Cocoa Life and by 2022, reach 200,000 farmers and one million community members	<ul style="list-style-type: none"> - seedling distribution - coaching/ training on farm development plan on good agricultural practices - financial literacy and business management training - additional income generating activities 	<ul style="list-style-type: none"> - reached 43 percent (of the goal of 100 percent of chocolate sourced through Cocoa Life by 2025) - reached 40,769 farmers in 676 communities in Côte d'Ivoire; and 38,417 farmers in 447 communities in Ghana
Downstream			
Hershey's Cocoa for Good	50,518 farmers directly supported	<ul style="list-style-type: none"> - certification - farm mapping - invest in alternative means of generating income, such as spices, vegetable farming and snail rearing. 	No publicly available information
Mars	180,000 farmers have certification	<ul style="list-style-type: none"> - certification 	No publicly available information
Nestlé's Cocoa plan	114,000 farmers covered	<ul style="list-style-type: none"> - best practices training with video follow-ups by lead farmers (but in pilot stage) - financial training through farmer business school with Cococonnect 	No publicly available information

Companies offer packages of interventions and services to smallholders and smallholder groups to secure supplies of cocoa beans that meet their standards and policy requirements. These interventions include organizing farmers into groups, and providing training, credit, and farm inputs (e.g. fertilizers, agrochemicals, cocoa seedlings, equipment). Services may be offered either as a predetermined package of support or through a menu of available services to select farmers.¹⁸⁵ For example, under Olam's One Farmer, One Acre program in Ghana, cocoa communities get access to local 'pruning teams' who provide a one-acre pruning demonstration on farms to improve farmers' pruning skills.¹⁸⁶ This direct coaching replaces farmer group training sessions. Similarly, under Barry Callebaut's Cocoa Horizon program, farmers who sign a contract with the program via a farmer group receive two to three years of training that result in farmers developing a Farmer Business Plan. The plan covers cocoa farm rehabilitation, maintenance, soil management, integrated pest and disease management, biodiversity enhancement, and waste management aspects of farming.

Companies also differ in their approach to local communities, farmer groups and organizations. Companies work with local cooperatives and other farmer organizations and may choose to enhance their capacities through conducting trainings-of-trainers and lead farmers who will then provide training to smallholder farmers. The content of these trainings varies and may include good agricultural, environmental and social practices. In Ghana, companies carry out the majority of farmer extension through Ghana Cocobod extension agents and the service package they provide. Working with farmer groups can provide more sustainable access to a supply of cocoa beans in exchange for access to farm inputs and technical and financial resources. Barry Callebaut's Cocoa Horizons program relies on farmer groups that sign a commercial contract with agreed upon volume and premium.¹⁸⁷ Cargill operates a Coop Academy, a professional cooperative educational service that targets cooperative leaders in Côte d'Ivoire and Cameroon. Mondelez's implementation and programming for technical resources are focused around Community Action Plans that defines the priority areas for action and are the main implementation and delivery mechanism to channel Cocoa Life resources.

Several financial support mechanisms have been tested and implemented by companies to increase farmer income and reduce poverty, but without clear impact. These include village-level saving pots, access to micro-finance and Payment for Environmental Services. Companies also provide smallholders with trainings on financial literacy, business planning and management to help them better manage their farms and to diversify their incomes. However, it is not clear how helpful support programs have been in improving smallholder living conditions and removing pressure from forests.¹⁸⁸ Support programs often link production-related targets, such as higher farm productivity, to broader sustainability goals. Increased productivity may be linked to livelihood goals such as providing farmers a living income (e.g. by Olam), lifting farmers out of poverty (e.g. by Barry Callebaut), supporting sustainable cocoa businesses for farmers (e.g. by Mondelez) or farmer livelihoods and resilience (e.g. by Cargill).

