

2.3. Flagship 3. Sustainable global value chains and investments for supporting forest conservation and equitable development

2.3.1 Flagship Project Narrative

2.3.1.1 Rationale and scope

The vision. Flagship project 3 (FP3) facilitates innovations in public policy, business models and private investments and finance to stimulate the sustainable supply of timber from natural and planted forests, enhance the sustainable production of high-value tree crops (oil palm, rubber, cocoa, coffee and coconut) and reduce the impacts of agricultural expansion (soybean and beef) in forests. It does this by supporting the uptake of more intensive and integrated agricultural production and forest management systems that comply with higher social and environmental standards, thus supporting forest conservation and improving the integration of smallholder and small and medium enterprises (SMEs).

The challenges. FP3 addresses key global challenges associated with the need to reduce deforestation, forest degradation and conversion of species-rich agricultural and forest landscapes while meeting a growing global demand for food, feed and fiber. This entails improved public and private arrangements to enhance the governance of global value chains to adhere to sustainability standards in order to reduce negative environmental impacts; it involves supporting more intensive and integrated management and production systems with a greater participation of smallholders and SMEs in the value chains, while also emphasizing women, youth and other marginalized groups.

Background. Commercial agriculture is driving significant deforestation, mainly associated with the expansion of oil palm¹, soybean and beef supply² for national and international markets³. Unsustainable logging in natural forest contributes to forest degradation⁴ and often logged-over forest is replaced with agricultural cash crops or tree plantations. The latter often expand through monocropping systems, which lead to biodiversity loss and increased greenhouse gas (GHG) emissions⁵. Commercial pressures on land have accelerated due to a growing demand from emerging economies (e.g. China and India)⁶. In recent years, several public and private policy responses have emerged. Commodity-specific voluntary standard systems (VSS) were developed to promote more sustainable production⁷. Major corporate groups are also adopting commitments to ‘zero deforestation’⁸. Some governments in consumer countries, notably the EU and United States, have introduced regulations to limit imports of timber and biofuels that do not comply with legal and sustainability standards⁹. A major development is the integration of environmental, social and governance (ESG) criteria by financial service providers (FSPs) into their financial products and services design¹⁰. The latter is, however, limited to international FSPs and has yet to fully permeate the financial sector in producer countries¹¹.

Problem statement. Public policy often has contradictory impacts in either reducing or fostering deforestation and degradation of forests and of species-rich landscapes¹². VSS and self-regulatory commitments are gaining increasing traction among consumer goods companies, traders, industry and financial institutions, but their adoption rates are still low, their long-term effects are uncertain¹³ and emerging economies still offer unrestricted market access. Some of the voluntary standards also threaten to weaken the position of smallholders and SMEs since they lack the capacity and resources to comply with more stringent sustainability requirements^{14,15}. Moreover, voluntary standards typically lack gender sensitivity and inadequately address issues related to women workers^{16,17}. Approaches linking VSS to regulatory frameworks and business models integrating smallholders and SMEs in fair partnerships could help to overcome these barriers. Yet the latter are often perceived as economically unviable and are associated with greater financing and investment risks¹⁸. In addition to the possible crowding out of smallholders and SMEs from value chains with more rigid standards, the zero deforestation initiatives aimed at protecting high-carbon stock lands are likely to increase pressures on what are considered degraded lands that are often controlled by smallholders¹⁹.

Scientific rationale. Enhancing the sustainability and inclusiveness of global timber, tree-crop and agriculture value chains increasingly requires more complex governance arrangements involving governments, civil society and the private sector across both consumer and producer countries. An improved evidence base is needed on the complementarities between regulatory frameworks, system standards and corporate sector self-regulatory commitments that can reverse the conditions shaping inefficient, unsustainable and inequitable land use. In addition, better knowledge is needed on how to build business options and fair partnerships that create opportunities for these local actors increasingly involved in global value chains and promoting investments that safeguard the rights of marginalized groups such as women and indigenous people. Finally, better understanding is required on the potential of financial institutions and innovative financing mechanisms to support the adoption of sustainability practices while addressing the needs of investors and smallholders and SMEs.

Scope. FP3 assumes that complementary public and private institutional arrangements aligned with finance may trigger widespread adoption of sustainable practices and greater integration of smallholders and SMEs in the global value chains. FP3 will focus on three areas of work:

- public and private institutional arrangements that create an enabling environment for enhancing the sustainability of commodity supply
- business models that integrate smallholders to deliver positive impacts across social, economic and environmental dimensions
- responsible finance initiatives to bring appropriate business models to scale up and encourage corporate and smallholder uptake of improved sustainability practices.

2.3.1.2 Objectives and targets

Objectives. FP3 contributes to the co-development of knowledge on policies, governance arrangements, business models and finance options and innovations to enhance the sustainability and inclusiveness of timber, tree crops, agricultural production and value chains. FP3 will identify knowledge gaps, distill best practices, produce methods and tools, convene stakeholder meetings, engage in business and multi-stakeholder platforms and co-generate options of policies and practices to:

- improve the sustainability of production by identifying complementarities between public regulations, private commitments and VSS
- inform businesses and service providers about business models that are more inclusive, gender-responsive, economically viable and environmentally sustainable
- support ESG integration in FSP products and services to increase the flows of investments in forest and tree-crop sectors, including contributions to the development of alternative finance mechanisms, i.e. The Landscape Fund (TLF)²⁰ to support smallholders and SMEs.

Outcomes. By 2022, FP3 will achieve three main outcomes:

- Public and private actors will adopt more effective institutional arrangements and mechanisms for ensuring sustainable and inclusive supply of timber and select tree and agricultural crop commodities.
- Private-sector platforms, individual companies and corporate groups, smallholders' organizations and business and service providers will develop and implement business models that are more inclusive, gender-responsive, economically viable and environmentally sustainable.
- FSPs will integrate ESG criteria into their products and services design, which will contribute to expanding their lending to more sustainable land uses and the integration of smallholders and SMEs in the timber and tree-crop sectors with the support of TLF.

We will work with eight commodities in nine Tier 1 countries (in bold) and nine Tier 2 countries in Southeast Asia (**Indonesia**, Malaysia), Mekong (Cambodia, Laos and Vietnam), South America (Bolivia, **Brazil**, Colombia and **Peru**), Mesoamerica (**Guatemala**, Honduras and **Nicaragua**), Central Africa (**Cameroon** and **Democratic**

Republic of the Congo) and Eastern and Southern Africa (Kenya, **Mozambique**, **Tanzania** and Uganda). Seven of these countries overlap with the countries prioritized by the CGIAR for site integration. A subset of commodities will be selected in each region (Figure 1).

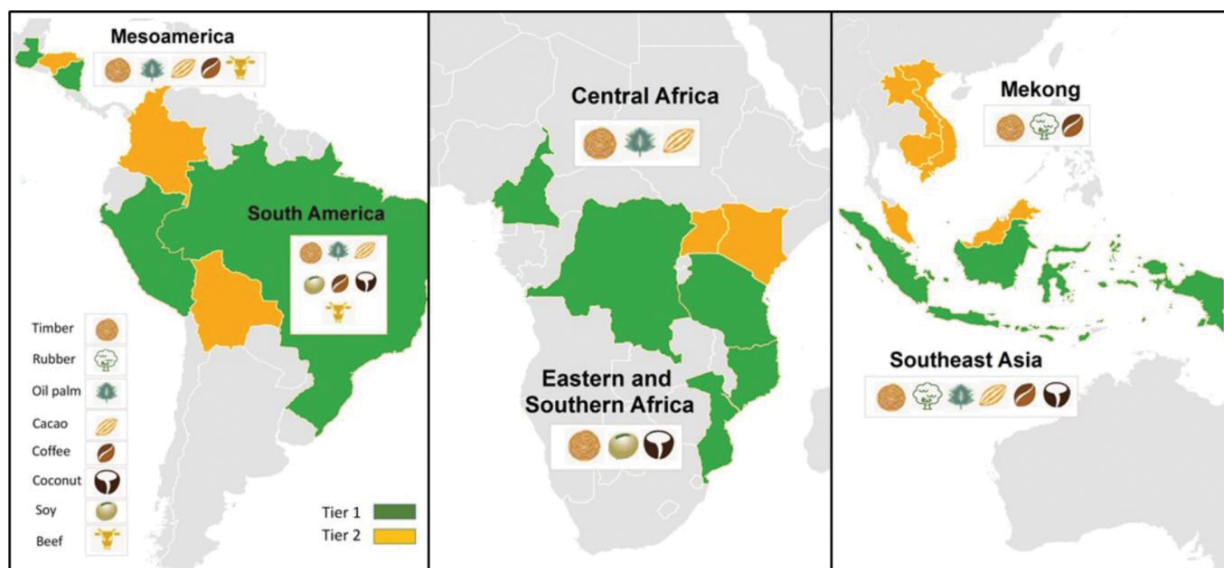


Figure 1. Selected countries and commodities by region.

