



**RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry**



**Extension Proposal for 2015-2016
Revision 25/08**



Introduction: Strategic context, lessons from FTA's first three years, and transition to Phase 2

FTA began as an integrated, multicenter program in July 2011, focused on sustaining and enhancing the role of forests and trees in addressing climate change, food security and sustainable production in developing countries. FTA 'hit the ground running' by incorporating relevant work ongoing among the four Centers involved, building on that momentum through increased partnerships. The SRF was not available at that time. Work in our first years was focused on developing a new, program-level modus operandi: building collaboration among scientists in different centers whose efforts were integrated within components, through joint planning and the development of joint projects; carrying out training on outcome mapping and delivery within and among components; and strengthening gender aspects of research through training and the recruitment and integration of gender experts. Our early efforts were judged to have been successful by both an external evaluation and stakeholder feedback. For the extension period we made adjustments based on our learning during that period to address the specific CGIAR goals. We began an internal restructuring process in 2013, to increase internal consistency around a limited set of IDOs in line with the CGIAR's common IDOs and the currently discussed SDGs. We have refined our theory of change, increased inter-flagship collaboration, made gender integration and gender relevant research a norm, tested new integration platforms (e.g. Sentinel Landscapes) as well as contributing to overall CGIAR initiatives and goals (Gender integration, IDO design group, Science Forums, etc.).

In 2013-2014, FTA was the first CRP subjected to a full independent evaluation. It concluded that FTA had high relevance and emphasized the need to continue funding to the program and recommended some adjustments for the 2nd call for proposals in 2017, and the maintenance or research and outcome delivery during the extension phase (2015-2016). FTA management developed a response to the evaluation, and took these recommendations into account in this extension proposal. Similarly, comments from the CO and ISPC on the original extension proposal have been taken into account in developing the revision. These recommendations will be carried further and forward into the revised FTA in 2017. We will use the extension phase to move further towards a fully outcome-oriented research-in-development program, and recognize the need to¹:

- Improve the FTA governance model towards more independence
- Streamline processes and make the program more efficient in terms of portfolio management
- Allocate a major portion of W1/W2 funds strategically based on the actual portfolio
- Continue reinforcing our theory of change
- Put in place an appropriate and clear result framework centered on a results-based management approach but allowing for two important windows for present and future research (opportunistic and innovative/high risk) that cannot be rationalized within a narrowly defined results-based management system²
- Increase focus via a few major strategic research programs sustained by a portfolio of smaller Flagship Projects (FPs) with fixed beginning and end points
- Work towards more inter-CRP collaborations
- Develop a strong compelling vision for FTA beyond 2016

We already have undertaken steps towards these objectives. Our guiding principles in proposing these changes are: i) to progress with as little disruption as possible of the ongoing research work, especially in this extension phase; ii) enhance inter-FP collaboration and synergy; iii) reduce the level of actual or perceived overlap; iv) work towards a more focused portfolio and identify new important lines of research.

¹ See annexes 1 and 2 for an outline of the envisioned change process towards 2017 and the FTA management response to the evaluation

² Evaluation of the CGIAR Research Program "Forests, Trees and Agroforestry" (FTA), Volume I – Evaluation Report, July 2014, p79

1. Intermediate development outcomes, theories of change and impact pathways

Humankind has made significant progress regarding SLO 1, 2 and 3: overall food production has increased, hunger has been reduced and nutrition and health largely improved. However most of this progress has been at the expense of natural resources (Fig. 1). Continuing this trajectory threatens the future of food systems and sustaining environmental services. The economic value equivalent of the loss of natural capital due to agricultural expansion and intensification may exceed the gains made through agricultural production.

An estimated 1.6 billion people depend in part or fully on forests and tree resources for their livelihoods. More than 800 million (30% of the global rural population) live in the 9.5 million km² of agricultural lands (45% of total area) with >10% tree cover; 180 million in the 3.5 million km² agricultural lands with >30% tree cover; and about 350 million within or near 40 million km² of dense forests. In 2015 world leaders

will agree on a set of Sustainable Development Goals (SDGs) and set targets for simultaneous progress on poverty reduction, security of water, energy, food, diet and nutrition, climate resilience, livelihoods, governance and gender equity. They are also expected to come to a new climate agreement. Forests, trees and agroforestry (FT&A³), and their integration at the landscape scale, are key to progress on all these counts. FTA conducts research that enables continued improvement and better integration of forest and agricultural production while protecting and enhancing the resource base, shifting the historical trajectory away from a "doomsday scenario" of production and environmental collapse (Fig. 1). Via its six IDOs, FTA makes a major contribution to SLO4, adding a critical sustainability dimension to support progress in the other three SLOs. FTA will contribute to the achievement of several of the post-2015 SDGs.

We believe that salient, credible and legitimate science, considering gender and other social differences, that engages with stakeholders is crucial to inform and facilitate more effective policies and practices in the forest and agroforestry realms. FTA partners with many major international and national forestry and agriculture research, development and conservation organizations to define and research priority forest and agroforestry issues and co-generate knowledge. These interactions contribute directly to changing knowledge, attitudes and skills of all partners, and facilitate improved practice. We work to achieve positive outcomes at the case- and local-scales as well as generalizable lessons and recommendations for scaling up and out. Our overall theory of change⁴ shows how these changes are intended to: generate, supply and facilitate adoption of technological innovations tailored to the contexts where we operate; influence policy; improve forest and agroforestry market functions; and support institutional change within complex systems. Our ToC, like all such evaluative frameworks, is a live and dynamic framework and will be constantly updated; we are committed to developing it further as an integral element of the overall research portfolio. More details on making the theory of change a research topic within FTA can be found in Annex 2 and the management response to the IEA recommendations⁵.

By nature and necessity we work in many countries (see Annex 4), involving commodities and services representing very different situations, making FTA a large complex program. The forest transition curve provides a framework that helps us identify spatial and temporal patterns and drivers of tree cover change, as well as their consequences and stakeholders, options and alternatives, and institutions and incentives for leverage on tradeoffs. Changes in forest cover have multiple levels of causation ('drivers') and entry points for change. At the national scale (Fig. 2 left), the variation in reported forest cover is strongly associated with the human population density. Our Sentinel Landscapes sample countries, with 25%-80% forest cover, span several critical ecoregions (Annex 4). A single "country" point, however, includes a wide diversity at local scales (Fig. 2 right); FTA also explores this within country diversity as a basis for analysis and policy/practice options and recommendations allowing the importance of contexts to be assessed.

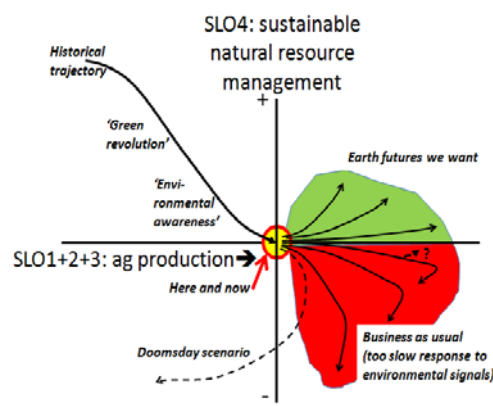


Fig. 1. Tradeoffs between high-level goals define the challenge for 'sustainable development'

³ While FTA stands for the CGIAR research program on forests, trees and Agroforestry, FT&A refers to the issues of forests, trees and agroforestry more widely

⁴ See current internal working draft TOC: <http://tinyurl.com/FTA-TOC-UPDATE>

⁵ See FTA response to IEA recommendations:

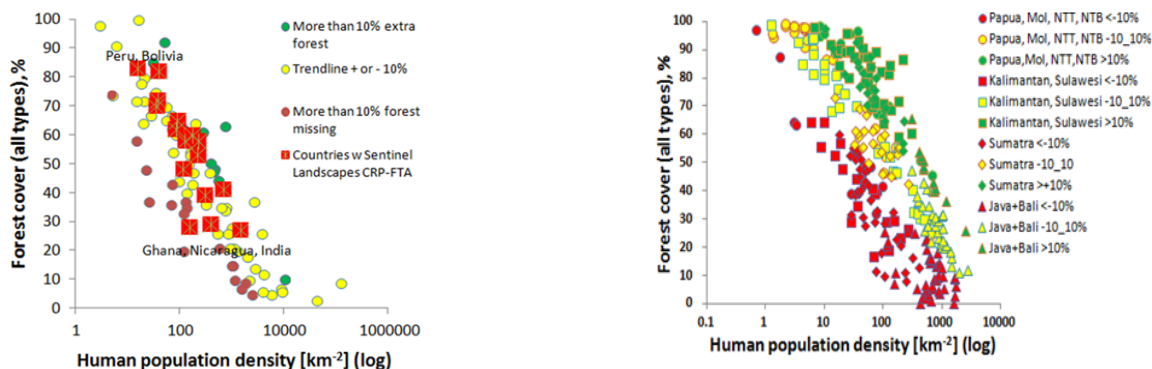


Fig. 2. Variation in forest cover at the national (left) and subnational (right) scales in relation to human population density. Left Global data set (see GLP news 2014); Right: 300 districts in Indonesia (update from Murdiyarso et al., 2005)

“Landscape approaches” are now used by many major organizations and agencies specialized in food production and poverty alleviation thanks to the recognition that ecosystems and humans are integrated parts of complex social-ecological systems. These approaches are inherently complex and dynamic, as opposed to approaches with clearly - bounded spatial entities. People, in various forms of social organizations, shape the landscape and its natural resource base while their options are essentially bound by both the potential of the land and these resources as well as the prevailing natural resource governance system. Changing the trajectory of a landscape implies a change in the behavior of the key actors within that landscape and thus requires the identification of successful leverage points and negotiated approaches.

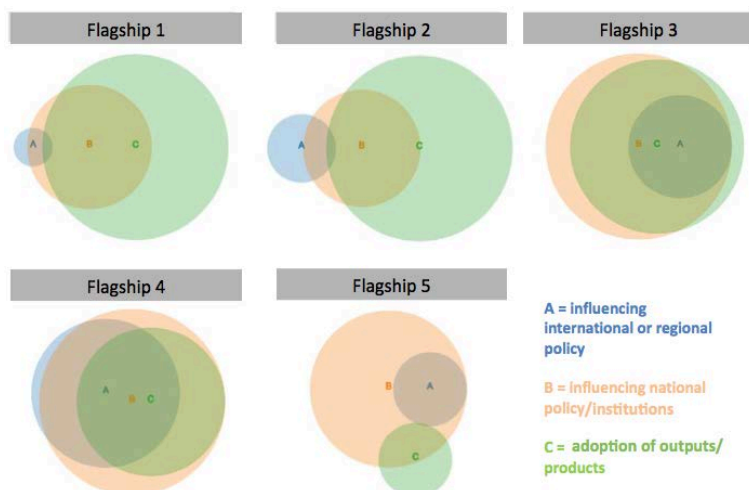


Fig 3. FTA Flagships’ use of three principal impact pathways.