5. Progress and challenges

5.1 Companies embrace collaborative and multi-stakeholder action

Despite the ambition of multi-stakeholder initiatives to align company action, it remains difficult to assess both the effectiveness of individual company programs and the overall impact on smallholders in the sector or in a particular region. This is particularly true for the cocoa sector, where companies pursue a variety of different approaches, use different indicators, and differ in the frequency (or existence) of progress reporting. For example, Nestlé's Cocoa Plan does not fully define its goals per region and does not release an annual report on progress towards reaching program goals. Companies also adopt a diversity of approaches and methods for implementing their programs, complicating efforts to draw comparisons in outcomes. More fundamentally, there is a lack of clarity on the overall scale and scope of the issues addressed by company programs as well as the extent to which these issues impact a company's supply chain. Overall, it is not possible to assess the direct impact of company efforts to eliminate deforestation driven by smallholders from their supply chains.

The implementation of zero-deforestation commitments requires attention, finance, and long-term commitment from companies. The complexity of the palm and cocoa supply chains make implementation of commitments costly and challenging. In many cases, companies with zero-deforestation commitments procure produce through layers of middlemen and processors. Even where companies buy directly from smallholders, the transactions are often one-off purchases rather than embedded in longer contractual relationships. Smallholders are also vulnerable to price and climate shocks and often lack access to training, technology, or finance. Most cocoa and many oil palm smallholders operate at or below the poverty line.

Companies strongly support multi-stakeholder initiatives that define a common framework to implement their zero-deforestation commitments, including the RSPO in palm oil and the CFI in cocoa. Initiatives that define rules for engagement help to organize and target company efforts. They often define the range of tools that companies should employ to reach their zero-deforestation commitment targets, including farm and supply chain mapping, traceability, and the design of smallholder support programs. In doing so, multi-stakeholder initiatives codify a certain theory of change through which company action, and specifically smallholder engagement, will lead to a reduction in, and ultimately an end to, deforestation driven by palm oil and cocoa production. The different theories of changes have distinct advantages and disadvantages. Where the initiatives are very prescriptive and define one common set of rules, like

in palm oil certification, they help to ensure that progress is measurable and comparable within and across companies. However, these rules can also become limiting, in particular where they exclude groups of smallholders, such as independent smallholders in the palm oil sector. In comparison, CFI is more flexible in its approach – at the expense of comparability across company programs and transparency on costs and benefits.

Pre-competitive collaboration at the level of a production landscape may be the only way to achieve consistent impact at scale.

Collaboration among companies, as in the CFI, can overcome engagement challenges where supply bases are shared and supply chains inherently unstable, as is often the case where companies source from independent smallholders. In addition, local partnerships with NGOs and multi-stakeholder jurisdictional approaches in coordination with local governments, can make sure that the synergistic knowledge of different implementation partners is used to overcome the knowledge and capacity constraints of each individual partner.

The large majority of companies with zero-deforestation commitments in the palm oil sector relies on third party certification to identify commitment-compliant commodity supply. RSPO and other certification standards require producers to comply with specific production criteria. While RSPO certification leads to a reduction in deforestation in certified farms, it is difficult to include smallholders – in particular independent smallholders – into certification systems. Those few smallholders who do become certified were often unlikely to cause further deforestation even before they became certified. Certification rarely happens at the forest frontier, concentrating instead in areas with no or very low deforestation.¹⁸⁹

5.2

Progress in tracing direct suppliers and identifying deforestation risks

There is noticeable progress in supply chain mapping companies in both the palm oil and cocoa supply chains. The identification of supplying mills and farms is a necessary condition for identifying deforestation risks and traceability. To assess potential deforestation risks within the supply base, companies increasingly conduct forest-risk assessments and monitor areas where the deforestation risk is high. Satellite-based tools exist that can help companies detect changes in forest cover within its supply base, project different risk levels, and prioritize high-risk areas for engagement with suppliers and producers.

While companies work towards transparency in their sourcing areas, they still fail to anticipate future risks and emerging forest frontiers, i.e. where operations could move to, and struggle to operate at the landscape level. Farmers that are not in any companies' supply base may deforest and not show up on the company radar before trees bear fruit – after forests on their plot of land have long been cleared.

In palm oil, many companies still use mass-balance and book-and-claim certification, which does not guarantee separation of sustainable and unsustainable palm oil in the supply chain. While companies are working to establish their own traceability and verification systems to track all their supplies down to the farm-level, they still largely depend on RSPO certification and in most cases have mapped only direct suppliers and scheme smallholders. Mapping direct supplier means only a part of the supply base is actually traceable. That being said, companies are

increasingly working with others within their supply chains including plantations, growers, middlemen and smallholders, and collect information like names, GPS coordinates, palm oil planted area, certification status, and volume sourced.¹⁹ Companies also work with their supplying mills to identify and prioritize third-party suppliers based on their deforestation-risk, and engage with them to help them reach their own suppliers and smallholders.