Targets. By 2022, FP3 will have contributed to an additional 25 million ha of forests becoming subject to sustainable forest management practices, avoiding the deforestation of 2 million ha. In addition, FP3 will support adoption of improved management practices by 5 million smallholders, out of which 3 million will be assisted to exit poverty. This will be achieved by:

- promoting the development of integrated public-private arrangements in at least three major producer countries that directly increase the uptake of sustainability standards
- ensuring that at least 50% of tropical timber and tree crops is produced under internationally recognized sustainability standards or commitments in Tier 1 countries
- engaging with five business platforms and 20 businesses and service providers in five select global commodity value chains that leads to active promotion of inclusive business models
- creating an enabling environment so that at least 30% of the FSPs lending to timber, tree and select agricultural crops adopt ESG criteria and increase by 25% of associated lending to smallholders and SMEs in Tier 1 countries, drawing on lessons from TLF in three countries.

Strategic relevance. FP3 contributes to four sustainable development goals (SDGs): decent work and economic growth (SDG 8), reduced inequalities (SDG 10), responsible consumption and production (SDG 12) and life on land (SDG 15) and two CGIAR system level outcomes (SLOs): (i) reduced poverty and (ii) improved natural resource systems and ecosystem services. It contributes to five IDOs (**bold**) and seven sub-IDOs (*italics*):

- **Enhanced smallholder market access** (IDO 2) via *improved access to financial and other services* (sub-IDO 2.1) by supporting financial schemes adapted to the needs of smallholders and SMEs, including women and youth. In addition, *reduced market barriers* (sub-IDO 2.2.) by devising interventions that create market opportunities while complying with environmental standards.

- **Increased incomes and employment** (IDO 3) via *diversified enterprise opportunities* (sub-IDO 3.1) through developing inclusive business models and *increased value capture by producers* (sub-IDO 3.3) by creating shared value through corporate-smallholder partnerships. More efficient technical, business and financial services will be co-generated with public and private actors.
- **Natural capital enhanced and protected, especially from climate change** (IDO 8) via *land, water and forest degradation (including deforestation) minimized or reversed* (sub-IDO 8.1) by linking public regulations and voluntary standards systems that create conditions for improving natural forest management and avoiding deforestation, and upgrading smallholder production systems.
- **Equity and inclusion achieved** (IDO B, cross-cutting) via *gender-equitable control of productive assets and resources* (sub-IDO B.1) through addressing barriers to participation in and benefits from value chains for women and youth, improving gender-responsiveness of business models and promoting policies for increasing equitable access to and control over productive resources.
- **National partners and beneficiaries enabled** (IDO D, cross-cutting) via *increased capacity for innovation in partner development organizations and in poor and vulnerable communities* (sub-IDO D.4) through capacity development actions linked to the above sub-IDOs.

Tables 1 and 2 show the anticipated allocations of funds to the outcomes and to the CGIAR sub-IDOs.

Table 1. Outcomes by windows of funding.

Outcomes	Amount needed (in million USD)	W1/W2 (%)	W3 (%)	Bilateral (%)
3.1. Public and private actors adopt effective governance arrangements, mechanisms and tools for ensuring sustainable, inclusive, equitable commodity supply in at least three countries	30	25	0	75
3.2. Five business platforms and 20 businesses and service providers develop and implement business models that are more inclusive, gender-responsive, economically viable and environmentally sustainable	24	25	0	75
3.3. At least 30% of financial service providers lending to timber, tree and agricultural crops adopt ESG criteria and increase by 25% in the lending to models that integrate smallholders and SMEs	21	25	0	75
Total	75	25%	0%	75%

Table 2. Investments by sub-IDOs.

Sub-IDOs	Amount needed (in million USD)	W1/W2 (%)	W3 (%)	Bilateral (%)
2.1 Improved access to financial and other services	14	25	0	75
2.2 Reduced market barriers	8	25	0	75
3.1 Diversified enterprise opportunities	9	25	0	75
3.3 Increased value capture by producers	12	25	0	75
8.1 Land, water and forest degradation (including deforestation) minimized or reversed	18	25	0	75
B.1 Gender-equitable control of productive assets and resource	4	25	0	75
D.4 Increased capacity for innovation in partner development organizations and in poor and vulnerable communities	9	25	0	75

2.3.1.3 Impact pathway and theory of change

FP3 embraces ambitious targets based on the assumption that much of the desired change needed to achieve our expected targets will be driven by new knowledge, as well as improved alignment between public and private actors' views and interests. We, however, do not ignore the existence of strong, entrenched interests and incentives supporting non-inclusive and unsustainable business practices in the commodity chains that have to be reversed. FP3 builds on processes and initiatives that the research team is already involved in in order to capitalize on existing social capital and leverage. Moreover, by specifically targeting influential stakeholders within our network that are strategically placed to champion our research, we aim to maximize multiplier effects across diverse political and economic systems and regulatory scales. We expect to achieve these outcomes through three mutually reinforcing pathways involving the joint generation of knowledge products and through targeted engagement and capacity development actions with key select actors (Figure 2).

Pathway 1: Informing political decision-makers and policy dialogues on improved policy options. We will engage governments and intergovernmental platforms to enable more informed policy decision-making processes. At the **subnational level**, we will keep supporting debates on ways to improve sustainable timber, palm oil and soybean/beef production based on territorial approaches that exploit complementarities with supply chain interventions. At the **national level**, we will support decision-making processes building on well-established relationships with **key government actors**, including the Ministries of Forestry, Environment, Agriculture and Commerce and key State agencies in Tier 1 countries (e.g. Indonesia, Brazil, Peru, Cameroon, Democratic Republic of the Congo and Tanzania) and promoting private actors and smallholders' organizations to have a voice in the debates. At the **global level**, we will engage and inform **intergovernmental commodity-specific platforms**, prioritizing those with whom the research team has an established rapport such as the Alliance of Cocoa Producing Countries (COPAL), the Council of Palm Oil Producing Countries (CPOPC) and the International Coconut Genetic Resources Network (COGENT). We will recommend approaches and policy instruments to be included in strategic government planning linked with civil society and smallholders' organizations. Based on our acquired knowledge, we will disseminate policy recommendations targeted at influential stakeholders through participation in international events (e.g.

Global Landscapes Forum) and targeted communication. We will make sure that our recommendations align with those generated by FTA FP2 and FP4.

Pathway 2: Engaging multi-stakeholder processes to improve implementation of standards. FP3 has a strong track record of effective participation in global and national multi-stakeholder processes, where our scientists are seen as credible sources of information. We have actively contributed to improving timber **certification standards** with the Forest Stewardship Council (FSC). FP3 will continue to actively participate in **commodity-specific round tables**, such as the Roundtable of Sustainable Palm Oil (RSPO), the Global Roundtable for Sustainable Beef (GRSB), the association of sustainability standards (ISEAL Alliance), the Sustainable Agriculture Network (SAN) and other less formalized platforms (e.g. The Forests Dialogue). At the national level, we will continue our engagement with **multi-stakeholder initiatives**, such as the Indonesian Sustainable Palm Oil System (ISPO), the Sustainable Cocoa Production Program in Indonesia (SCPP) and the Brazilian Roundtable on Sustainable Livestock (GTPS). Our analysis on the governance approaches and instruments for enhancing sustainability will inform the actions of **international NGOs** that we have existing collaborative agreements with, such as The Nature Conservancy (TNC), World Wide Fund for Nature (WWF-International), The Rainforest Alliance and Oxfam, as well as **national civil society organizations** and key producer and smallholders' associations, including women's organizations. In addition, we will collaborate with the Netherlands Development Organisation (SNV) to disseminate and apply innovative new approaches to sustainable commodity supply, inclusive value chain development and equitable partnerships.