Having defined, where relevant, place-based objectives, the FTA theory of change (ToC) is further actualized through interlinked FP-specific main impact pathways (IP) to suit specific objectives, locations, actors and approaches (Fig 3). IP1 informs and influences international and regional policy processes; IP2 informs and influences national policy processes, organizations and institutions; and IP3 concerns the adoption of outputs (approaches, technical innovations, tangible products).

FTA has two specific ToC (beyond the generic one about producing salient, relevant science) depending on the targeted impact pathway: one concerns the adoption of outputs; the other relates to the “messy” process of influencing policies.

ToC (IP3): In any given location, farmers/managers face a matrix of options and contexts; e.g., soils, climate, farming system, planting niche, resource availability and institutions. These options will be different /need to be adapted for different contexts. This is where the concept of “research-in-development” becomes useful; working within development projects allows us to influence implementers so that nested-scale planned comparisons are made of a sufficient range of options across a sufficient range of contexts generating a more comprehensive understanding of the cost effectiveness of different combinations allowing both scaling out and scaling up. For example, FTA co-generation of options and promotion of fertilizer trees in over 120,000 farm households in Southern Africa has resulted in 11-14% higher yields, equating to an increased grain yield of 200 kg ha⁻¹ yr⁻¹, more than enough extra grain to feed a child for a year (IDOs 2, 4, 5).

ToC (IP1, IP2): Decisions and policies about FT&A resources at farm, landscape, national and global levels are constrained by: a) inadequate diagnosis of the patterns and drivers; b) incomplete recognition of consequences and stakeholders; c) restricted sets of options and alternatives; and d) inadequate institutional set-ups and capacities as well as incentives for leverage on tradeoffs. With a coherent approach focusing on these four constraints, covering the whole policy development cycle, we inform policy development and can unlock ‘learning landscapes’ that manage change. Using these IPs, FTA provided advice to the Chinese National Forest Economics and Development Research Center (FEDRC) to enhance the monitoring and evaluation of the Conversion of Cropland to Forest Program (CCFP),

which involves over 32 million households, generating decisions to revise household payments for environmental services. FTA's stepwise approach to national emissions reference level reporting was taken up as a UNFCCC decision in 2012; emissions factors for peat lands, developed by FTA, have been used in the 2013 IPCC Guidelines for Wetlands (IDOs 1, 6).

IDO 1: Policies supporting improved livelihoods and sustainable and equitable resource management are adopted at global, national and local scales. At the household level and landscape scale, our research results in reduced transaction costs and better opportunities for smallholder investments in community-based commercial forestry and agroforestry (FP1), improved forest management and restoration practices (FP2), better land use regulations (FP3, FP5), sustainability standards that enhance responsible investments, while defending local actor's rights (FP1, FP5). At the global scale, our work on climate change mitigation and adaptation contributes to efficient, effective and equitable agreements for REDD+ under the UNFCCC (FP4), global trade and sustainability platforms (FP5), and conservation and sustainable use of FT&A biodiversity under the CBD (FP2). Our contribution to international agreements and national policies can also facilitate equitable and efficient payment for environmental services and options for low emissions development (FP3, FP4).

IDO 2: Greater gender equity and women's empowerment is achieved in decision-making and control over forest, tree and agroforestry resource use. FP1 and FP2 work on understanding gendered impacts of forest resource loss or use as well as training on adaptive collaborative management that can help shift gender dynamics, increasing women's participation in and benefits from forest and tree management and restoration. FP3, FP4 and FP5 study gender differences and intra-household power balances, food and nutritional security, preference over environmental services, vulnerability to climate change and socio-economic impacts of large-scale investments. These research outputs support the design and implementation of gender-sensitive policies and reforms.

IDO 3: Enhanced income from goods and services is derived from forestry and agroforestry systems. FTA contributes to increased income through informed policies (IDO1) and better market access for FTA products such as cocoa, palm oil, timber or brazil nuts, via more inclusive business models and value chains, leveling the playing field between large and smallholders (FP1, FP5). Increased income is also generated by providing technical options for higher productivity systems (IDO5), tools, methods and knowledge that contribute to improved investments and management systems for FT&A resources (FP1, FP2).

IDO 4: Increased and stable access to nutritious food. In different forest and tree cover transition contexts (FP3) we are raising the profile and realizing the potential of FT&A for food security and nutrition by promoting diversified production systems and certification of specific commodities (e.g., cocoa or coffee in FP1), improved seeds and crops (FP2) and better characterization of the importance and sustainable management of wild foods and wood energy (FP2). The wider adoption of trees on farm (FP1) also contributes directly to household food security throughout the year while improving income (IDO3) and gender equality (IDO2).

IDO 5: Production of wood, food, fuel and other products from forestry and agroforestry systems is increased. FP1 and FP2 contribute to increased productivity by providing context specific technology options, improved investment and management systems for smallholders across several important value chains; i.e., timber, non-timber forest products, bushmeat, tree crops, wood energy and more generally a whole suite of products from agroforestry systems. In addition, characterized and conserved tree and crop genetic resources (FP2) allow FT&A managers and farmers to obtain improved yields from selected planting materials.

IDO 6: Biodiversity and ecosystem services (including climate regulation) from forests, trees and agroforestry resources are conserved or improved. All FTA work is carried out with sight as a major and specific contribution of our program to SLO4 within the CGIAR. Progress and achievements across all the above IDOs will contribute indirectly towards IDO 6. Improved management (FP2) of forest resources for wood based products (timber, wood energy) results in less degraded more C-rich systems. Promotion of trees on farms via context specific agroforestry systems (FP1) will create more C-rich farms and landscapes. Diversified forest management and conservation (FP2) will ensure biodiversity, from genes to populations is available for current and future use. Contributions to a new climate agreement (IDO1) involving forests and agriculture (REDD+, joint mitigation and adaptation) will potentially affect 1 billion ha of forests, significantly reducing deforestation and greenhouse gas emissions (FP4). This reduction in deforestation is complemented by progress on governance mechanisms for sustainable land use and forest management, including corporate sustainability initiatives, timber legality and law enforcement (FP5), and more generally policy frameworks, valuation options, land use planning tools and low emission development schemes that recognize different incentives in ecosystem services, ensuring equitable, effective and efficient payment mechanisms for forest-dependent communities, farmers and the private sector (FP3, FP4).

The table below shows the IDO⁶ indicators and FTA aspirational targets in 2025. The targets were first estimated at each flagship level in consultation with our key partners, before being aggregated at the FTA level based on the experience of the first three years of operation.

IDO	Indicator	Aspirational target for 2025	Potential verification tool	FP
1	Number of policies influenced	At least 50 FT&A related policies in 30 countries designed following uptake of and influence from FTA research products	Policy analysis; targeted interviews; ex-ante and ex-post impact studies	1,2,3,4,5
2	Proportion of women in FT&A management decision making and control	At least 25% of women members in FT&A management and decision making institutions in 5 countries	Household surveys; targeted interviews	1,2,3,4,5
3	Income from FT&A value chains	A 20% income increase for 5 million smallholder forest and plantation owners, and a 5% increase for 34 million people in forest-dependent communities – a minimum of 25% of the generated income is received or controlled by women	General equilibrium macroeconomic models; household surveys; national statistics offices; ex-post impact studies	1,2,5
4	Number of food insecure months Dietary diversity contributions of FT&A resources	A 20% reduction in food insecure months thanks to tree-based systems on farms in 10 countries, helping c. 7 million people Increased or maintained dietary diversity for 90 million people via access to FT&A diversified food sources (NTPFs domesticated or not)	Household surveys; national statistics offices; ex-post impact studies	1,2,3
5	Annual production of FT&A commodities	Increase in: <ul style="list-style-type: none"> Smallholder food crop productivity over 11 million ha Total factor productivity by up to 30% for 10.5 million smallholder farmers Tree-crop system productivity by 75% over 450,000 ha and by 50% over 1.25 million ha. Livestock productivity by 25% for 2 million smallholder farmers Sustainably managed wood energy production by 25% in five countries Certified timber production by 20% in five timber producing countries 	General equilibrium macroeconomic models; household surveys; national statistics offices; ex-post adoption and impact studies	1,2,5
6	Area of avoided deforestation and degradation	One billion ha of forests under efficient, equitable and effective REDD+ mechanism with 0.5-1.7 million hectares of avoided deforestation, sustainable management practices adopted in at least 30 million hectares of forests and emissions reduced by 0.16 (carbon) and 0.68 (CO ₂) Gt annually.	Global forest models and remote sensing monitoring platforms; national statistics; ex-post adoption and impact studies	1,2,3,4,5

2. Flagship projects

Through its portfolio of projects, FTA has played an important role in reaching CGIAR goals seeking to solve evolving global, regional and national forestry and agroforestry-related challenges. A programmatic approach, which builds on the lessons learned about the management and use of forests, agroforestry and tree genetic resources across landscapes, has been developed for the extension phase. In preparation for 2017, we are optimizing our research portfolio to address the global challenges of forest and biodiversity losses, inappropriate governance and the sub-optimal contribution of FT&A to sustained livelihoods and climate change. For 2015-2016, we propose (Fig. 5) five high-potential Flagship Programs (FPs) through which we can make immediate and lasting impact, working across

⁶ The discussion on IDOs and indicators is still on going at the system level as we speak so the present ones might change in the coming months

three main dimensions (household/smallholders, landscapes and global governance) supported by cross-cutting themes (gender, partnership, capacity development and communication). This new configuration emphasizes intersections/collaborations between FPs and solves the perceived overlapping issues.

To ensure greater integration and to remove management complexities we have integrated the Sentinel Landscapes within FPs (TmFO with FP2, Global oil palm value chain with FP5, and the six geographically bounded SLs with FP3). The cross-cutting nature of the SL network remains but with the characterization phase almost completed (leading

to specific knowledge products in 2015), the utility of this high resolution meta-data set will be tested by co-location of place based research activities of FPs and CRPs.