However, individual lines of supply in palm and cocoa are often very difficult to map and monitor, and a ‘deforestation-free’ supply is very difficult to guarantee.¹⁹⁰ An increasing number of companies in palm and cocoa claim 100 percent traceability in their supply chains, but this typically refers only to company-owned mills and corporate scheme smallholders in palm oil, and direct sourcing from smallholders in cocoa. In palm oil, the situation is more difficult when it comes to third-party supplying mills and independent smallholders who are not bound by contracts to an off-taker or a mill. While these smallholders may supply directly to mills, they more often than not supply to intermediaries due to limited accessibility or high transaction costs. As mills compete for fresh fruit bunch supply, and intermediaries compete to increase their market share and to maintain the loyalty of suppliers, they are often unwilling to disclose their sources and business relations.¹⁹¹ In the cocoa supply chain, traceability is complicated through informal local and larger aggregating traders that mix cocoa from different sources and supply warehouses from which companies buy cocoa.¹⁹² In Côte d’Ivoire, for example, company sustainability programs and certification programs only account for 60 percent of the cocoa sourced.¹⁹³ The remainder is indirect purchasing through middlemen with unsure provenance.

5.3

Systemic barriers challenge smallholder engagement

Successfully engaging high-risk producers remains difficult. The challenges that come with changing smallholder practices makes the standardization of implementation approaches difficult. As local circumstances vary from case to case, each region and community requires special attention and solutions, which makes the implementation of zero-deforestation commitments cumbersome and costly. Supplier and procurement standards are often adequate tools to eliminate deforestation from a company’s supply chain when that company works with large producers. The onus of implementation is thereby passed on to the suppliers. This is not possible when the producers are hundreds of thousands of poor farmers. Some company programs seek to involve independent smallholders, but these interventions remain limited in scale and scope.

Smallholder engagement can only be sustainable if farmers are lifted out of systemic poverty. In order to meet sustainability goals, producer support programs have to be designed to achieve a number of related and complementary objectives, including increasing productivity, reducing risks and improving livelihoods at the household level.¹⁹⁴ They also have to be developed in response to farmers’ needs and in a participatory manner, and be tailored to farmers’ situations, interests, and concerns to increase the perceived economic gains from changing practices. The better a company’s knowledge of its own supply chain and its local context – including the

¹⁹ Based on publicly available information of 10 companies who report 100 percent traceability from their mills (see Table 6).

identity, characteristics, and constraints of its suppliers and producers – the more targeted and effective the smallholder engagement programs are.

Companies largely rely on smallholder outreach and inclusion to manage deforestation risks; exclusion of individual smallholders by direct buyer companies is very rare. While companies often exclude larger non-compliant suppliers from their supply chains – whether through a suspend-then-engage or an engage-then-suspend approach – they do not usually use the same tactic on individual smallholders. When smallholders do not comply with agreed rules, companies rely on training and engagement. Exclusion without prior or subsequent direct engagement – with all its complications – would lead to disrupted livelihoods for smallholders. This outcome would violate companies' further commitment to ensure inclusion and benefits for smallholder and local communities within their supply base. Exclusion would also further bifurcate markets into 'sustainable' vs. 'unsustainable' streams – where, in effect, uncertified smallholders are excluded on a macro scale. On a more practical note, most smallholders are too many steps removed from the company to be identified and targeted for individual exclusion. Also, it is important to note that in the cocoa smallholder context, there are no commonly agreed spatial and temporal thresholds of forest conversion to implement engage-suspend-exclude principles.