Pathway 3: Supporting private sector initiatives and commitments to sustainability to improve practices. FP3 scientists collaborate closely with **private sector sustainability initiatives**, such as the World Cocoa Foundation, the Indonesian Business Council for Sustainable Development (IBCSD), the Brazilian Beef Exporters Association (ABIEC) and timber producers and trader's organizations in the Congo Basin and South America. FP3 will contribute to private actors' efforts to sustainability by monitoring and evaluating the progress and by informing on practices that enable these actors to deliver on their commitments. This will include drawing on research conducted under FTA FP1 and FP2 in order to ensure private sector uptake of more sustainable production practices, which includes higher quality planting materials and more efficient production systems. Recommendations on scaling options will be shared with **business sustainability platforms**, particularly through the Tropical Forest Alliance (TFA2020). In addition, we will monitor progress and disseminate innovations through the Global Landscapes Forum: The Investment Case, an annual forum organized by CIFOR with key partners in the finance sector. Practical lessons learned through the s' initiative will also be harnessed and shared across other sustainable landscape funds (e.g. Eco-business, Althelia Ecosphere). **Large financial institutions** with active lending and investment portfolios in agriculture and forestry will be targeted through existing knowledge-sharing partners such as the UNEP Finance Initiative (UNEP-FI) and Profundo, as well as key **financial platforms** such as Finance Alliance for Sustainable Trade (FAST) and the Global Alliance for Climate-Smart Agriculture (GACSA).

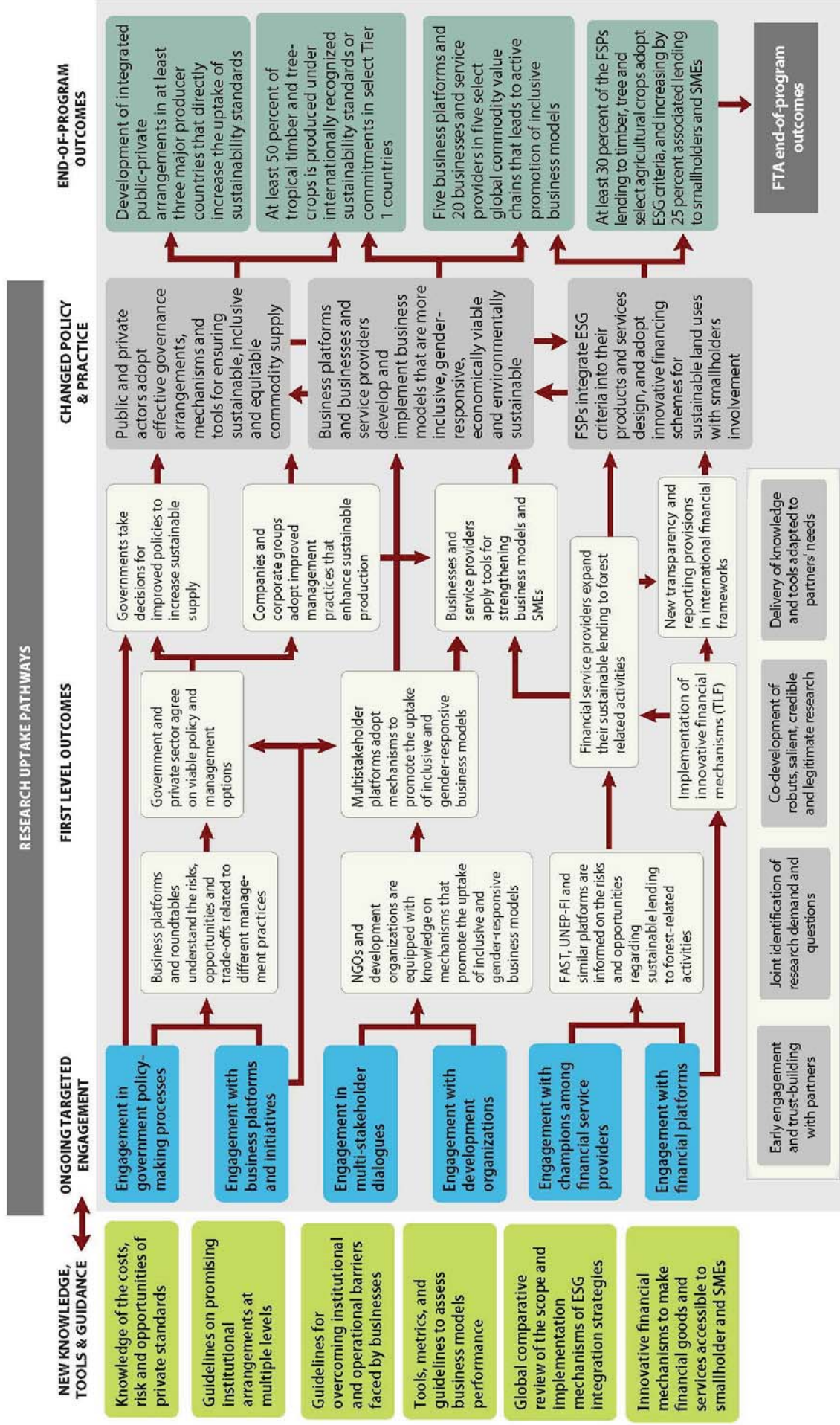


Figure 2. FP3 theory of change and impact pathways.

2.3.1.4 Science quality

State of evidence. Significant knowledge exists on the limited effectiveness of public policy to address environmental impacts from land-based investments that tend to be linked to incentive misalignments, implementation failures and weak enforcement²¹. Similarly, the influence of social, political and economic factors on agent behavior, institutional systems and governance arrangements has been aptly explored²². Research has also shown that VSS are increasingly filling the public policy gap²³ and has highlighted how VSS can incentivize behavioral change²⁴. Major knowledge gaps still exist on the direct and indirect social and environmental impacts of different types of governance arrangements and the potential synergies within and between different types of VSS and public regulations at various scales²⁵. These impacts are greater in the forest and mosaic landscapes.

A body of literature has emerged that examines the welfare impacts and participation determinants of business models that integrate smallholders in value chains for high-value agricultural products, especially contract farming and cooperative schemes²⁶. Building viable business models that include women and men, a diversity of smallholder and family farmers and rural SMEs requires strong coordination across a range of stakeholders, learning and adaptation over time and innovative interventions across scales^{27,28}. However, critical questions remain unanswered about the challenges and risks associated with enhancing the participation of resource-poor smallholders in value chains linked to high potential markets and their differentiated impacts across gender^{29,30}. Similarly, research is needed on the scalability options of different types of inclusive development interventions.

FSPs have, in recent decades, increasingly been implicated in providing products and services to unsustainable forestry and land uses. While some international FSPs have begun to integrate ESG criteria into their financing decisions, there is a lack of knowledge on how best ESG integration can translate into the adoption of sustainability practices³¹. Important questions remain about how to scale FSP adherence to ESG principles and how to enable FSPs to more effectively leverage their capacity to influence corporate policy and practice. ESG integration implications for smallholders and SMEs and the impacts from emerging innovative financing mechanisms³² need to be explored.

Novelty of science and methods. FP3 proposes the use of novel, multi-disciplinary approaches to analyze the drivers and adoption determinants of sustainability standards that link policy and social network analysis, political economy approaches, producer and consumer behavioral studies, and global value chain analysis. Some of these approaches have already been used in our previous research^{33,34}. We will assess the implications of governance arrangements and adoption of production and management practices and business models through surveys with value chain stakeholders. We will link political economy analysis on the interactions between public and private policies and sustainability initiatives in specific subnational jurisdictions with more macro-oriented and spatially explicit modeling exercises at national and regional levels (e.g. GLOBIOM)³⁵, to understand the (potential) impacts of VSS in their interaction with regulations on land-use change, yields gaps and socioeconomic impacts. To inform these modeling exercises, we will make use of global production to consumption systems (PCS) analysis tools that have already been developed by our partners to better understand the leverage points for public and private policy intervention³⁶.

The work on business models will involve a systematic analysis of the social, economic and environmental performance of different models across diverse geographic, economic and institutional contexts. We will use a range of complementary methods that include (intra-) household surveys, participatory action research, economic valuations, remote sensing analysis and farm-level field assessments, relying, where possible, on primary longitudinal data. We will use this data to develop different types of statistical and (participatory) scenario models to identify the magnitude and nature of social, economic and environmental outcomes and critical success factors. This knowledge will be complemented by political economy and gender analyses, assessments of the effectiveness of relevant past interventions and social and policy network analysis to more effectively translate the findings into actionable policies and targeted interventions that produce greater impacts at scale.

In addition, FP3 will identify mechanisms that encourage or impede more meaningful integration of ESG into FSP product and service design and how they promote the adoption of more inclusive business models and practices. This will be linked to TLF action research. We will also conduct analysis of viable mechanisms through which FSPs can most effectively exert influence over corporate policy and practice, as well as innovative financial schemes that can reach smallholders and SMEs. Both analyses will use comprehensive metrics systems that will be developed in conjunction with FSPs and other relevant private and public actors. Specialized financial data portals developed by Bloomberg and Thomson will also be used to test empirically how the financial structures and financing sources of different types of corporate actors have changed over time in response to emerging differentiation within the financial sector around ESG integration. We will also conduct analysis of the performance of new finance instruments (e.g. impact investing, fossil fuel divestitures, green bonds) to complement the work on ESG integration and the opportunities arising from investments in support of smallholder sustainable land use through TLF and other schemes.