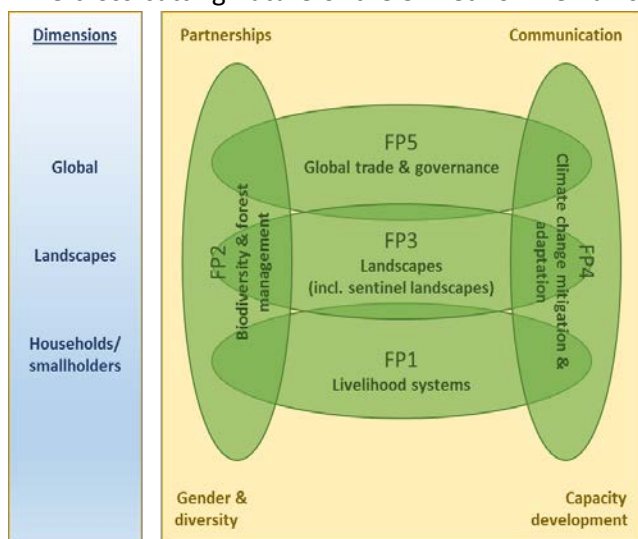


Fig 4. FTA Flagships structure in the 2015-2016 extension phase

Recognizing the importance of tenure and rights as an emerging cross-cutting issue (relevant to all FPs) and the need to keep structures simple, we propose: i) to include the work on tenure and rights as a cluster of activities (CA) in FP5 seeking consistency with other work on global governance in its intersection with all FPs; and ii) that this CA plays a key cross-cutting and cross-CRP role backstopping work on tenure and rights across all FPs, aimed at producing IPGs on the subject, and developing a program of work for inter-CRP collaboration with PIM in their Flagship on “Property right regimes for management on natural resources and assets”.

Flagship 1: Enhancing how trees and forests contribute to smallholder livelihoods

We believe that more and better managed tree cover on farms can significantly improve smallholders’ livelihoods via increased production, reducing periods of food insecurity, diversifying diet and additional income. We address rural poverty and hunger, linked with ecosystem degradation, focusing on using trees to improve the economic and environmental sustainability of smallholder livelihood systems through four main research areas: a) enhancing sustainable productivity, food security and nutrition through better management of tree resources; b) increasing income from agroforestry products through better market function and extension; c) increasing equity and access to benefits from trees; and d) improving the efficiency and effectiveness of how FP1 delivers benefits through impact analyses.

We use innovative extension approaches to foster entrepreneurship and innovation, and take advantage of existing agroforestry knowledge and technology by using leverage points in the FP as conduits to actively include key partners (National Agricultural Research and Extension Systems (NARES), NGOs, national and local governments and their associated institutions, but also international certification bodies as well as the private sector). Building on progress in Phase 1 in developing and matching tree management and extension options to sites and circumstances, the functioning of markets, and institutional barriers to smallholders benefiting from these, in the extension phase we aim to accelerate impact by addressing these factors within a research ‘in’ development paradigm, developed with Dryland Systems and Humidtropics, that uses planned comparisons to research the cost-effectiveness of alternative development options at scale to achieve impact. We are moving beyond smallholder typologies to address fine scale variation in context that affects suitability of options across large scaling domains and to initiate demand-led feedback loops for underpinning research on agroforestry products. In 2015-2016, we aim to have co-learning communities of practice operating in four countries including Peru (Amazon), Mali, Ethiopia and Kenya.

In keeping with this central development, we will intensify our work on gender, focusing on gender transformative outcomes where women are more involved in decision making about management of tree resources, and with FP5 and PIM on tenure, particularly related to tree crop rejuvenation, migration and land-use decisions. We focus on development of breeding strategies for tree germplasm and functional diversity of agroforestry practices, together with refining our understanding of how trees improve soil health, as components of livelihood resilience. We co-locate with Dryland Systems using trees to improve food security in Mali, Burkina Faso, Kenya, Malawi and Ethiopia; and, with Humidtropics in the Mekong (sustainable options for sloping land in Vietnam and rubber in China), West Africa (cocoa agroforestry in Cote d’Ivoire and Cameroon) and East Africa (food security in Rwanda, Uganda and Burundi). Having identified a key implementation gap at the interface of livelihoods and landscapes, we will, together

with FP3, increase understanding of the implications of field and farm level land use decisions on trade-offs, synergies and impacts on different ecosystem services, developing evidence-based negotiation support tools to better manage these services. We will strengthen public and private sector (Mars, Unilever) partnerships at national and regional levels in developing co-learning frameworks, together with government and NGO sectors (World Vision, CARE, SahelEco) as well as intensify collaboration with ARIs such as Bangor University in the UK and Colorado State University in the US, on using genomics to understand impacts of trees on soil function.

Flagship 2: Forest management and conservation of biodiversity resources

Current access to and future production of forest and tree resources requires improved and equitable forest management, forest restoration and the conservation of biodiversity resources. In addressing both the increasing scarcity of and reduced access to forest resources on the part of rural people in developing countries and the opportunities to expand production through more equitable multiple resource management of forests and woodlands, as well as better use of biodiversity resources including the genetic diversity of trees, we will focus on three main research areas: a) diversified forest management; b) conservation and use of tree genetic resources; and c) forest restoration. We prioritize tree species and populations, forests and woodlands of value to people, concentrating on the FTA Sentinel Landscapes as co-location sites.

We evaluate and promote technologies and policies for better management of forest and woodlands and the resolution of conflicts over rights to their resources (in collaboration with FTA 5, Tenure); analyze the response of trees and other forest resources to harvesting, future climate change and other threats, developing strategies to address those threats, conserve their genetic resources and make them available to users; develop technologies and policy recommendations for sustainably restoring forest ecosystems. Via the Tropical managed Forest Observatory (TmFO) we quantify the effects of selective logging on forest dynamics, carbon storage, and tree species composition utilizing existing datasets from the Amazon Basin, Congo Basin, and Southeast Asia. FP2 achieves its outcomes by developing information, decision making tools and policy recommendations for conservation actors (including certification organizations), forest managers, national government agencies and regional organizations, such as COMIFAC, as well as intergovernmental organizations, including FAO and the CBD which in turn can leverage change among member nations. In addition, we produce training tools and promote capacity development to enhance the ability of professionals in developing countries to address these issues.

In 2015-2016 we will produce: a) analyses and policy recommendations for sustainable production of both timber and non-timber (food) resources for multiple stakeholders in Congo Basin timber concessions; b) policies that recognize women's roles to formalize the bushmeat value chain in the Amazon Basin; c) an evaluation of the potential of community forestry to sustain both timber production and threatened timber species while providing livelihood benefits; d) conservation strategies for priority tree species in woodlands based on understanding their genetic diversity and addressing threats; e) a virtual global cacao conservation strategy integrating regional actors to make the diversity of germplasm available to users; f) at least one regional strategy for implementing the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources; and g) tools to aid in the selection of well adapted and genetically diverse planting materials for restoring forests.

FP2 research links to that of FP1 because the resources we sustain and conserve are inputs to livelihood systems; to FP3 because forests and woodlands are key portions of the landscapes they study; to FP4 because the response and adaptation potential of trees is crucial to the capacity of forests to continue to adapt to and mitigate climate change; and with FP5 because our research on genetic and isotopic fingerprints for timber species and origins is a tool for reducing illegal logging.

Much of the research in FP 2 focuses on the world's major tropical forests, notably in the Congo Basin region (Cameroon, Gabon, DRC), the Amazon (Colombia, Peru, Brazil) and Mesoamerica (Nicaragua, Guatemala). In addition, research is carried out in the dry woodlands of Africa (Burkina Faso, Mozambique) where local people are highly dependent on tree resources. Research on the conservation and use of tree genetic resources also focuses on additional areas that are important for tree biodiversity: Central Asia (Uzbekistan, Kyrgyzstan, Tajikistan) as a global center of diversity of fruit and nut trees; and countries in Africa, the Americas and Southeast Asia (Costa Rica, Cote D'Ivoire and Melanesia) offering important collaboration for the conservation and use of cacao and coconut.

Flagship 3 Landscape management for achieving sustainable development goals (incl. Sentinel Landscapes)

We believe that multi-functional and dynamic landscapes are the appropriate places for testing and implementing integration of conservation and development, balancing immediate local benefits from environmental services and long-term importance of biodiversity and other forms of natural capital. Building on results and achievements of phase 1, in 2015-2016 we will further contribute to proactive landscape management to achieve sustainable development goals, recognizing the unavoidable tradeoffs, through four main research areas: a) understanding patterns and drivers of forest (tree cover) transition in decline and restoration phases ; b) understanding consequences of tree cover transition for livelihoods, environmental goods and services & adaptive policy; c) supporting action research in 'Learning Landscapes' where new incentive systems and governance arrangements are being tested; and d) recognition, in relevant policies, of the contributions of FT&A to food security at the landscape level across forest transition stages. Our goal is that landscape level actors and managers are better equipped with reliable information on current status, consequences and alternative options, as well as negotiation skills to link knowledge with action. At national and global scale, a more supportive policy environment will be needed with realistic expectations of which issues can be dealt with at a landscape scale. The discussion of Sustainable Development Goals, and especially the interface between the various goals and commitments, will increase the demand for integrative and inclusive approaches at landscape scale. It is in the nature of the landscape scale, and thus of FP3, that it integrates across the multiple objectives and stakeholders, both inside and outside the landscape.

We follow the steps of diagnosis of existing patterns of forest and tree cover, analysis of positive and negative consequences, exploration of alternative scenarios, and the multi-stakeholder negotiation processes. We derive replicable tools from engagement on the ground and use these in South-South exchanges to advance learning and uptake. We share with FP1 a focus on household decision making as a basis for landscape change, interacting with external investments and governance interventions towards a green economy explored in FP5. We enrich our understanding of landscape dynamics interacting with biodiversity conservation in FP2 and with climate change mitigation-adaptation in FP4.

We focus on the interactions of science, local and public/policy knowledge systems, with synthetic products for tradeoff analysis, visualization of options and scenarios, and negotiation support processes. We see landscapes at the heart of FTA. Unlike learning landscapes, where targeted action research is focused on changing the trajectory of a part of a landscape, the Sentinel Landscapes are aiming at informing intervention options based on an understanding of the drivers of actors' behaviors. Managing the tradeoffs between the aspirations of an individual land user and the long-term sustainable communal utility of land requires both an understanding of the specificity of landscape level processes, such as the feedback loops between social organizations and ecosystem responses, and the factors and processes that lead to the behavior of individual actors. Our data collection tools have been developed with partners outside the CGIAR, combining Ostrom's Institutional Analysis and Development Framework with the frameworks derived from the Long Term Ecological Research work (LTER). As such the Sentinel Landscape network is not only collecting a dataset of relevance to global development questions, but also testing the feasibility of the landscape approach while offering practical indicators that measure landscape level processes.