While smallholder engagement programs offer inputs, training and finance, they are often unable to overcome smallholder-specific transition barriers. In both palm oil and cocoa sectors, companies usually offer smallholders packages of services that build their technical and financial capacities to move to sustainable practices. Understandably, these programs have often been designed with the narrow commercial interests of the funding company in mind, namely the interest in securing supply of a specific commodity through targeted technical assistance. It has increasingly become clear, however, that other smallholder constraints like lack of tenure, organization and diversified income need to be addressed for technical access to inputs and trainings to be effective and to yield a supply base that is secure in the long-term. To overcome this short-term bias in technical support programs, companies are increasingly engaging in jurisdictional approaches, cooperating with governments and civil society to address smallholder challenges from multiple angles. However, progress has been limited and these programs face significant challenges in successfully establishing long-term partnerships, including the changing political agenda of the national governments, competing interests of companies, non-governmental organizations, and the government; and the ensuing lack of trust between these entities.¹⁹⁵ While these solutions are promising, it is too early to assess their impact.

Several external factors impact the effectiveness of industry-wide sustainability initiatives, with supportive public policies and law enforcement being a precondition for effective company action.

Systemic issues, such as insecure tenure, may reduce a farmer's willingness to make long-term investments in their farms. More generally, many barriers to achieving supply chain sustainability targets may be related to long-entrenched issues with social, political, and historical contexts at the local, national, and international levels. Jurisdictional and landscape approaches to confront deforestation and other sustainability issues seek to address these broader systemic contextual factors. The success of these efforts also depends on the historic relationship of key stakeholders, the socio-political and economic context in which supply chains are embedded, the level of trust between actors and the individual

motivations of stakeholders. Generally, jurisdictional action works best where local and regional governments are strong and are able to orchestrate efforts.

Farmer organization is essential to improve resilience and sustainability of smallholders. Organization of smallholders in cooperatives in both palm and cocoa remains low. Where they exist, cooperatives play an important role in provision of extension services to smallholder farmers, and they provide an entry point for corporations that may choose to target their sustainability activities at cooperatives in order to reach a broader range of smallholders. However, cooperatives that export cocoa beans on their own to the international market have also found success and could be much more sustainable in the long-term. In both cocoa and palm oil sectors, organization of farmers in cooperatives is a precondition to receive certification. More crucially, though, cooperative members enter into communities of mutual support, are more able to express their agency through the cooperative's negotiating powers, gain access to finance, reduce transaction costs, and finally, can directly benefit from company sustainability programs. However, establishing cooperatives is challenging and needs to be supported by local organizations; companies can respect and strengthen those efforts, but they cannot lead them.

To capitalize on the benefits of organization, actual and systemic barriers to participation need to be overcome. Cooperatives need to be present, active and open for participation. In the context of a regulated cocoa sector price negotiations need to be liberalized to award farmers the benefits of price negotiation.¹⁹⁶ Currently, land ownership can be a precondition for membership to official farmer organizations and for participation in training activities and is also necessary to apply for credit and for crop diversification.¹⁹⁷

5.4

Engaging smallholders at scale remains rare

Company programs remain small in number and limited in scope. Support programs are often designed to yield very specific outcomes, such as achieving certification, which limits their net impact on reducing deforestation across a landscape. At the same time, capacity building and training programs tend to be complex, with high transaction costs when implemented directly by companies. These dual factors contribute to a limited desire or capacity to scale these efforts. Defining a scalable approach towards implementation of zero-deforestation commitments requires case-specific smallholder engagement, which is difficult or impossible to standardize and implement centrally. This also requires a decentralization of many management decision to allow for the design and implementation of tailored interventions. When implemented in concert with local partners, the costs of customization and scaling these programs can be reduced.

The mainstreaming of smallholder support programs is necessary to initiate a long-term transformation of smallholder practices. The current patchwork of engagement programs that provide training, access to technology and credit is failing to cover smallholders at scale. Companies should adopt smallholder support and engagement programs across the entire scope of their operations. In the palm oil sector, this means an offering to non-scheme smallholders needs to be formulated, including intensified efforts to reach out to third-parties that deliver to company mills.

In the cocoa sector, programs need to support diversification of the farming system in a coordinated way to ensure that the whole sourcing area is covered by effective programs. The CFI can play an important role in harmonizing and coordinating efforts.