Research team niche and qualifications. The main knowledge gaps that FP3 aims to fill in order to advance theories and build new ideas and analytical approaches are summarized in Table 3.

Table 3. Topics where knowledge gaps exist that constitute FP3 main research niche

Knowledge gaps	Using current approaches	New ideas, extending theory
<ul style="list-style-type: none"> Direct and indirect social and environmental impacts associated with different policy interventions for enhancing the sustainability of commodity supply 	<ul style="list-style-type: none"> Sustainable livelihood approaches (SLA) Sustainable production to consumption systems (PCS) 	<ul style="list-style-type: none"> Spatial and temporal interactions among direct and indirect impacts from disparate public and private policy interventions across multiple scales
<ul style="list-style-type: none"> Complementarities and conflicts within and between different types of voluntary standard systems (VSS) and public regulations across scales 	<ul style="list-style-type: none"> Governance of Global Value Chains (GVCs) Multi-level and polycentric governance frameworks 	<ul style="list-style-type: none"> Effective public-private ‘hybrid’ governance approaches for sustainable supply at multiple levels adopting value chains and territorial perspectives
<ul style="list-style-type: none"> Challenges and risks, benefits and costs associated with smallholders’ integration into value chains with greater adoption of social and environmental standards 	<ul style="list-style-type: none"> Inclusive green growth (IGG) frameworks Upgrading in global value chains (GVCs) New institution economics (NIE) 	<ul style="list-style-type: none"> Explaining how different types of business models, contractual, institutional and production arrangements shape outcomes and potential for replication
<ul style="list-style-type: none"> Effectiveness of financial services providers (FSPs) to influence corporate policy and practice with positive impacts for smallholders and the natural resources base 	<ul style="list-style-type: none"> Financial risk modeling Capital structure analysis Precedent transaction analysis 	<ul style="list-style-type: none"> Understanding the role of finance innovations in shaping finance actors’ and smallholders’ behaviors with regard to natural resources use and management

FP3’s core team comprises an interdisciplinary group of scientists with ample expertise to address knowledge gaps and build on new ideas (Table 4). FP3 team comprises social scientists, ecologists, foresters, agricultural economists and geographers. Some members have prior expertise in assessing policies and governance arrangements^{37,38,39}, and direct and indirect social and environmental impacts of investments^{40,41,42}. Collaboration with FP4 scientists will help in identifying how such arrangements could be more effectively embedded in landscape governance systems. This expertise will be complemented by external expertise on economic and land-use modeling (International Institute for Applied Systems Analysis,

IIASA) and analysis of PCS (Stockholm Environment Institute, SEI) (see Section 2.3.1.7). Some members of the team possess in-depth knowledge of value chain development and business models^{43,44}, making them well placed to identify options to generate greater shared value and enable more effective smallholder upgrading within diverse agricultural and forestry sectors^{45,46}. Other team members contribute with biophysical expertise to enable more effective assessment of the environmental sustainability of diverse agricultural, tree crop and extractive production systems⁴⁷, work that benefits from interactions with scientists related to FP2 (see Section 2.3.1.6). Our work on finance will builds on work conducted by Tropenbos in the forestry sector^{48,49} and will be complemented by specialized research partners working in this field, such as Profundo and UNEP-FI. This area of research will be strengthened through hiring of two finance experts. In order to enhance team flexibility and promote creative thinking, our team combines both junior and senior scholars, as well as scientists who actively link research, policy engagement and capacity development.

Table 4. Key scientists involved (CVs in Annex 3.8).

Name, institution	Original discipline	H	Total no of citations	Rank in CGIAR	FP3 role/liaison	FTE
Pablo Pacheco , CIFOR*	Economist, Geographer	31	3038	74	FP3 leader CCAFS liaison	1.00
Marie-Gabrielle Piketty , CIRAD*	Economist	14	850	227***	FP3.1 leader	0.50
George Schoneveld , CIFOR*	Business economist, Geographer	16	723	249	FP3.2 leader	1.00
Herman Savenije , Tropenbos*	Finance, forester	7	100	541***	FP3.3 leader	0.30
Manuel Guariguata , CIFOR*	Ecologist	37	5986	35	FP3.1 scientist	0.50
Bryan Finegan , CATIE**	Forest ecologist	32	4987	55***	FP3.1 scientist	0.21
Plinio Sist , CIRAD*	Forester	25	2327	102***	FP3.1 scientist	0.25
Alain Rival , IRAD	Agronomist	21	1546	142***	FP3.1 scientist	0.17
David Gaveau , CIFOR	Landscape ecologist	21	1786	129	FP3.1 scientist	0.50
Patrice Levang , IRD-CIFOR*	Agronomist	20	1922	121	FP3.2 scientist	0.25
Laura Snook , Bioversity**	Forest ecologist	19	1241	164	FP3.1 scientist	0.20
Paolo Cerutti , CIFOR*	Forester	17	838	230	FP3.1 scientist	0.83
Guillaume Lescuyer , CIRAD	Forest economist	16	897	211	FP3.2 scientist	1.00
Pierre-Marie Bosc , CIRAD	Agroeconomist	15	575	281***	FP3.2 scientist	0.25
Dietmar Stoian , Bioversity*	Forest economist	14	856	225	FP3.1 focal FP3.2 scientist	0.25
Jason Donovan , ICRAF*	Economist	13	1013	190	FP3.2 focal PIM liaison	0.50
Herry Purnomo , CIFOR	Modeling	12	640	265	FP3.2 scientist	1.00
Andrew Wardell , CIFOR	Social scientist	11	780	238	FP3.3 scientist	0.50
Emilie Coudel , CIRAD	Social scientist	10	397	339***	FP3.2 scientist	0.17
Marcel Djama , CIRAD	Economist	9	247	419***	FP3.1 scientist	0.17
Emmanuelle Chevyns , CIRAD	Social scientist	8	267	402***	FP3.1 scientist	0.30
Jean-Marc Roda , CIRAD	Economist	7	226	433***	FP3.3 scientist	0.25
Anne Terheggen , ICRAF	Economist	6	140	498	FP3.1 scientist	0.50

Notes: *CV included in Annex 3.8 under FP3 team, **CV included in Annex 3.8 under FP4 team, ***Scientist not ascribed to the CGIAR, thus the rank corresponds to their position in relation to the CGIAR ranking.

2.3.1.5 Lessons learned and unintended consequences

FP3 builds on work conducted under FTA Phase I, viz. FP2: “Management and Conservation of Forest and Tree Resources” and FP5: “Global Governance, Trade and Investment.” FP2 focuses on analyzing sustainable production potential and access by different stakeholders to timber and non-timber resources. FP5 focuses on assessing the influence of emerging economies, notably China, in driving investments in sub-Saharan Africa; the impacts for people’s livelihoods and forests of the expansion of large-scale investments in select commodities (e.g. oil palm, soybean, beef, cacao) across regions; and the influence of timber certification (FSC) and import policies in consumer countries (EU timber regulation and EU-RED) on domestic market dynamics and formalization of smallholder and chainsaw milling operations. In addition, FP5 has undertaken analysis of the implications from the adoption of voluntary standards in the dynamics of production and rural livelihoods in the cacao sector.

Some key lessons from this research are:

- Large-scale plantation agriculture and wood production, driven by international and national financiers, investors and producers, shapes agrarian and land-use transformations, often with significant trade-offs between food supply and socioeconomic (including gendered) and environmental impacts^{50,51}.
- Public policy, due to perverse incentives and implementation failures, often is ineffective in dealing with negative environmental impacts. Sustainability standards and associated certification schemes have made contributions to ameliorating some of these impacts, but these schemes show mixed results with regard to environmental performance and the promotion of better inclusion of smallholders and rural communities in global value chains^{52,53}.
- Where local communities and SMEs have greater capacity and control in global value chains, it is possible to overcome the failure of public regulations through the adoption of VSS, yet this may also have negative undesired effects if it is not accompanied by access to market rewards^{54,55}.
- In the coffee and cacao sector, Fairtrade certification has considerable potential to support increased benefits for smallholders but Fairtrade needs to take a more active role in working with local SMEs in order to advance context-relevant strategies and help promote more impactful development interventions with State agencies, NGOs and downstream buyers⁵⁶.
- The social risks of large-scale investments are relatively high, yet can partly be ameliorated when investors are encouraged to adopt business models that more productively integrate smallholders into the corporate supply chains. Those business models often improve the welfare of participants, but also change local land-use dynamics by incentivizing land commodification, increasing *per capita* farm sizes and promoting in-migration, while often excluding resource-poor smallholders⁵⁷.
- Targeted interventions are required to better manage the social and environmental trade-offs that arise from the adoption of alternative business models. More effective interventions are those combining actions at the company level with others to build social business capabilities⁵⁸.