Flagship 4 Climate change adaptation and mitigation using FT&A

We believe that it is possible to reduce GHG emissions by developing and implementing efficient, effective and equitable mechanisms harnessing the role of FT&A resources to adapt to and mitigate climate change. We continue supporting policy frameworks regulating the role of FT&A in climate change mitigation and the adaptation of people and forests to climate change. We contribute significantly to the development of efficient, effective, and equitable (3E+) policy frameworks that also supply co-benefits beyond carbon⁷. Our vision is that: a) forests are key in global mitigation efforts within the larger AFOLU package, and REDD+ is a potentially powerful mitigation mechanism close to successful implementation; b) adaptation is needed for continued mitigation as climate change is expected to be driven by sectors external to FT&A; c) integrating mitigation and adaptation efforts into coherent approaches that consider synergies and trade-offs will increase the efficiency and effectiveness of responses to climate change. The UNFCCC COP in Warsaw has moved forward with REDD+ policy decisions. A major international climate agreement is hoped for in Paris 2015, with REDD+ expected to be part of that package. This gives us the context to continue our widely acknowledged research on REDD+ as a key mitigation option, currently in support of the international pre-Paris debate, but re-focusing our work to underpin national REDD+ implementation in the period 2016-2020.

⁷ Co-benefits are the sustainable development, livelihoods, conservation and ecosystem services dealt with in the non-climate flagships in FTA

We work with carefully selected partners for: a) the joint formulation of researchable questions (e.g., with NORAD as a major donor); b) joint production of science (for example, policy research by country teams using a common sampling methodology); and c) dissemination. We interact very closely with the UNFCCC, regional and international bodies (COMESA, COMIFAC, the Governor's Climate and Forests Task Force - GCF), and national partners. We provide policy makers with very practical, empirical guidance on what works and what does not, and the underlying reasons (e.g., from our comparative study of REDD+ implementation on the ground). We do not engage directly in policy design but provide scientifically backed options for partners to choose from according to their circumstances and capacities. This places the command of policy implementation firmly in their own hands. We study: a) REDD+ governance, policy frameworks, the role of policy coalitions and the legitimacy of actors; b) policy performance and design including multilevel challenges to implementation; and c) REDD+ finance comparatively in 15 countries, now expanding into Laos and Mexico.

In 2015-2016 we will conclude our rigorous comparative assessment of carbon effectiveness, cost efficiency, distributional equity, gender aspects and co-benefits of REDD+ at 22 sub-national REDD+ sites. We will continue developing efficient methods, tools and high-resolution data on forest reference levels and carbon measuring, reporting and verification (MRV) for global forest observation and national carbon accounting systems. In collaboration with FP1, FP2, FP5 and CCAFS we will expand our work on drivers and consequences of forest degradation (e.g., fire resilience in Borneo and triggers of peatland fires in Sumatra, quantifying emissions, social and health consequences). We continue building research networks and developing baseline data in tropical wetlands (peatlands; mangroves). We develop landscape level carbon management approaches (e.g., participatory scenario building), and we will test landscape level planning tools at the provincial level, notably in Peru, Indonesia and Mexico (interfacing with FP3). Much of our new research will be specifically supporting country-level REDD+ and adaptation policy implementation. This includes multilevel governance challenges, safeguard information systems, benefit sharing, the use of climate information in National Adaptation Plans, and contributions to the debate on Joint Mitigation and Adaptation (JMA). We will address synergies between mitigation and adaptation action and finance (e.g., applicability of a mix of economic instruments; potential for market-based instruments to integrate ecosystem services) continuing our already productive work at the FP4-FP5 interface. We study synergies, including ecosystem services, social vulnerability and gender aspects, in the Congo Basin, Eastern Africa, and Latin America. We work on conservation policies in Brazil and on gender, adaptation and ecosystem services in the Sahel.

FP4 differs from CCAFS on a variety of issues. While FTA is more focused on FT&A related climate mitigation policy development, CCAFS emphasizes the food security and adaptation through climate smart agricultural technologies and policies. Both converge where agriculture becomes the major driver of deforestation. As the landscape becomes more central to our work, we expand cooperation with CCAFS on a variety of issues (outlined in Annex 3) and work towards a joint contribution to the UNFCCC Agriculture Roadmap. FP4 has also initiated a debate on the links between REDD+ and the broader agenda of Low Emissions Development Strategies (LEDS) and Green Economy development pathways. We have become very strongly engaged with the incipient AFOLU work group under the Global LEDS Partnership.

Flagship 5 – Global Governance, Trade and Investment

We support the development of global governance systems embracing transnational and national state-driven regulations, and non-state and multi-stakeholder processes (e.g., certification, roundtables, codes of conduct), in their interactions at multiple levels, aiming at reducing the negative social and environmental impacts of investments associated with expanding national and international demand for food, feed, fiber and energy. Our vision is a corporate sector better equipped to adopt sustainable business models and supply chains that are more inclusive of smallholders, and an increased accountability of investment outcomes. This will be facilitated by improved international principles, guidelines and sustainability standards, and transnational and national regulations, in ways that more effectively foster responsible investments, reducing the pressures from trade and investments on forests, while simultaneously improving their contribution to inclusive green growth.

We work along three research areas: a) investment strategies and business models; b) governance systems and institutional arrangements; and c) securing tenure and rights of resource users. The first focuses on the opportunities for enhancing the social and environmental performance of investments and the conditions under which diverse corporate strategies and business models (e.g., industrial plantations, contract farming schemes, and co-management arrangements) lead to improved socio-economic benefits with reduced impacts on forests. The oil palm sentinel landscape (FP 3) complements this work by understanding business models and value chain configurations

across diverse biophysical, socio-economic and institutional settings. The second research area focuses on the effectiveness of different regulatory instruments and institutional systems in promoting responsible investments and the scope for more articulated regulations and arrangements, involving hard and soft initiatives, to promote sustainable land use, enhancing local participation in global markets, and protecting tenure and labor rights. The third research area focuses mainly on identifying innovative mechanisms for resolving conflicting claims, assessing institutional arrangements, collective action and coordination for tenure security, and strengthening women's rights to resources.

Our impact pathways work at different levels. First, we link with investors, corporations and sustainability platforms in sectors that place pressures on forests (e.g., oil palm, soy, beef, pulp and paper), supporting business models and practices that lead to improved social and economic outcomes and reduced environmental damage, also exploring barriers and opportunities for their adoption. Second, we engage with transnational and regional initiatives (e.g., FLEGT) and multi-stakeholder processes (e.g., FSC, RSPO) on ways to enhance their effectiveness in achieving higher inclusiveness and sustainability. Third, we engage national and sub-national governments and state agencies, based on the identification of policy failures and regulatory gaps, to support ways to increase the integration between public regulations and private standards, and contribute to efforts in specific landscapes to make public-private arrangements operational.

In 2015-2016, our ambition is that large-scale investors in at least three countries (Mozambique, Indonesia, Brazil) will consider the adoption of more sustainable business models considering improving gender equity and smallholders involvement, with a focus on select commodities (e.g., timber, oil palm, beef, cocoa). Building on established networks and multi-stakeholder platforms, we will engage selected investors in these countries in order to support responsible investment practices, innovative public-private arrangements for expanding sustainable supply, and upscale business models and strategies that generate tangible co-benefits. We will continue supporting EU efforts and national-level initiatives in key producer countries to promote legal timber supply but minimizing undesirable social effects on local forest users, and initiatives to improve the alignment between international and national sustainability standards, such as in the palm oil sector in Indonesia, and for transposing international principles on responsible investment into national strategies and policies. We will engage actively in research and debates on tenure and property rights, aimed at enhancing the sustainability and livelihoods impacts of property rights, with a focus on Indonesia, Peru and Uganda. We will continue our engagement in global coalitions for broader policy impact such as the Rights and Resources Initiative (RRI), the International Land Coalition (ILC), and FAO guidelines on the responsible governance of tenure. The latter processes span global, regional and national pathways of influence, action and impact. We are also increasing our collaboration with CCAFS via jointly funded projects about low emission economy of global value chains (oil palm, soya bean, beef).

3. Gender

In the research agenda

The Gender Integration Team (GIT) supports FTA in achieving salient, legitimate, credible science that covers women and men's different interests, needs and experiences and that supports transformative change towards gender equality. We recognize that without serious attempts to integrate gender considerations in research and action, it is highly unlikely that FTA would be able to contribute to gender-sensitive outcomes and indications. Integration of a gender focus within FTA partners does not mechanically translate into gender-related outcomes and impacts, and the knowledge and innovations produced by each FP as well as the development of strategic gender research play an important role in the achievement of the Gender IDO. Within this framework the GIT will strengthen its work on:

a) Enhancing the integration of gender in research across FTA by:

- Developing the capacity of scientists and research partners to integrate gender in all stages of the research cycle, through a number of convening workshops planned at regional levels combined with tailored support to each of the FP and teams.
- Promoting the use of gender-responsive participatory research methods, as outlined in our FTA gender strategy, which will facilitate direct dissemination of results to end users.
- Implementing an M&E plan for gender integration, rolling out of the Gender Equality in Research Scale (GEIRS), a tool assessing gender relevance and integration in research for all current and new FTA projects. GEIRS will enable projects to be ranked according to their level of gender responsiveness ("Gender Specific", "Gender Integrated", "Not Gender Research" etc.). GEIRS can also guide in distinguishing gender sensitive from gender transformative

projects, thus providing FTA with enhanced understanding of its current portfolio with regard to gender integration. This in turn facilitates more effective targeting of projects in need of support for gender disaggregated data collection, data analysis, publishing gender-related findings, and communicating those findings in appropriate ways. GEIRS will prompt researchers to carefully consider gender implications across the different stages of the research cycle. Minimum standards put in place across the FTA for collection of gender sensitive data will help facilitate collaboration between FPs, as sex-disaggregated datasets can be used and refined along the way. Following the Consortium recommendations⁸, FTA should expect 20% of its research across the 5 flagships to be gender specific and 60% to be gender integrated, as identified by GEIRS, by 2016.