Companies work in silos, and efforts are often duplicated, reducing the potential of these interventions to achieve impact at scale. For example, in the cocoa sector, the exact number of farmers that receive support under company programs is unclear. An individual farmer can be part of multiple programs and receive support from the government, which makes it difficult to aggregate individual programs reported 'successes' into a sector-wide picture of progress. Most companies do not publish or report on the number of farmers in their direct versus indirect supply numbers, making it difficult to assess the total percentage of farmers receiving these services in a supply chain. For example, progress towards Olam's goal to enable 150,000 farmers in their supplier base to achieve a living income or Mondelez's goal to support 200,000 farmers cannot be assessed without knowing the total number of farmers that they supply from. Others, like Cargill, provide only global numbers for their targets, which further complicated and obscures their efforts in any individual region.

Across all smallholder systems, the financial support for sustainable production is key. This is particularly true for cocoa in West Africa, where such premiums are even more essential than in palm oil. Whether such financial support comes as a price premium, direct farm support or subsidized credit – or a combination of these instruments – needs to be assessed in the national and regional context. As a necessary, but not sufficient step, companies need to fully commit to paying the newly implemented Living Income Differential which is a fixed premium of \$400 per tonne for all cocoa sourced from the region for the 2020/2021 season and ensure that farmers are receiving the full pay. Additionally, this requires paying premiums for sustainable cocoa and ensuring that the premiums are sufficient and effective in reaching and empowering farmers. Increased income needs to be paired with active efforts to protect and restore forests to avoid the rebound effect of restoration, i.e. encouraging land expansion through increased profitability. In Ghana, there should be additional clarity surrounding climate-smart cocoa production practices in the forthcoming Climate-Smart Cocoa Standard, as well as a regional climate smart cocoa standard that will apply to both Ghana and Côte d'Ivoire. These will help to define and clarify the types of support that companies should be implementing as well as defining how sustainable cocoa could be financially rewarded.

In palm oil, the number of farmers that is included in engagement programs is less ambiguous, but very limited compared to the overall number of smallholders. Only about 18 percent of all farmers are included in engagement programs. Linking smallholder engagement to RSPO certification and the lack of investment in independent smallholders means that only scheme smallholders of the highest performing companies are reached under these support programs. Independent smallholders remain largely outside of these programs. Because of the dispersed locations of these farmers and their lack of land documentation, their informal contractual arrangements with their buyers and a lack of record keeping, companies struggle to engage them. This is further exacerbated by smallholders' lack of willingness to work with companies for fear of diminished marketing opportunities, and a lack of sufficient and effective support by government to enable companies and non-governmental organizations to reach these farmers.

Palm oil companies need to go beyond certification to ensure successful inclusion of smallholders in sustainable supply chains. So far, certification remains the main strategy but given that RSPO has struggled to scale among smallholders and its impact on deforestation remains unclear, other strategies need to be developed. More bottom-up programs designed and implemented at the local level are necessary to transform production practices. Top-down approaches to engage smallholders for compliance with sustainability standards does contribute to – but not deliver – the needed change. More direct approaches, including collaborative projects with local government and nongovernment organizations, are needed to reach to smallholders while spreading the costs to more stakeholders. Some companies are testing such approaches, but others need to follow.

5.5

The political economy of the sector matters

National and local buy-in is essential; programs driven by foreign actors alone are likely to fail. This is particularly relevant for the cocoa sector where current sector-wide cocoa programs are partial to foreign interests. CFI, like previous efforts to improve the social and environmental performance of the cocoa sector, has been initiated and is driven mostly by foreign actors.¹⁹⁸ This begs the question how responsive possible engagement can be to smallholders, and there are concerns that the CFI may not generate the impact that is intended. Unlike many previous initiatives, though, CFI has been initiated with the buy-in and cooperation of the governments of the nations where it is being enacted. The question remains whether the ‘foreign interests’ who largely initiate sector-wide sustainability efforts will match their commitments with the funding needed to implement them.