The lessons above suggest that while the adoption of improved governance and business models is necessary to tackle negative environmental impacts, it may have contradictory social and economic effects, with winners and losers. One of the key factors that may trigger significant change at scale in the adoption of sustainability practices and business models is the availability of and access to finance that is contingent upon the adoption of good practices. However, the latter tends to work only in contexts where more integrated value chains prevail and may not have positive effects on smallholders, especially of those who are resource poor. In addition, a wider development of VSS may tend to disempower rural farmers in the long term, especially marginalized social groups.

2.3.1.6 Clusters of activity (CoA)

Clusters of activity. FP3 comprises three CoAs with interconnected goals and approaches (Figure 3). The first cluster (**CoA 3.1**) examines the policy and institutional environment shaping the structure and dynamics of timber and agricultural commodity value chains (oil palm, rubber, soybean and beef) that are articulated to global markets and contribute significantly to deforestation and forest degradation. The second (**CoA 3.2**) focuses on business models in timber and tree-crop value chains (e.g. palm oil, cacao, coffee and coconut) that link corporations with smallholder farmers and SMEs. The third cluster (**CoA 3.3**) assesses how the financial sector influences the social and environmental performance of value chains and businesses, and links to CIFOR’s action research planned under the TLF.

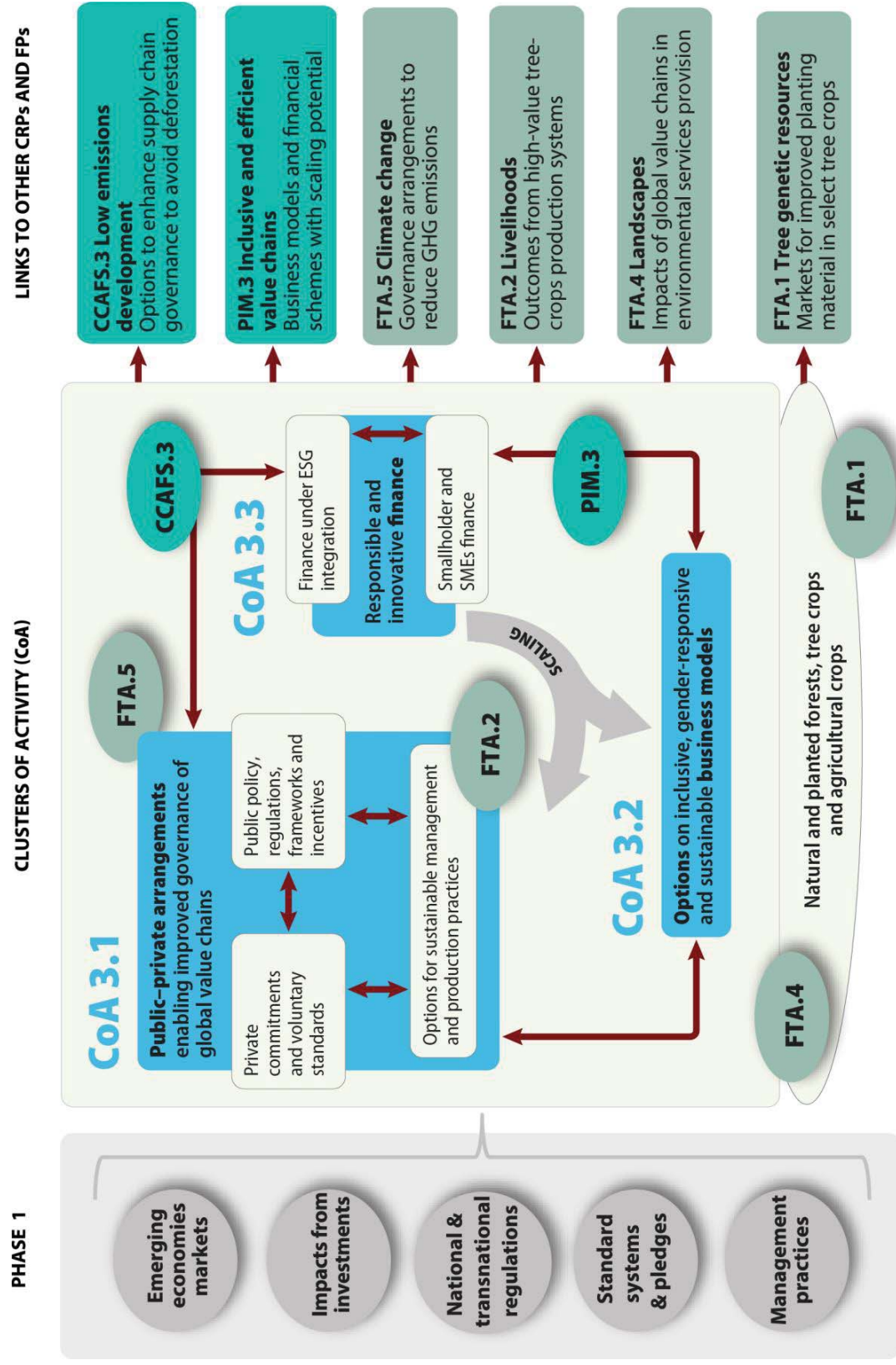


Figure 3. FP3 clusters of activity and links to other FPs in FTA, PIM and CCAFS.

FP3 CoA 3.1 Enabling sustainable commodity supply chains

Problem statement and rationale. There is an increasing need to address the adverse social and environmental impacts of unsustainable timber extraction and the expansion of agricultural commodities (e.g. oil palm, rubber, soybean and beef) with a large forest footprint. Governments tend to promote these commodities due to their significant contribution to fiscal revenues and economic benefits, but they struggle to ameliorate their associated negative social and environmental impacts. Emerging voluntary sustainability standards (e.g. certification and commodity round tables) as well as private self-regulatory commitments (e.g. zero deforestation) aimed at enhancing the social and environmental performance of commodity production suffers from a number of limitations. These initiatives differ in their approaches, scope and targets, conflicting in some cases and complementing government-backed efforts in others, with smallholders and SMEs often being excluded as they lack the capacity to comply. This calls for exploring antagonisms and complementarities between different types of regulatory instruments and private initiatives, as well as for identifying mechanisms to address uptake barriers. Research will examine the goals and scope of these disparate initiatives, implementation challenges, adoption barriers and their outcomes, not only with respect to supporting the adoption of improved landscape management and more intensive agricultural production practices, but also with respect to their potential to reduce yields gaps and generate positive social and environmental outcomes. Research will also assess what is required in supply chain management and business operation development in the value chain to support sustainable supply chains. Finally, we will assess the costs, benefits, risks and opportunities, and the trade-offs of different management options linked to diverse value chain configurations and institutional contexts.

Hypothesis. Private sector sustainability standards, in conjunction with supportive public policy, will foster improved management and business practices with enhanced socio-environmental performance.

Key research questions. The main questions related to enabling sustainable supply chains are listed below.

- What political, institutional and social factors contribute to shape the adoption and implementation of public policies and private sustainability standards and commitments?
- How do private standards and commitments, in their interaction with public policy at different scales, influence the effectiveness and adoption rates of sustainable practices in value chains?
- What are the public, private or hybrid arrangements that have the most potential for enhancing the adoption of sustainability practices and social inclusivity in the value chain?
- What production and management practices are needed to simultaneously increase sustainable supply and social inclusion and equity (gender, intergenerational)?

Key outputs. The main deliverables to support sustainable value chain development are:

- a global comparative analysis, based on a systematic comparison across case studies, identifying the political, economic and social factors (including gender) enabling or preventing the adoption and implementation of private sustainability initiatives in their interaction with public policies
- a comparative assessment of the challenges and opportunities and effectiveness for improving sustainability across disparate voluntary standards (e.g. certification, zero deforestation)
- guidelines on innovative solutions for addressing implementation gaps to improving sustainability and social outcomes through changes in incentive structures, supply chain management and business processes and operations across diverse value chain configurations
- guidelines and tools on the most promising public–private institutional arrangements at different levels for achieving sustainability that combine State and privately-driven interventions, and opportunities for developing ‘hybrid’ public-private approaches
- a decision-support tool based on a global comparative analysis of costs, benefits and trade-offs of improved natural forest management practices with regard to planted forests and tree crops and strengthened capacities for co-developing the most appropriate practices and models.