- b) Prioritizing and increasing the number of strategic gender research questions: Conducting strategic gender research at a range of scales, as recommended by the CGIAR Gender and Agriculture Research Network, also feeds into the Common Gender and Empowerment IDO. Women’s control over resources and their participation in decision-making are issues that are also relevant to all FPs. Some examples of such initiatives are:
- Cross-CRP research on gender and value chains in partnership with Wageningen University, including a cross-country and comparative study on gender and value chains (FP 1).
 - Supporting the development of gender modules in the Sentinel Landscapes and ensuring that each SL team is well equipped to collect and analyze gender-disaggregated data (FP 3).
 - Participating in the CGIAR wide comparative study on the role of gender norms in agriculture and NRM innovation. The resulting methodology will be adapted to investigate some of the emerging concerns such as the differentiated impacts of large-scale land investments on forested landscapes and livelihoods of women and men in South East Asia (FP 5).
- c) Strengthening partnerships with gender/NRM intermediaries and knowledge brokers to enhance the sharing, uptake and use of gender-related knowledge products by next and end users. This includes the publication and dissemination of tools and guidelines for gender analysis; innovative use of various social media to disseminate CRP FTA research centers, and partners’ gender related activities and achievements; sharing of research findings and policy implications at high profile academic and policy platforms including the Global Landscapes Forum and IUFRO World Congress 2014; influence of research on forestry and NRM curriculum design and others.

In the workplace

Since the beginning of FTA, both the number of female researchers and the diversity of researchers working in FTA have steadily increased. By the end of 2016, our objective is to improve by c. 10% on the current numbers, which stand at 17% in the Steering Committee and 33% in FTA management. We aim at achieving parity in Centers’ research/support staff involved in FTA and the current status summarized below shows significant progress.

	Female	Male	TOTAL	F/M
Director/Team Leader	5	6	11	45%
Principal/Senior Scientist	11	19	30	37%
Scientist	15.5	23	38.5	40%
Post-doc / Research fellows	11	13	24	46%
Other scientific and support staff	54	80	134	40%
TOTAL FTA	96.5	141	237.5	41%

4. Partnerships

FTA brings together a wide range of diverse partners, essential for the success of the program⁹. We recognize three partnership types: a) research partners are science-oriented organizations that participate directly in the formulation or implementation of our research agenda; b) partners in policy and practice are our immediate clients for our results, assessing applicability, next-generation issues and taking actions that yield outcomes; and c) knowledge-sharing partners who focus on communications and/or capacity development and help translate research results into accessible knowledge and disseminate it to larger-scale target audiences.

⁸ First Consortium Gender and Diversity Report. March 19, 2014

⁹ CRP6 document approved version Feb 2011, pp 200-207

Most of our scientific outputs are based on partnerships and one third of our more than 1,500 publications (c. 650 ISI) are produced with developing country partners. During 2012-2014 we developed or reinforced strategic long-term research partnerships with major ARIs and universities. Well established partnerships include: a) CIRAD/AGROPOLIS, Wageningen and Utrecht Universities, concentrating major agro-food system research capacity in Europe; and b) Columbia University, Michigan University and ETH Zurich, offering cutting edge modeling capacities and complementary social science expertise. They will be complemented in 2015-2016 with other strategically important university partnerships (e.g., University of Bonn). We will also develop a closer partnership with FutureEarth¹⁰ regarding FP3 (including Sentinel Landscapes) Global Land Project¹¹ for FP 5 The Sentinel Landscapes¹² network allowed us to develop research and data-sharing partnerships with existing long term monitoring networks like IFRI, In-Depth AfSys, Lsms and IMFN. By linking our research with the longitudinal health and demographic surveillance data of the INDEPTH network we expect to deliver nuanced multidisciplinary analysis, beyond anecdotal evidence, of health-environment relationships that will advance knowledge on the complex relationships between environmental health, agroforestry and natural resource use, food security and health outcomes, such as nutrition, child survival and child growth.

Within each of our sentinel landscapes, we have emphasized building and nurturing a network of committed research and civil society partners, with the explicit additional objective of informing them about FTA, as a foundation for long term collaboration within and beyond the Sentinel Landscape. Active collaboration with local universities is facilitating relationships with faculty members and sequential generations of students.

Through the ASB-Partnership for Tropical Forest Margins we maintain close cooperation with national partners in key countries (Peru, Brazil, Cameroon, Indonesia, Viet Nam, Philippines). Collaboration with National Agricultural Research Systems is integral to our research. They provide the necessary grounding in disparate regional and national contexts. They integrate students from national universities, many of whom receive graduate degrees for research carried out within our projects, co-supervised by FTA scientists. This “co-production of science” involves these partners from the start and constitutes an important part of our delivery strategy. We work closely with some of the major NARS like FORDA (Indonesia), KARI and KEFRI (Kenya), IRAD (Cameroon), EMBRAPA (Brazil), FRIM (Malaysia)... and will continue strengthening and expanding these strategic long term in-country partnerships in 2015-2016.

In the global policy realm, our participation in the Collaborative Partnership on Forests¹³ allows us to closely interface with the 14 organizations that have a significant mandate on forests. We work directly with the CPF members providing research inputs on major issues: e.g., IUCN on landscape restoration, UNCBD on the sustainable use of biodiversity or UNFCCC on the international climate regime (REDD+, NAMAs). FAO will continue to be a major partner in moving forward with the implementation of the Global Plan of Action for Forest Genetic Resources. We also partner with policy and practice institutional networks such as the Rights and Resources Initiative (RRI) - a network of 14 organizations with the mandate to help indigenous people and local communities to secure and realize their rights to own, control and benefit from the natural resources they depend on.

In the practitioner realm we will continue providing scientific bases for the revision or implementation of standards working closely with the main certification and labeling initiatives (e.g., with FSC on certification of ecosystem services and socio-economic impacts of forest management certification; GOF-C-GOLD, VCF on climate-relevant measuring and reporting standards; RSPO on meaningful involvement of smallholders in oil palm certification). In the climate domain, we work very closely with the Governor’s Task Force, COMESA, ASEAN and other multinational network organizations and regional partnerships. We partner with global agribusiness (Mars, Nestlé or Unilever) and are exploring ways to expand our links with financial institutions, corporate groups and business platforms in order to improve the sustainability of agricultural systems and hence contribute to the livelihoods of millions of farmers associated with large-scale agriculture, national and global value chains. Mars, for example, is supporting genome sequencing of agroforestry trees, the Global Conservation Strategy for Cacao and improved markets / production technologies in Côte d’Ivoire. We are actively developing new partnerships of this type (e.g., with Danone on ecosystem services).

At country levels we are working closely with the relevant ministries and agencies as well as CSOs or NGOs (e.g., World Vision International and its country chapters in several African countries, Evergreen Agriculture Partnership...). We work very closely with the Indonesian Ministry of Forestry on their climate agenda, interacting with them in questions

¹⁰<http://www.futureearth.info/>

¹¹<http://www.globallandproject.org/>

¹²<http://www1.cifor.org/sentinel-landscapes/home.html>

¹³<http://www.cpfweb.org/73039/en/>

related to the establishment of carbon and land use reference levels and of a national carbon accounting system, and supporting the development of their website. We contribute to ongoing policy dialogues in several countries in Central Africa (Cameroon, DRC or Gabon) and others in South America (Ecuador, Peru) to improve the incentive systems for smallholders' engagement in domestic timber markets, as well as on tenure reforms in Uganda and Nicaragua. We also actively contribute to dialogues promoted by the Ministry of Environment in Brazil to link more strongly production and protection approaches.

Results and lessons learned through these activities are broadly disseminated through engagement with our knowledge-sharing partners. This includes dissemination, but also more direct engagements for capacity development with country partners. We have an agreement with Reuters AlertNet (who republish most of our blogs and reach an audience of 12 million in the development field). We maintain several important online resources, databases and webmapping tools available through various portals (FTA website¹⁴, Landscape portal¹⁵, Dataverse¹⁶, Terra-I¹⁷). We are also gradually making all our scientific publications available through green or gold open access (36% in 2012, 87% in 2013).

During our first three years we implemented a successful partnership engagement approach and FTA ranked among high performers across key partnership performance indicators in the 2012 CGIAR stakeholder perception survey. Our systematic approach to partner development has involved the careful selection of partners in the first three years of FTA, tailored to the specific needs of each flagship (e.g., adaptation and smallholder relevant agencies in FP1; climate-relevant organizations and administrations in FP4), as well as engagement with global and national level partners relevant to FTA as a whole. Building on the confidence this has generated, we can deliver research-based knowledge in the format each of them needs. The boundary partner survey carried out by the independent evaluation confirmed this high-level of satisfaction about the scientific quality but highlighted some recognition and adoption issues with important boundary institutions. In 2015-2016, systematic efforts will be made to ensure early involvement of relevant actors of strategic importance in research priority setting and design (e.g., increased outcome mapping and social network analyses), as well as at pilot/demonstration scales, ensuring a better fit of FTA targets and results with the concrete needs of development partners, including major donors. A quarter of our 2015-2016 budget will be allocated to partners, in recognition of our reliance on engaged and adequately resourced partners in order to achieve our goals. Depending on the type of partners, these funds support generating knowledge, building capacity and disseminating knowledge, etc.

After the initial phase, mainly dedicated to within-CRP program development, we are now increasing our long-term collaboration with other CRPs and Centers, such as CCAFS, WLE, Drylands, A4NH, PIM, Livestock&Fish and Humidtropics. This will be stepped up in 2015-2016 as a major way to define our competitive niche, and design the new CRP portfolio for 2017 and beyond (see also specific text in FP narratives).

CRPs	Location	Actions
FTA / CCAFS	Global	See FP4 narrative, Annex 3 about FTA and CCAFS, CRP6 accepted proposal Feb 2011 (pp. 154-159) and FTA evaluation report volume I (p.40)
FTA / CCAFS / WLE / Drylands (+ dev. partners)	Burkina Faso	Develop a pilot joint implementation platform to collaboratively plan, monitor and learn from CRPs contribution to national development pathways
FTA / A4NH (/AAS)	Various sites & global	Flagship on Nutrition Sensitive Landscapes (research on access to food trees important to diets of communities in Congo Basin, Burkina Faso, Mozambique, India, and Zambia - with AAS too)
FTA / PIM /WLE	Global	FTA related work program for the flagship on Land Tenure and Rights; Gender postdoctoral fellow
FTA/ Drylands / Humidtropics	Various sites	Participation in regional planning processes; Co-location and contributions from FP1 regarding tree-based value chains and FP2 regarding conservation and improved use of cacao diversity and fruit trees in Central Asia.
FTA / Humidtropics / L&F / CCAFS	Nicaragua	Co-location in the Nicaragua – Honduras Sentinel Landscape

¹⁴<http://foreststreesagroforestry.org/resources/>

¹⁵<http://landscapeportal.org/>

¹⁶<http://thedata.harvard.edu/dvn/dv/crp6.jsessionid=5ed88cecef95e82604b2cc24cdcc>

¹⁷<http://www.terra-i.org/terra-i.html>

Humidtropics/WLE	Mekong region	Complementarity of engagement across Mekong region; synergy on methods and partnerships
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With regard to governance arrangements, in 2013, two non-CGIAR partners (CIRAD and CATIE) formally joined our Steering Committee, significantly expanding FTA’s reach and impact delivery. For 2015-2016, in line with recommendations from the FTA evaluation¹⁸ and the CRP Governance and Management review, we will strengthen the independence of our Steering Committee with new TORs and new members to achieve better-balanced decision-making and oversight processes.