To confront volatile price fluctuations for cocoa in international markets, the governments of Côte d’Ivoire and Ghana have sought to implement supply-side policies to provide more stability. Government interventions often suppress incentives to invest in improved cocoa practices. For example, following an oversupply of cocoa in the 2016/2017 season, the government of Côte d’Ivoire – in an effort to keep prices stable and cocoa supply low – took measures to reduce supply, including by banning the distribution of high-yielding seedlings.¹⁹⁹ This ban is still in place as of the end of 2019 and compromises the effectiveness of productivity-enhancing strategies such as distributing improved seedlings. Similarly, the Ghanaian Cocobod ended a program that distributed free fertilizers and pesticides to farmers.²⁰⁰ The cocoa stock has also been subject to the spread of Cocoa Swollen Shoot Virus, which can significantly reduce the productivity of a hectare if a plot becomes infected.²⁰¹

5.6

Government support and engagement is key

Companies alone cannot solve the many challenges facing smallholders, making government engagement and support indispensable. Improving productivity of farmers, ensuring legal land tenure, building strong rural communities, and providing proper rights and benefits to farmers fall under the responsibilities of national, regional, local and customary governments in producer countries. Deforestation cannot be

addressed in isolation from these underlying social and economic issues. Private sector interventions to address deforestation can only work if effective regulations and law enforcement by accountable government is present.²⁰²

Contextual factors relate to the regulatory, financial, and political environment within a given producer country. Public policies synergistic with corporate deforestation policies can increase the likelihood that a company will meet its own deforestation-related targets. Moreover, governments can play a critical role in providing incentives for the adoption of sustainable commodity production practices, and encourage industry self-regulation through the threat of stronger regulations.²⁰³ They can endorse and reinforce private sector standards, create or maintain key infrastructure such as for information sharing or law enforcement, and implement safeguards to prevent potentially perverse effects of implementing sustainability standards on small producers.²⁰⁴ Public policies that change unpredictably, or that are inconsistent across agencies or levels of governance, can in turn, negatively affect the ability of a company to successfully implement its commitments.²⁰⁵ Even good policies may be poorly implemented where the political will by relevant authorities is lacking.

Governments are essential in supporting companies in providing incentives and thereby strengthening the business-case for deforestation-free products. In addition to price premiums, governments could help support smallholders cover compliance costs, for instance through subsidies or favorable financing terms.²⁰⁶ If a government provides additional disincentives for deforestation, such as financial penalties, or credit restrictions for non-compliant companies or individuals, government actions can have synergistic effects with the policies of private companies.²⁰⁷ In turn, through policies that are openly contradictory to zero-deforestation commitments – such as the requirement for land leases to be developed via land clearing – governments can also create conflicts for the implementation of corporate sustainability initiatives.²⁰⁸

Governments also play a critical role in helping companies achieve full traceability. Governments can map independent smallholders and their plantations and enforce regulation on record keeping along the supply chain, including middlemen and local agents. Indonesia already has a regulation in place for smallholders to register their plantation(s); however independent smallholder lands remain largely unregistered due to substantial cost barriers. Regardless, plantation registration alone cannot ensure traceability. Incentives like premium prices, better access to inputs and finance for smallholders beyond certification schemes can encourage traceability.²⁰⁹

A lack of documented property boundaries constrains efforts by companies to limit deforestation in their supply chains due to difficulty in linking specific suppliers to land use practices. To this end, governments play a crucial role in resolving tenure issues, for instance through simplifying procedures, recognizing customary rights, and reducing the costs for smallholders to obtain land titles. Since land tenure reforms could also spur deforestation by sparking greater investments in agriculture or fuelling land competition, the clarification of land property rights could also include the recognition of local and customary systems of land and resource tenure where appropriate. This in turn could substantially facilitate the implementation of zero-deforestation commitments.²¹⁰

In the end, governments need to invest into sustainable landscapes.

Individual company support that is limited to those smallholders that supply a company's fresh fruit bunches and cocoa beans is unlikely to achieve transformative change. Pre-competitive collaboration at the level of a production landscape may be the only way to achieve consistent impact at scale where supply bases are shared and supply chains inherently unstable, as is often the case where companies source from independent smallholders. Governments – together with local communities, corporations, non-governmental organizations and other local stakeholders – have to develop long-term rural development plans that address social and environmental challenges.

6. Recommendations for companies

Companies should consider taking the actions outlined below to increase the effectiveness of their smallholder engagement.

6.1 Carry out continuous risk assessments, and use these to adapt mitigation strategies

Companies need to monitor deforestation in their sourcing regions regularly. This is necessary to fully understand the scale and magnitude of the risks in relation to company actions to strategize their supplier engagement interventions. Transparency around company interventions to engage smallholders and more generally on company operations, policies, activities, risks, performance, impacts and other relevant information further allows customers, investors and other stakeholders to track progress and reward companies that are achieving their goals. It also allows peer-to-peer learning within the supply chain and landscape and beyond.