FP3 CoA 3.2 Business models in timber and tree-crop value chains

Problem statement and rationale. There is a growing consensus that the transformative potential of markets needs to be better leveraged to achieve development goals. The assumption is that business models that productively integrate smallholders and SMEs offer win–win opportunities by increasing buyer access to raw materials while improving smallholder and SME access to profitable (global) markets and services that facilitate the uptake of more intensive and environmentally sustainable production practices. However, understanding is lacking on the conditions under which such business models can effectively overcome existing bottlenecks and deliver positive, long-term impacts at scale. On the one hand, smallholders and SMEs may struggle to meet the quality and sustainability standards adopted by large buyers and processors. On the other hand, downstream buyers and processors may lack the necessary knowledge, resources and capacity to develop business models that include smallholders and SMEs and may be reluctant to invest in such models due to their perceived risks. Innovation in business models thus requires new insights into the constraints faced by smallholders and SMEs, and the potential trade-offs between social, environmental and economic objectives. This work will provide improved knowledge on opportunities to overcome such bottlenecks by enabling value chain support organizations (e.g. government agencies, financial institutions, civil society organizations, development agencies, multi-stakeholder initiatives) to improve and better link their service delivery in support of more inclusive, gender-responsive, equitable and sustainable business models.

Hypothesis. Downstream value chain actors adopting business models that integrate smallholders and SMEs will contribute to achieving inclusive development and sustainability objectives.

Key research questions. The main questions related to this cluster are:

- What types of business models involving smallholders and SMEs can be identified and how economically viable, socially inclusive and environmentally sustainable are they?
- What barriers to participation do women, youth and other marginalized groups face in different business models and value chains across different institutional and economic contexts?
- What are the factors that explain the distribution of benefits across different types of business models and how can benefits be distributed more equitably among different stakeholders?
- How can value chain service providers contribute to the development of more impactful and adaptive business models in different value chain configurations?
- What governance and institutional arrangements could facilitate scaling of business models that better manage social, environment and economic objectives?

Key outputs. The main deliverables related to the work on business models are:

- guidelines for overcoming institutional and operational barriers and obstacles faced by businesses in integrating smallholders into their operations and respective value chains
- a typology of business models for timber and tree-crop commodities, based on their economic, environmental, social performance and related trade-offs, with emphasis on women and youth
- best practice guidelines, tools and metrics for the design, implementation and assessment of business models that are more socially inclusive, economically viable, environmentally sustainable and can potentially produce greater impact at scale
- guidelines for organizations providing technical, business and financial services to value chains for strengthening the capacity of smallholders and SMEs to engage with businesses on an equal footing.

FP3 CoA 3.3 Scaling through responsible finance and investments

Problem statement and rationale. FSPs, such as private banks, development finance institutions and institutional investors could potentially play an important role in augmenting corporate social and environmental performance in forest and tree-crop value chains through the adoption of ESG criteria.

Instead of leading to improved corporate social and environmental performance ESG integration may also stimulate a bifurcation of the financial sector as businesses that already exhibit good social and environmental performance can secure ESG-conditional financing, while others become more dependent on FSPs that do not demand compliance with ESG. In addition, the existence of more responsible FSPs does not necessarily lead to increased finance for smallholders. One challenge is to identify mechanisms that both promote more widespread adoption of ESG among a greater number of FSPs and increase their capacity to effectively leverage their potential influence over corporate strategy and practice. Another challenge is to find more effective ways to link progress in responsible finance by FSPs with improvements in smallholder and SME access to finance. With the latter, innovative financial architectures and alternative lending schemes are emerging, which could contribute to further mainstreaming responsible finance norms. CIFOR's TLF initiative is one of a dozen such funds that aim to finance sustainable land-use investments by improving smallholder and SME access to affordable credit. This work will examine ways to address the two challenges.

Hypothesis. Linking ESG integration into FSP operations while improving access to smallholder and SME finance may trigger wider uptake of sustainable supply and inclusive business models.

Key research questions. The main questions related to responsible finance and investment are listed below.

- What are the incentives and constraints that shape the implementation of responsible investment and financing practices by FSPs under different institutional and economic conditions?
- How do different types of FSPs integrate ESG into the design of their products and services (e.g. project finance, asset management, debt and equity capital markets) to attend different financial operations along value chains and what factors shape their ESG integration strategies?
- What mechanisms could promote more widespread adoption of ESG criteria among different types of FSPs and improve the influence thereof on corporate social and environmental performance as well as including more supportive criteria to include smallholders?
- What factors restrict the access of smallholders, including women and youth, and SMEs to financial products and services, and under what conditions could access and availability to these goods and services be enhanced to support inclusive and sustainable development objectives?
- What institutional architecture(s) are needed to improve smallholder and SME access to affordable credit and what other complementary technical and market conditions have to be in place?

Key outputs. The main deliverables to be produced under this cluster are:

- three regional comparative reviews of the scope and implementation mechanisms of ESG integration strategies for different types of FSPs products and services
- analysis of the conditions and mechanisms that incentivize FSPs to more explicitly integrate ESG or similar criteria into their products in different institutional and economic contexts
- analysis of the impacts of ESG-conditional finance on the social and environmental performance of different types of corporate value chain actors across disparate socio-ecological contexts
- metrics and tools that enable FSPs to better screen prospective corporate clients and evaluate the social and environmental performance of their financial portfolios
- analysis of innovative financial mechanisms implemented by FSPs to make financial goods and services more accessible to smallholder and SMEs in timber and tree-crop value chains.

Links among the three clusters of activity

The three clusters of activities are strongly interconnected. The work under **CoA 3.1** focuses on an enabling environment for advancing sustainable commodity supply in ways that satisfy a variety of stakeholders and the environment. This analysis also addresses the risk of exclusion and disempowerment of smallholders in value chains, as well as policy, institutional and market options to mitigate them. The identification of the most appropriate regulations, incentives and private sector standards and commitments for advancing sustainability in commodity chains informs **CoA 3.2** which looks at business models upstream in the value

chain and opportunities and mechanisms that are more socially inclusive, economically viable and environmentally sustainable. This includes arrangements and mechanisms in support of smallholders, particularly women, youth and other marginalized groups, to ensure a more equitable distribution of risks and rewards along the value chain. **CoA 3.3**, in turn, will shed light on opportunities for scaling business models that effectively integrate ESG or similar criteria through the development of innovative financing architectures of responsible finance that advance the adoption of sustainability standards and practices in forest and tree product value chains.

CoA 3.1 will link with **CCAFS FP3** (low-emission development), specifically CoA 3.3 for conducting research on options to enhance supply chain governance to avoid deforestation, with emphasis on beef production in the Amazon and palm oil in Indonesia. **CoA 3.2** and **CoA 3.3** will link with **PIM FP3** (inclusive value chains), specifically CoA 3.3, with a primary focus on assessing business models for participation of smallholders in forest and tree-crop products, and financial schemes with potential for scaling. FP3 also links with other **FTA** FPs, specifically with: (1) **FP1** (tree genetic resources) by exploring opportunities from improved tree-planting material in some value chains; (2) **FP2** (livelihood systems), through assessing the performance of smallholder production systems that embrace high-value trees (e.g. cocoa, coconut, coffee, oil palm) under different business models; (3) **FP4** by exploring the impacts of global value chains in environmental services at the landscape level and initiatives to deal with them, such as certification and; (4) **FP5** by providing analysis of the effectiveness of governance arrangements in supporting the transition to more sustainable supply chains and thus reducing GHG emissions.

2.3.1.7 Partnerships

The FP3 implementation partners are **CIFOR**, **CIRAD**, **ICRAF**, **Bioversity International**, **CATIE** and **Tropenbos**. FP3 will engage a select number of research partners for co-production of knowledge. Development or knowledge-sharing partners with complementary capacities will be engaged to undertake work on research, field implementation, outreach engagement and capacity building.

Table 5. Selected partners in FP3 and their roles.