5. Regional collaborations

FTA has strong linkages to many regional integration bodies and initiatives, and has provided substantial input to the implementation of programs overseen by these multi-nation actors. We played a key role in producing the Regional Forestry Strategy and Action Plan for COMESA, which was approved by a joint meeting of the COMESA Ministers of Agriculture and Environment/ Forestry, and we plan to engage with COMESA in regional REDD+ strategy development. We are closely engaged with the East African Community and the Southern African Development Community (SADC) in framing regional FLEGT (Forest Law Enforcement Governance and Trade) programs, building the evidence for climate-smart agriculture (with CCAFS), and in a planned collaboration on climate adaptation in the SADC region. We are facilitating the development of the Africa Forestry and REDD+ frameworks under the African Union. We are leading the “research” strategic axis of the ECOWAS and COMIFAC convergence plans and are closely involved in CAADP processes. During the next two years, our ongoing partnerships with concessionaires and COMIFAC in the Congo Basin region will help us transform our research results on multiple resource/multiple stakeholder forest management into management guidelines. We are exploring opportunities for collaboration to enhance knowledge sharing of innovations on forest policy implementation with the Amazon Cooperation Treaty Organization (OTCA) in South America.

We support Forest Genetic Resources networks in Asia, Africa and Latin America (APFORGEN, SAFORGEN and LAFORGEN, respectively), which participate in research, are linked to national governments, and will play a role in promoting implementation of the FAO Global Plan of Action for the conservation and sustainable use of Forest Genetic Resources. FTA also plays a role in a major new initiative on African Orphan Crops and the recently established African Plant Breeding Academy, focused on increasing capacity in Africa, while initiatives focused on ensuring the conservation and access to valuable tree crop germplasm involve regional cocoa breeders’ groups (INGENIC) and five regional coconut networks.

One of our comparative advantages is a dense network of decentralized locations where we work closely with local partners. The FTA Sentinel Landscape initiative leverages this asset as a platform for regional partners to shape our impact pathways. This is an opportunity for local and international partners to implement multidisciplinary research and to be part of a global comparative network that seeks to address the complexities of natural resource management issues at the landscape level. For example, in FTA, CATIE uses the Nicaraguan - Honduran Sentinel Landscape, which it leads, to develop new inter-sectorial and systems R&D (“Climate Smart Territories”) with CCAFS, HT and L&F. Site co-location alongside CATIE’s own initiatives and partners (e.g., national universities and coffee institutes, CIRAD, Heifer Int., AVRDC, WCR-AID) has created a regional institutional platform recognized by the CGIAR.

Via the Sentinel Landscapes we are demonstrating that regional and global integration of research designs and findings is an important International Public Good that leads to higher impact. More than 64 partners across 20 countries were involved in shaping the Sentinel Landscape network and generating a high value data set on the health and the trajectory of landscapes. A good example is The Tropical Managed Forest Observatory¹⁹ which integrates the research efforts of 45 scientists across more than 20 organizations, utilizing nearly 1000 years of monitoring data to assess the impact of selective logging on forest dynamics, carbon storage and biodiversity. In the next phase, our partners will decide how this data set will feed into research prioritization based on ex ante impact assessment in response to evolving constraints and opportunities in their landscapes. The 20-year old ASB partnership for the Tropical Forest Margins maintains its active role in a pantropical set of learning landscapes, with direct involvement of national partners in its governance structure, connecting across multiple CRP’s (FTA, HumidTropics, CCAFS, PIM and WLE)....

¹⁸ Cf. FTA Management response to the evaluation

¹⁹<http://www.tmfo.org/>

6. Capacity Development

Through its flagship projects, FTA will continue to address capacity gaps of its partners in a number of ways. These include: a) developing future research leaders through integration of MS and PhD students from partner universities and NARIs into research projects (all FPs) and acting as a host to visiting scientists from NARIs; b) developing and delivering learning tools, content and approaches for scientific, political, managerial, practitioner's, civil society organizations' and farmer's capacity; c) undertaking collaborative research projects with NARIs involved in various FPs; d) establishing and working with co-learning communities of practice on the ground; and e) developing and testing frameworks for strengthening public-private partnerships, where appropriate.

FTA's cross-cutting capacity development support function has been introduced into this extension proposal to provide coordination support to FTA-wide capacity development activities. This function will assist FTA in developing its own capacity to systematically develop partners' capacity by providing support to FPs for: a) knowledge related capacity needs assessments of pertinent FTA partners; b) increased harmonization in capacity related policies, data management and fostering greater sharing across FTA participating centers; c) analyzing and addressing capacity development needs of FTA as a program to deliver, apply and learn from FTA generated knowledge; d) establishing systems for systematic monitoring, evaluation and learning (MEL) and research about capacity development; e) testing a model for national political level capacity development; and f) an online searchable repository on forest, trees and agroforestry learning resources. The lessons learned will be taken into consideration for the design of the Phase 2 proposal.

7. Phased workplan

Area of work	Year	Key Outputs / Deliverables	Outcomes
Flagship 1			
1.1. Enhancing sustainable productivity, food security and nutrition in smallholder livelihood systems through better management of tree and forest resources	2015	<ul style="list-style-type: none"> • Methods, approaches and databases for domestication and improvement of at least three priority tree species • Tree management options for sloping land in SE Asia and East Africa, cocoa agroforestry in West Africa, Latin America and Indonesia, food security in East and Southern Africa and coffee systems in East Africa and Latin America • Methods for developing tree intensification option x context matrices for large scaling domains (collaboration with Dryland Systems and Humidtropics) 	Baseline tree intensification option x context matrices co-developed with public / private consortia (communities of practice) in large scaling domains in at least six countries (likely Peru, Kenya, Ethiopia, Mali, Niger, Vietnam)
	2016	<ul style="list-style-type: none"> • Approaches to diversity breeding for at least four geographic scaling domains • Tree management options for soil health and functional diversity for large scaling domains in at least four countries and for oil palm intercropping in Brazil and smallholder timber in Indonesia and Peru • Methods for designing planned comparisons of the cost effectiveness of different tree intensification options across large scaling domains (collaboration with Dryland Systems and Humidtropics) 	Nested-scale planned comparisons of the cost effectiveness of different tree intensification options co-initiated across large scaling domains in at least six countries (likely Peru, Kenya, Ethiopia, Mali, Niger, Vietnam)
1.2. Increasing smallholder income from tree and forest products through better market function and extension	2015	<ul style="list-style-type: none"> • Analysis of market function and ways to improve it for at least two key tree or forest products and for large scaling domains in at least four countries (collaboration with FTA.5 and PIM) • Methods for customizing tree seed and seedling supply according to context • Methods for customizing agroforestry extension methods according to message, audience (including explicit consideration of gender and diversity) and context 	Public / private consortia in six countries (likely Indonesia, Kenya, Ethiopia, Mali, Rwanda, Peru) are informed by FTA knowledge on alternatives for value chain development, extension provision and seed and seedling supply for large scaling domains
	2016	<ul style="list-style-type: none"> • Analysis of market function for at least two additional tree or forest products and scaling domains in an additional two countries (collaboration with FTA.5 and PIM) • Priorities for planned comparison of alternative extension approaches for tree intensification options for large scaling domains in at least six countries • Priorities for planned comparison of alternative seed and seedling supply options for large scaling domains in at least six countries 	Public / private consortia in six countries (likely Indonesia, Kenya, Ethiopia, Mali, Rwanda, Peru) initiate a systematic evaluation of the cost effectiveness of alternatives for value chain development, extension provision and seed and seedling supply for large scaling domains
1.3. Increasing equity and access for smallholders to benefits from trees and forests	2015	<ul style="list-style-type: none"> • Review of barriers to smallholders accessing benefits from trees as a result of forest legislation and land tenure in relation to gender in at least four countries in collaboration with FP5 and PIM • Documentation of local knowledge related to tree management in large scaling domains in at least four countries • Development of open access toolkit for visualizing impacts of field and farm level land use decisions on multiple ecosystem services at local landscape scales (with FTA.3) 	Communities of practice in four countries (likely Peru, Kenya, Rwanda, Vietnam) use FTA knowledge in recognizing policy/institutional reform to lift barriers to sustainable and equitable tree management in large scaling domains
	2016	<ul style="list-style-type: none"> • Comparative analysis of how forest legislation and land tenure affect smallholder access to benefits from trees with explicit consideration of gender and diversity associated with migration. • Identification of knowledge requirements for realizing tree intensification in large scaling domains in at least six countries. • Proof of concept that tools for visualizing synergies and trade-offs amongst impacts of land use change on ecosystem services can improve management of ecosystem provision in at least two contrasting landscapes and country contexts 	FTA and public/private consortia conduct systematic testing of policy / institutional reform to lift barriers to sustainable and equitable tree management in large scaling domains in six countries (likely Peru, Kenya, Rwanda, Mali, Burkina Faso, Vietnam)
1.4. Improving the efficiency and	2015	<ul style="list-style-type: none"> • Impact assessment of fertilizer trees in sub-saharan Africa 	