Companies may also consider including deforestation in their enterprise risk assessments and should carefully consider not just reputation, but also operational and regulatory risk.

Carrying out risk assessments requires that:

- Palm oil companies work with supplier mills and middlemen in the supply chain to identify and map all direct and indirect suppliers and build full traceability back to the plantation level.
- Cocoa companies work with farmer organizations and cooperatives at the community level to map all smallholder producers and build full traceability to the farm level.

It is also important to engage suppliers and middlemen into mapping and tracing efforts. One option to facilitate supplier engagement is to include environmental and social risks assessments and smallholder engagement criteria in purchase agreements to ensure all companies in the downstream supply chain have clear policies to work with smallholder suppliers.

6.2 Tailor support programs to smallholders' local needs

Smallholder interventions tend to be more successful if they are based on a clear understanding of the local context, consider smallholder needs and constraints and follow clear theories of change for action.

Building trust and dialogue with smallholders and local communities is essential and entails clear communication of the company's ambitions and expectations and to develop inclusive strategies that respond to communities' needs. Coherent strategies that link activities to explicit

outcomes, and are backed by previous research and/or experiences for success on the various activities, help to improve the effectiveness of programs.

Effective engagement of smallholders may also require a re-organization of companies and new processes. Decentralized decision-making processes help companies to consider the local circumstances that influence smallholder behavior in their outreach and engagement programs.

Companies should also consider institutional and organizational support as a prominent part of smallholder interventions, alongside technical and financial support. Creating and supporting farmer organizations and cooperatives offers better opportunities to develop economies of scale.

Learning and adaptation is also key. Companies need to monitor and evaluate their interventions on a regular basis to understand how they can improve their effectiveness and impact.

6.3

Devise innovative financing solutions

It is essential to define comprehensive financing packages and work towards lifting smallholders out of poverty. Smallholders face several obstacles in accessing finance to invest in their farms, including lack of land documentation and resources to repay loans before harvest season. Companies can collaborate with non-governmental organizations and finance institutions to improve their management practices to provide technical and organizational support to these local organizations to digitize their processes and build trust for them among the farmers.

Companies and governments could also work directly with finance institutions to build the investment case for financing smallholders. They can gather and give information about the financial needs of smallholders to finance institutions to build tailored financial services. Community-level finance mechanisms like Village Savings and Loan Associations can provide good vehicles to ensure farmer access to finance for planting and farm rehabilitation activities. In Côte d'Ivoire and Ghana, the Living Income Differential as a minimum price for cocoa can help to alleviate poverty among cocoa farmers. Cocoa companies need to commit to this.

6.4

Build long-term partnerships to improve the sustainability of interventions

Companies need to build long-term partnerships with farmers and communities to deliver more reliable, sustainable solutions for social and economic development at the level of communities and landscapes. Such a partnership approach needs to be integrated into a long-term business strategy of companies through, for example, longer term purchase agreements with farmers and farmer organizations. This needs to include involvement and consultation with smallholders and communities in planning and implementation to create acceptance, ownership and long-term sustainability. Smallholder interventions need to build and support local institutions and capacity that can sustain the achievements of interventions beyond their life-cycle.

6.5

Cooperating with stakeholders at all levels is essential to scale efforts

Cooperation among stakeholders at a landscape or jurisdictional level is crucial to address smallholder challenges beyond direct suppliers to achieve sustainability at a meaningful scale. It is important to move toward collaborative processes and jurisdictional programs to improve, link and scale independent programs. Such collaboration among companies, governments and civil society organizations can help to mobilize and share knowledge, expertise, technology and financial resources.

Companies can work with governments to define jurisdictional and landscape programs. Most jurisdictional programs are still in their infancy and remain poorly defined. Companies can work with government agencies to elaborate programs based on lessons learned and best practices. Collaborative programs help to ensure coordination and synergistic interventions of private and public actors. In this context, companies can also collectively push for stronger laws and enforcement, as well as sector-wide capacity building in order to drive sector transformation across entire regions and create a level playing field for all companies involved.

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