Type of partnership	Type of center/organization	Center/organizations	Key role	Stage of involvement in research to impact
Managing partners	CGIAR	CIFOR	Focus on CoA 3.1, CoA 3.2 and CoA 3.3, emphasis in timber, oil palm, soybean, beef	Research (discovery, proof of concept), policy engagement, capacity development, fundraising
		ICRAF	Focus on CoA 3.1 and CoA 3.2, emphasis in cocoa, coffee, oil palm, rubber	
		Bioversity	Focus on CoA 3.1 and CoA 3.2, emphasis in timber, cocoa, coffee and coconut	
	Non-CGIAR	CIRAD	Focus on CoA 3.1 and CoA 3.2, emphasis in timber, oil palm, soybean and beef	
		CATIE	Focus on CoA 3.1 and CoA 3.2, emphasis in timber, cocoa and coffee	
		Tropenbos International	Focus on CoA 3.2 and CoA 3.3, linking with civil society organizations	
Contributing research partners	Advanced research centers for supporting	SEI	Research under CoA 3.1; inform global platforms on production and trade	Engagement in research, exploring new ideas, proof of concept and
		IIASA	Modeling under CoA 3.1 on implications of governance arrangements	

Type of partnership	Type of center/ organization	Center/ organizations	Key role	Stage of involvement in research to impact
	research	Copernicus Institute	Research under COA 3.1; engagement with European debates and platforms	fundraising
		RFF	Research under CoA 3.1, on the effectiveness of policy instruments	
		ISL	Research under CoA 3.3, engagement with responsible finance platforms	
		Profundo	Research under CoA 3.3; engagement with responsible finance initiatives	
	Developing country research partners	Universities and institutes (e.g. USP, IPB)	Research under CoA 3.1, CoA 3.2 and CoA 3.3, engagement in national policy dialogues and capacity development	Local research, capacity building and scaling and multiplication
		NGOs (e.g. Centro Terra Viva, SPDA)	Research under CoA 3.1, CoA 3.2 and CoA 3.3, identification of country-specific research priorities and policy engagement	
Knowledge-sharing partners	Development organizations	SNV	Piloting CoA 3.2 and 3.3 innovations for smallholder capacity development	Identification of research gaps, co-development of options, proof of concept
	Multilateral organizations	UNDP, UNEP-FI, WB	Co-development and dissemination of new approaches and tools for supporting innovations based on lessons learned from previous experiences and available evidence	
	Business networks	FAST	Platforms for identification of research gaps, relevant questions and co-development of options, with emphasis on CoA 3.1	
	Certification initiatives	Certification systems (SAN, FSC, RSPO)		
Policy and out-scaling partners	Regulators	Ministries and State agencies	Engagement in co-hosting of policy debates and link with ongoing policy dialogues and policy-making processes	Identification of research gaps, scaling
	Environmental organizations	TNC, WWF	Piloting CoA 3.2 and 3.3 innovations for sustainable commodity supply and land use with multi-stakeholder approaches	Scaling, feedbacks from implementation actions
	Business platforms and networks	TFA 2020	Platforms for co-development of approaches with potential for uptake and critical assessment of implementation progress	
ISEAL				

Research partners include: **SEI**, **IIASA**, the **Copernicus Institute** for Sustainable Development at Utrecht University and the **Institute for Sustainability Leadership** at the University of Cambridge. **SEI** will contribute to identifying global supply–demand flows and the role of different types of value chain actors in our prioritized commodities and **Resources for the Future** on assessing the effectiveness of specific policy instruments. **IIASA** will contribute by examining the effect of public regulations and private commitments in commodity supply (e.g. certification, zero deforestation) and their impacts on production, trade and GHG emissions as a result of land-use change and agriculture. The **Copernicus Institute** will help to assess the

direct and indirect environmental impacts from investment decisions and alternative governance scenarios. The **Institute for Sustainability Leadership** will support research on finance and link with the Banking-Environment initiative. **Profundo** will contribute specialist approaches in the finance corporate sector. We also have established research partnerships in selected countries. For example, we will work with the **Museum Emilio Goeldi (MPEG)**, **EMBRAPA Eastern Amazon** and the **University of Sao Paulo** in Brazil, as well as **FORDA** and **Bogor Agricultural University (IPB)** in Indonesia. We also have long-term partnerships with NGOs, such as **Centro Terra Viva** in Mozambique and **Peruvian Society of Environmental Law (SPDA)** in Peru.

Knowledge-sharing partners include: **SNV**, an international development organization that provides direct technical support to smallholders, SMEs, government and businesses to develop inclusive agricultural value chains; **Fairtrade International**, a multi-stakeholder association that develops and facilitates adherence to fair trade standards; United Nations Development Programme (**UNDP**), a UN agency supporting countries to develop policies, institutional capabilities and build resilience in order to sustain development results; **FAST**, an alliance of FSPs focused specifically on the financial needs of smallholders and SMEs operating with environmental and social responsibility; **UNEP-FI**, a platform of public and private financial institutions working with UNEP on ESG standards and finance; and the **GACSA** Investment Action Group. The partnerships with **SNV** and **Fairtrade International** will provide opportunities for testing innovative business models and approaches. **UNDP**, particularly in Indonesia, will provide links with several ministries, mainly linked to the **InPOP** platform. **FAST** is a key link to FSPs interested in working with smallholders and SMEs. **UNEP-FI**, an existing partner of CIFOR on developing innovative financial schemes, will serve as a knowledge broker with UNEP-FI members.

Policy and outscaling partners. FP3 will work closely with international organizations such as: the Food and Agriculture Organization of the United Nations (**FAO**), **WWF International**, **TNC**, **IFC**; and multi-stakeholder and business platforms such as: **FSC**, **RSPO**, **SAI**, Tropical Forest Alliance (**TFA 2020**), **GRSB** and **IPOP**. The latter partners involve both international- and national-level actors. FP3 will also link with issue-based platforms supporting sustainable, small-scale agriculture such as **BCTA**, Inclusive Market Development (**IMD**) and the Global Development Alliance (**GDA**); financial institutions associated with CIFOR's **The Landscape Fund** including the Netherlands Development Finance (**FMO**), **Innpact**, Banking Environment Initiative (**BEI**), **EIB**, Norwegian Investment Fund (**NorFund**); and the **Fair Climate Fund** and similar initiatives supporting businesses in adopting socially and environmentally sound practices.

2.3.1.8 Climate change

FP3 will directly address critically important climate change issues, because sustainable global commodity value chains will contribute to the reduction of GHG emissions, both from deforestation and forest degradation, from agricultural production practices and Emissions Embodied in Trade (EET). Tropical deforestation currently contributes 10–11% to global GHG emissions⁵⁹. Over the last two decades, export-driven commodity agriculture linked to oil palm, soybean and beef production has constituted the main driver of deforestation in the tropics⁶⁰, which has been accompanied by increases in EETs⁶¹. The production of agricultural commodities for national and international markets is a significant source of GHG emissions from agriculture, forestry and other land uses⁶². Likewise, oil palm is expanding onto peat swamp soils producing emissions from the decomposition of peat over many decades following the cutting down of forest⁶³. Natural forests have usually been logged using destructive conventional techniques and remnant forests are likely to be further degraded due to fire, as well as edge and isolation effects⁶⁴. Increasing demand for timber may continue to stimulate additional destructive logging and increase vulnerability to forest conversion, stimulated by a perceived lack of value of the degraded ecosystem⁶⁵. All of these degradation processes produce GHG emissions beyond those caused by deforestation. FP3-generated knowledge and tools will contribute to climate change mitigation in three ways: (i) by supporting effective implementation of private commitments to increase sustainability in the agricultural commodity sector and therefore reducing GHG emissions; (ii) by facilitating innovation in the climate-smart production of timber

from natural forests and through ‘tailored’ tree-crop products to meet an increasing national and international trade and (iii) by reducing EET of agricultural commodities.

2.3.1.9 Gender

Gender research in FP3 will continue to build on past FTA gender work on timber, palm oil and cacao value chains. Emerging strands of strategic gender research include the gendered implications of cash-crop expansion, product certification schemes, business models and financial services. Furthermore, the collection and analysis of socioeconomic (gender, age, class, ethnicity, etc.) disaggregated data is of crucial importance for both identifying synergies and managing potential trade-offs between social, economic and environmental outcomes of value chains and business models. In addition to conducting research in a gender-sensitive manner, gender-specific research questions in each of the CoAs are identified. The purpose is to provide policy-makers, companies, producer organizations and service providers with gender-responsive policy options and business models for actively promoting gender equity. Our approach to equity includes both gender and intergenerational equity by emphasizing opportunities for women and youth. In addition to data collection and analysis, FP3 work on gender will also include target and priority setting, dissemination of knowledge products and monitoring and evaluation. The integration of gender into FP3 will be monitored by the gender equality in research scale (GEIRS), developed by the FTA gender integration team and rolled out in 2015. By adopting a dual approach to gender, i.e. conducting gender-specific research and integrating gender throughout the FP3 research portfolio, FP3 is expected to contribute to a specific sub-IDO on improving gender-equitable control of productive assets and resources (see Section 2.3.1.2). Youth issues, as well as other issues stemming from socioeconomic differentiation will be considered in our research. There will be a particular focus on business models and the potential business opportunities for the youth.