effectiveness of how the flagship delivers benefits to smallholders through impact analyses	2016	<ul style="list-style-type: none"> Impact assessment of multifunctional agroforestry systems development in SE Asia 	Lessons from impact assessment incorporated in the design of planned comparisons of tree options in large scaling domains in at least four countries
Flagship 2			
2.1. Diversified forest management	2015	<ul style="list-style-type: none"> Guidelines for optimizing combined production of brazil nut and timber in the Amazon region Tools to predict the recovery of productivity and biodiversity after logging in the three tropical regions Guidelines for sustaining the genetic diversity of target tree species in logged forests in the Congo Basin Evaluation of the growth, population dynamics and genetic diversity of CITES-listed timber species in community-managed forests in Central America 	COMIFAC recommends to member countries FTA-informed policies and practices for timber concession management in the Congo Basin
	2016	<ul style="list-style-type: none"> Publications on approaches and tools to address wildlife management/hunting in forests Evaluation of the returns to and policy incentives for community forest management in Central America Approaches to gender-responsive resource management analyzed and tested in 5 countries DNA and isotope tool for tracking timber from its source populations to address illegal logging 	<p>Four universities in developing countries adopt three training modules developed by FTA</p> <p>National governments in three Amazonian countries adopt recommendations and promote policies to legalize hunting and bushmeat trade</p>
2.2. Conservation and use of tree genetic resources	2015	<ul style="list-style-type: none"> Regional strategies developed for implementing the Global Plan of Action for Conservation and Use of Forest Genetic Resources Threat analysis methods developed and used for priority species in Burkina Faso Conservation status of cacao landraces and traditional varieties assessed in the upper Amazon and Mesoamerica and scientific methodologies developed to assess the impact of genetic erosion of on-farm genetic diversity 	The Global Strategic Cacao Collection established as a virtual collection through collaborative actions of key actors
	2016	<ul style="list-style-type: none"> In situ and on farm cacao genetic resources conservation strategies developed Characterization of the genetic diversity and nutrient content for 3 food tree species in Central Asia and strategies for their conservation The genetic diversity of <i>Parkia biglobosa</i> characterized across its range First phase completed for hotspot analysis of genetic diversity and threats to priority agroforestry tree species for Central America Conservation strategies developed for <i>Khaya</i> species in West Africa 	Tree seed centers and development NGOs in Africa and Nepal adopt the interactive map tool produced by FTA
2.3. Forest restoration	2015-2016	<ul style="list-style-type: none"> Selection of priority species for restoration of tropical dry forest in Colombia Systematic review of past restoration efforts in establishing genetically viable populations of trees worldwide Model decision tree tool for selecting the best seed sources for restoration sites of dry forest in Colombia Policy recommendations to amend regional and national legislation on restoration in Colombia/Latin America Capacity building case study for training module on incorporating genetic principles in restoration practices 	Key actors in global restoration efforts adopt FTA-informed guidelines for selecting, collecting and managing well adapted and genetically diverse planting materials
Flagship 3			
3.1. Understanding patterns and drivers of forest (tree cover) transition in decline and restoration phases	2015-2016	<ul style="list-style-type: none"> Empirical data sets of quantitative and qualitative tree cover transitions across major eco-climatic zones Empirical data on changes in spatial pattern of tree cover within landscapes (incl. Sentinel Landscape biophysical characterization) Methods for monitoring and quantifying tree cover refined and linked to data uncertainty (incl. tool development for Sentinel Landscapes) Proximate and ultimate drivers of land use and tree cover change: inference from spatial patterns, macro-economic statistics and bottom-up driver info Policy levers and negotiation opportunities to influence drivers of tree cover transitions, rehabilitation & agroforestation 	National agencies in at least five countries responsible for CBD, UNCCD and UNFCCC conventions use FTA analysis and data on changes in tree cover inside and outside forest and its likely consequences for ecosystem services and human nutrition in green accounting procedures, and reporting of and planning for national commitments to related SDGs

3.2. Understanding consequences of tree cover transition for livelihoods, environmental goods and services & adaptive policy	2015	<ul style="list-style-type: none"> Tools for and case studies of quantifying buffering of water flows and other hydrological ES linked to tree cover (quantity, quality, pattern) and agriculture Tools for and case studies of understanding biodiversity-based environmental services across stages of tree cover transition, incl. pollination, dispersal 	<p>Local governments in >5 countries start using a new FTA-developed framework for planning land use for sustainable development with multiple environmental services, integrating low emission development, buffering against extreme events, biodiversity conservation, restoration options and adaptation in a gender-sensitive context</p> <p>Development agencies in >5 countries start using sentinel landscape characterization data for planning gender-sensitive sustainable development interventions in the established broad domains of similarity</p>
	2016	<ul style="list-style-type: none"> Not just carbon? Quantified tradeoffs between C stocks and other environmental services across tree cover transitions Gender, age and wealth-specific appreciation of tree cover transitions in relation to demographic transitions and development context (incl analysis of Sentinel Landscape household data) Tested tools and governance mechanisms for adaptive landscape management of ecology-economics tradeoffs including performance-based incentive systems Policies for the agriculture-forestry interface and strategies for sustaining food security, ecological functionality and rural development in multi-use landscape mosaics 	<p>At least five countries use FTA evidence in designing gender equitable fund- and market based financing mechanisms (including REDD+) for integrated rewards for ecosystem services with appropriate levels of conditionality</p> <p>National planning agencies in at least ten countries use FTA evidence to take into account consequences of changes in forest and tree cover on human nutrition and vulnerability to shocks and disasters in strategies for SDG attainment (incl. green economy and low-emission development)</p>
3.3 Actively learning landscapes where innovative response and policy options are being tested	2015	<ul style="list-style-type: none"> Network of 'active learning landscapes' on RES/PES mechanisms maintained and enhanced Synthesis from action research sites, identifying principles, methods and processes for advancing conservation, use rights and gender-sensitive livelihood values 	<p>At least five countries use FTA evidence in designing gender equitable fund- and market based financing mechanisms (including REDD+) for integrated rewards for ecosystem services with appropriate levels of conditionality.</p>
	2016	<ul style="list-style-type: none"> Identification of improved modalities and approaches to effectively support conservation in forest landscape mosaics Participatory models for reserve management: resource use rights, threats to targeted species, guidelines for monitoring Impact studies testing assumptions of the FTA.3 theory of change and output-outcome-impact pathways 	<p>National planning agencies in >10 countries include consequences of changes in forest and tree cover on human nutrition and vulnerability to shocks and disasters in strategies for SDG attainment (incl. green economy and low-emission development).</p>
3.4. Integration into relevant policies of the contribution FT&A make at landscape level to food security across forest transition stages	2015-2016	<ul style="list-style-type: none"> Engaging partners and policy makers for integration of environment, agriculture and nutrition Gaps in understanding the role of forest-based ecosystem services for agriculture identified Impacts on smallholder agriculture and environment of agri-business expansion evaluated Investigating relationship between tree cover and diets and nutrition Assessment of landscape configurations functional for integrating environmental and agricultural benefits Understanding broader social context (gender) impact on forests and food security 	<p>At least ten countries and key subnational entities use FTA evidence to develop quantitative targets for tenure reform as contribution to conflict resolution, food security and integrated sustainable development goal achievement, with attention to gender-specific tenure aspects</p>
Flagship 4			
4.1 - Harnessing forest; trees and agroforestry for climate change mitigation	2015	<ul style="list-style-type: none"> A series of FTA knowledge products (papers, policy briefs, web content) that analyse national REDD+ policy topics: e.g. performance of policy processes; legitimacy of international actors in national arenas; policy coalitions for transformational change; multi-level, -sector governance challenges to REDD+ & LU decisions; guidance for REDD+ safeguards design; case studies on LEDS in two countries A review of REDD+ implementation in 22 subnational activity sites 	<p>UNFCCC and ten countries use FTA-generated knowledge to create a more efficient, effective, and equitable new climate agreement</p>

		<ul style="list-style-type: none"> Improved technical MRV procedures and technologies; consolidated deforestation estimates for Indonesia; Indonesian carbon accounting tool deployed to the Government High-level policy dialogues (e.g. UNFCCC side events, Global Land-scape Forum in Paris); regional (COMESA, COMIFAC, AU), subnational and national capacity support and training for REDD+ readiness 	<p>Local and national readiness for landscape approaches enhanced by the use of FTA tools methodological, policy and investment guidance</p> <p>FTA-knowledge informs Low Emissions Development Strategies (LEDS) adopted in two countries</p>
	2016	<ul style="list-style-type: none"> A series of knowledge products that analyse 3E+ in policy making and policy learning for REDD+; application of landscape approaches and associated frameworks, methods and tools in various countries Case study on policy options for conserving forest in native communities under the National Forest Program in Brazil. Impact assessment of the Conditional Transfer Program Case studies of climate variability, fire and forest and timber/oil palm plantation management in Indonesia; on land use change and carbon stock in South-Sudanian savannah High-level policy dialogues; capacity support and training 	<p>The new climate agreement including MRV, accounting rules, compliance and finance is informed by FTA-generated knowledge</p> <p>Five first and second generation REDD+ countries are guided by FTA information, analysis, tools, and best practices when formulating and implementing more 3E+ REDD+ national strategies, policies, measures and performance and impact assessments</p> <p>National and subnational conservation and forest sector actors promote efficient incentive schemes for conservation on native community land</p>
4.2 - Enhancing climate change adaptation through forests, trees and agroforestry	2015	<ul style="list-style-type: none"> Scoping study for the use of climate information in National Adaptation Plans (NAPs) in three countries Published case studies on social vulnerability in forested landscapes of three countries; on forest resilience to fire in Borneo A gender and adaptation analysis; and a study of the role of forest ecosystem services in livelihood adaptation to climate change, both for the Sahel Review of climate change vulnerability of tree species 	<p>Governments agencies and practitioners dealing with adaptation in three countries informed by FTA-generated knowledge on NAP design, climate information & forecasts, scenario analysis, gender-specific activities for adaptation</p> <p>Fire-related policies in Indonesia informed by FTA products</p> <p>FTA information about ten tree species' capacity to adapt to future climate is used by forest managers and concession managers in Latin America</p>
	2016	<ul style="list-style-type: none"> Comparative studies on adaptation and ecosystem services in forests in three countries 	<p>Contributions to UNFCCC Agriculture Road Map and coordination and cohesion of adaptation finance and forests (SCF / GCF).</p> <p>National/ sub national agricultural public/private sector actors promote more CC resilient systems and practices for at least one commodity crop, and better adaptation policies and practices in forests</p>
4.3 - Understanding the role of forests, trees and agroforestry in achieving synergies between climate change mitigation and adaptation	2015	<ul style="list-style-type: none"> Global analysis of gender and mitigation-adaptation synergies Analysis of the scope of sustainable agroforestry practice to achieve synergies Comparative analysis of current multi-level policy context and actions, and guidelines for design of integrated approaches to climate change at national level for 5 countries of the Congo Basin plus Kenya International and national policy dialogues (side events at UNFCCC /SBSTA, regional fora, etc.) 	<p>The UNFCCC (specifically ADP, SBSTA, GCF), and relevant agencies in at least five countries use FTA knowledge products to inform design of Joint Mitigation and Adaptation (JMA) policies</p> <p>Agencies with a mitigation and an adaptation mandate in at least five Congo Basin countries are aware of synergy opportunities and challenges, and communities design projects with synergy outcomes</p>
	2016	<ul style="list-style-type: none"> Analysis of inefficiencies of segregated approaches to climate change Spatial-temporal analysis of bundles of climate-related ecosystem services for Peru International and national policy dialogues (side events at UNFCCC /SBSTA events, etc.); capacity development on joint mitigation-adaptation approaches 	<p>Agencies with a mitigation and adaptation mandate in five countries understand shortcomings of segregated approaches and are actively implementing best practices and more synergistic climate mitigation policies (REDD+) and NAPs</p>