2.3.1.10 Capacity development

FP3 capacity development will be guided by the Capacity Development Framework developed under CGIAR. FP3 will address gaps in linking research and development by working with partners in a number of ways through a continuous horizontal learning process. First, we will develop future research leaders by integrating MSc and PhD students from partner universities into our research projects (CapDev element 4). Second, we will develop and disseminate guidelines and learning tools (CapDev element 2) to multi-stakeholder processes (e.g. FSC, RSPO), business platforms (e.g. ISPO, GTPS, TFA 2020) and key selected State agencies. For example, guidelines and tools will be produced for monitoring the effectiveness of selected VSS, the implementation of zero deforestation commitments and alternative options to support inclusive business models linked to palm oil, cacao, coffee, coconut and timber. Third, we will conduct gender-specific analysis and develop methods (CapDev element 5) related to the different areas of work mentioned above, aiming to integrate gender-explicit criteria into sustainability standards (e.g. RSPO) and criteria for assessing private commitments. Fourth, we will contribute to strengthening multi-stakeholder and innovation platforms by providing knowledge on complementary public and private institutional arrangements (CapDev element 10) to tackle specific governance challenges; for example, oil palm governance linked to smallholder integration and production intensification in Indonesia and SMEs development in the cacao sector in Peru. Fifth, we will work through FSP research and boundary partners engaged in CIFOR’s action research on TLF. Finally, we will work with the CGIAR community of practice on capacity building and other co-learning communities of practice on the ground. In addition, we will inform with our work some PIM-supported value chain hubs involving researchers and practitioners engaged in joint learning on value chain interventions and will be able to share our approaches and research findings.

2.3.1.11 Intellectual asset and open access management

Intellectual assets produced under FP3 are in compliance with the CGIAR principles on the management of intellectual assets (CGIAR IA principles) and CIFOR IA management policy for effective dissemination of its

research outputs and maximize global impact. The following CGIAR IA principles shall be adopted as guidance for IA management of FTA: (i) research results and development activities are regarded as international public goods for the maximum possible access; (ii) partnerships are critical to ensuring access to the best knowledge and innovation to achieve maximum impact; (iii) sound management of IA and intellectual property rights (IPR) with integrity, fairness, equity, responsibility and accountability; and (iv) all IAs produced under FP3 are managed in ways that maximize global accessibility.

In line with the CGIAR open access and data management policy and CIFOR OA policy, FP3 outputs will be made available under the least restrictive licensing to describe the legal rights to information products and encourage their use and adaptation. The different outputs will be published in a format that can be downloaded, indexed and searched by commonly used web applications. The outputs will be disseminated through open access repositories to ensure they are archived and shared systematically with other Centers and made accessible as international public goods. For more details, see Section 1.0.12 on FTA IA Management and Section 1.0.13 Open Access Implementation in the CRP narrative.

2.3.1.12 Flagship management

FP3 will provide a platform for conducting collaborative research for scientists from the different partner organizations (CIFOR, CIRAD, ICRAF, Bioversity International, CATIE and Tropenbos). It will promote the integration of research across regions, commodities and themes (following the main thematic priorities defined in the three CoAs). FP3 will be coordinated by Pablo Pacheco, a Principal Scientist at CIFOR and each CoA will be coordinated by a designated scientist: CoA 3.1 by Marie-Gabrielle Piketty, CIRAD; CoA 3.2 by George Schoneveld, CIFOR; and CoA 3.3 by Herman Savenije, Tropenbos.

Table 6. Expertise of FP3 coordinator and CoA leaders (see also CVs in Annex 3.8).

Scientist	Role	Expertise
Pablo Pacheco, PhD (CIFOR)	FP3 leader	He is a Principal Scientist at CIFOR based in Bogor, Indonesia. He is the Team Leader of "Value Chains, Finance and Investments" at CIFOR and coordinates Flagship 5 on "Global Governance, Trade and Investment" under the CGIAR Program on Forests, Trees and Agroforestry (FTA). He holds a PhD in geography from the Graduate School of Geography at Clark University, an MSc in agricultural economics and a BA in sociology. His work focuses on the implications of globalized trade and investment on forests, people's livelihoods and economic development with a focus on timber, soybean, beef and oil palm in South America and Southeast Asia and the associated State and non-State responses to manage their social, economic and environmental impacts and trade-offs. He has about 200 publications including journal articles, books, book chapters, working papers and policy briefs. He is actively engaging policy debates with public and private actors in these topics.
Marie-Gabrielle Piketty, PhD (CIRAD)	FP3.1 leader	She is Economist and Senior Scientist at CIRAD-GREEN research unit (PhD from Paris-I/Sorbonne University). She has been working on the limits of FSC certification in Brazil and, more broadly, on the difficulties of environmental certification and value chains private commitments to reconcile economic effectiveness, social equity and environmental sustainability without stronger synergies with public policies. She has expertise in evaluating public policies and value chains private commitments governing land-use change in agricultural frontiers, with emphasis in agricultural commodities in Brazil and Indonesia. She has coordinated the work of CIRAD scientists with expertise on value chains, corporate strategies and international standards in FTA FP5.1.
George Schoneveld, PhD (CIFOR)	FP3.2 leader	He is a Senior Scientist at CIFOR, based in Nairobi, Kenya. He holds a PhD in geography from Utrecht University through the Dutch Ministry of Foreign Affairs IS Academy on Land Governance, an MSc in international development studies and an MSc in international business economics. He has led numerous research

Scientist	Role	Expertise
		activities and projects on the drivers, global governance, business models and social, economic, and environmental impacts of private investments in the agriculture, bioenergy and forestry sectors in Eastern, Southern and West Africa, Southeast and South Asia and South America. His experience with a wide range of qualitative and quantitative methods and disciplines, which include value chains, finance, business strategy, political economy and livelihood studies, has enabled him to undertake highly integrative and multi-disciplinary research.
Herman Savenije, MSc, (Tropenbos International)	FP3.3 leader	He is a Program Coordinator at Tropenbos International, based in Wageningen, The Netherlands. He holds an MSc in tropical forestry and has focused his work on assessing the role of forest finance and investment, including finance for supporting ecosystem services provision, in the context of broader approaches for enhancing forest governance and sustainable timber chains, including the effectiveness of forest certification. He has been lead writer in several publications on the topic and played an important role in leading a community of practice on forest governance, finance and investment among other leadership roles in the sector. He has been involved in the publication of several volumes of <i>The European Tropical Forest Research Network News</i> (ETFRN) on forest governance, illegal timber trade and farm and forest organizations.

The FP3 coordinator will be in charge of the overall coordination of program development conducting tasks such as planning, budgeting and reporting, as well as securing bilateral resources by supporting proposal development efforts and ensuring coordination with other FTA FPs and CRPs. CoA coordinators will contribute to the process of planning, budgeting and reporting for their respective CoAs and will help to co-develop the research portfolio under each of the CoAs, including support for fundraising, in consultation with the FP3 coordinator. This will ensure that there is programmatic consistency across FP3 CoAs and across the six regions where FP3 will be focusing its work. FP3 and CoAs coordinators will ensure thematic and regional balance in each of the CoAs team based on the end-users' priorities and availability of financial resources. In order to ensure coordination in developing and implementing FP3, quarterly virtual meetings and one in-person annual retreat will be held at either one of CIFOR, ICRAF and/or CIRAD's annual meetings. These meetings will integrate knowledge-sharing partners and as much as possible, policy and out-scaling partners. CoA leaders will be supported by focal points from CGIAR partner Centers and will be assisted by an advisory team involving the main non-CGIAR partner organizations involved in FP3 (Table 7).

Table 7. FP3 CoA leaders, focal points and advisors.

Cluster of Activity	Leader / coordinating	Managing partners focal points	Non-CGIAR advisory team
CoA 3.1	CIRAD: Marie-Gabrielle Piketty	CIFOR: Paolo Cerutti CATIE: Bryan Finegan CIRAD: Plinio Sist	SEI: Toby Gardner SAN: Andre de Freitas (TBC)
CoA 3.2	CIFOR: George Schoneveld	ICRAF: Jason Donovan Bioversity: Dietmar Stoian CIRAD: Pierre-Marie Bosc	SNV: Hans Smit Others TBD
CoA 3.3	Tropenbos International: Herman Savenije	CIFOR: Andrew Wardell	Profundo: Jan Willem van Gelder FAST: Noemi Perez (TBC)