			<p>International (UNFCCC: GCF, SBSTA) policy, methodologies and guidance on synergies and tradeoffs between mitigation and adaptation informed by FTA</p> <p>Land and climate-related policymakers use our findings on synergies between carbon and adaptation services</p>
Flagship 5			
5.1 - investment strategies and business models	2015	<ul style="list-style-type: none"> • Systematic mapping on inclusive business models across diverse economic and institutional contexts • Comparative study on social, economic and environmental outcomes from diverse business model across differentiated land-based investments in three countries (Brazil, Indonesia and Mozambique) 	<p>Key global business and sustainability platforms, and government agencies informed by FTA research on options for enhancing inclusive investment and business models in three countries (likely including Brazil, Indonesia, Mozambique)</p>
	2016	<ul style="list-style-type: none"> • Case studies on corporate decision-making and strategies with potential to enhance social and financial returns while ensuring sustainable land and forest resources use • Review on innovative governance mechanisms and corporate practices and strategies, including the financial sector, with potential to enhance sustainable commodity supply and responsible investments • Methods and tools to monitor impacts and trade-offs from investments linked to the implementation of national and transnational standards • Inform business platforms, multi-stakeholder processes and policy dialogues on sustainable commodity supply and land use with potential to contribute to low carbon development strategies 	<p>Select investors in three countries (likely including Brazil, Indonesia, Mozambique) consider FTA knowledge in the process of developing more inclusive and sustainable business models, with focus on globally trade commodities (timber, oil palm, beef, sugarcane, cocoa)</p> <p>Multi-stakeholder processes in two countries informed by FTA knowledge on institutional arrangements for enhancing responsible investments in support to low carbon development</p>
5.2 - governance systems and institutional arrangements	2015	<ul style="list-style-type: none"> • Policy papers from country assessments on outcomes from VPA negotiations in domestic timber sector • Analysis on the situation of informal timber extraction, legality verification and trade in non-VPA countries 	<p>Transnational and national initiatives supporting timber legality and verification in three producer countries (Indonesia and two in Central Africa) consider FTA-informed options to minimize impacts on local forest users</p>
	2016	<ul style="list-style-type: none"> • Synthesis of workable policy options for strengthening the contribution domestic timber sectors • Analysis on available options to articulate international and national regulations in select commodities • Synthesis on multi-level policy frameworks to enhance accountability of large-scale investments • Support the implementation of corporate standards and regulations including the upholding of local rights • Supported south-south exchanges for knowledge and lessons sharing on innovative policy instruments 	<p>FTA informed at least two processes for improving the articulation of international sustainability standards (e.g. RSPO, FSC) into national sustainability standards (e.g. ISPO, SVLK)</p> <p>Government agencies in three countries equipped with FTA-informed policy options for enhancing accountability, legal compliance and performance of investments</p>
5.3 Securing tenure and rights of resource users across forest and tree landscapes		<ul style="list-style-type: none"> • Synthesis of lessons learnt, key hypothesis, critical issues and research gaps on the role of tenure/property rights in enhancing gender inclusion, sustainable use and management, equitable benefits capture and livelihoods in forest and tree landscapes • Conceptual framework on tenure security drawing from and emphasizing the inter-connectedness, trade-offs and synergies across FTA thematic areas such as climate change, global trade and governance, landscape conservation and gender 	<p>FTA lessons on the impacts of property rights/tenure regimes are taken into account by policy makers and practitioners in their strategic and operational planning in three countries (likely Indonesia, Peru and Uganda)</p>
	2016	<ul style="list-style-type: none"> • Regional-level (i.e. Africa, Asia, Latin America) multi-stakeholder learning forums on factors underlining successes and failures of forest and tree-related land tenure reform initiatives 	<p>Policymakers and practitioners use FTA knowledge to help identify, prioritize and integrate concrete action points into the planning processes for strengthening tenure reform implementation in three countries (likely Indonesia, Peru and Uganda)</p>

8. Budget 2015-2016.

Looking at the overall value proposition for FTA, the TruCost studies²⁰ of the TEEB project (The Economic value of Ecosystems and Biodiversity) documented costs to natural capital of the top 100 projects studied as USD4.74 trillion, out of which 2.09 trillion was related to sectors relevant for the CGIAR and within its geographic scope. A total cost of USD559 billion was directly related to FTA study topics. With a USD1 billion public investment in the FTA research program over a 10-year time frame, FTA will likely provide at least 100-fold public returns through 1) greater awareness of the functions, roles and values of forests, trees and agroforestry capitals in the target regions, 2) avoided damage by projects not implemented as public discourse takes FT&A values into account, 3) continued learning on public policies and public-private partnerships that internalize the true costs to society of private decision making, building on current successes, failures and lessons learnt on REDD+ and Payment for Environmental Services (PES) programs. For the 2015-2016 extension the overall budget figures (x 000 USD) are as follows, based on the financial plan 2014-2015 provided by the Consortium Office:

FTA overall 2015-2016	<i>2014</i>	<i>2015</i>	<i>2016</i>	2015-2016	
Windows 1 and 2	<i>31,933</i>	<i>32,780</i>	<i>36,058</i>	68,838	35%
Gap	<i>1,292</i>	<i>20,033</i>	<i>37,015</i>	57,048	29%
Window 3 and bilateral (secured as of today)	<i>56,723</i>	<i>44,215</i>	<i>26,245</i>	70,460	36%
TOTAL	<i>89,948</i>	<i>97,028</i>	<i>99,318</i>	196,346	100%

Gender	20%
Capacity development	10%
Partnerships	25%

The tentative repartition by Flagship, using the figures of the financial plan 2014-2015 for w1/w2, expected income via bilateral and window 3 (5% per year increase) are summarized below. We have a 29% gap as of today and realization of the program is contingent on our ability to fill this gap either through bilateral funding or through an increase of window 1 and 2 or a mix of both. The distribution across FP is also indicative, as we will be putting in place processes to move from a largely predetermined allocation of w1/w2 funds, from the original proposal, to a strategic allocation decided by the Steering Committee based on ex-ante impact assessments to be carried out in 2014 and 2015.

Detail by Flagship	<i>2014</i>	<i>2015</i>	<i>2016</i>	2015-2016
FP1	<i>26,996</i>	<i>29,504</i>	<i>30,925</i>	60,429
FP2	<i>11,134</i>	<i>11,905</i>	<i>11,541</i>	23,446
FP3	<i>13,120</i>	<i>14,609</i>	<i>14,773</i>	29,382
FP4	<i>27,394</i>	<i>28,787</i>	<i>29,210</i>	57,997
FP5	<i>5,449</i>	<i>6,133</i>	<i>6,367</i>	12,500
Support units (management, M&E) and cross-cutting themes (gender, capacity development, communication)	<i>5,855</i>	<i>6,090</i>	<i>6,502</i>	12,592
TOTAL	<i>89,948</i>	<i>97,028</i>	<i>99,318</i>	196,346

²⁰"Natural capital at risk: the top 100 externalities of business" (2013)
http://www.teebforbusiness.org/js/plugins/filemanager/files/TEEB_Final_Report_v5.pdf

Annex 1: From “research themes” to “strategic research programs and flagship projects”

- 2011: original proposal - Objectives of FTA: sustaining livelihoods, improving governance, multifunctional landscapes, A+M climate change
 - 5 research themes RT with subthemes RsT; essentially equivalent to research programs; not specifically time bound
 - Large dominance of existing bilateral projects pre-dating FTA creation
 - Steering Committee essentially CGIAR
- 2012-2014: 5 flagship projects FP with clusters of activities CA
 - FP are similar to the original RT; no clear end of FP outcomes; CA are modified from RsT
 - Increased number of FTA developed joint projects; still a significant amount of “legacy” projects pre-dating FTA; no obvious active portfolio management but overall good consistency between projects goals and overall FTA objectives
 - Largely predetermined attribution of a large proportion of w1/2 (75%) based on original proposal except for holdback funds and all cross-cutting themes (25%)
 - Expansion of steering committee to non CGIAR members
- 2014 Independent evaluation
- 2015-2016: transition to a more focused and managed FTA portfolio following recommendation of the independent evaluation
 - Revision of the overall portfolio to end up with a few strategic research programs associated FP (c. 10, average size of FP \$10M/year) by 2017
 - Development and implementation of systematic portfolio management with fully aligned included bilateral projects; smaller in number and likely bigger in size
 - 2015: thorough revision of portfolio of bilateral projects for confirmed inclusion or not into FTA
 - 2016: explicit request for “bridging” funds for commitments to legacy projects included in FTA following 2015 analysis
 - Move progressively towards a strategic allocation of a large proportion of w1/2 funding approved by lead Center Board
 - More independent Steering Committee
- 2017: “new FTA” set of strategic research programs with a series of associated FP
 - SRP are news but not necessarily totally different from past research – they are open ended in nature but would be revised every 5 year for relevance and comprehensiveness
 - FP are somewhat at the level of the 2014 CA
 - FP differ in their position in the research → outcome continuum (some more upstream, some more downstream) and in the actual size/funding
 - FP are time-bound with end of project outcomes
 - W1/2 money is strategically allocated for the most part

Annex 2 From portfolio-defined objectives to an objective-defined portfolio

- 2011: Establishment phase characterized by putting CRP foundations in place. No MEIA system yet established.
 - Multicenter Component Implementation Team formation
 - Operational Plan 2012-14 developed
 - Monitoring, Evaluation and Impact Assessment Team formation

- 2012-2014: Progress phase characterized by development of basic monitoring systems, increasing use of theory of change and outcome mapping, and identification of key MEIA improvements needed in 2015-16. Progress phase lacks active portfolio management and a systematic approach to planning, monitoring and learning. Significant progress however made in:
 - Semi-annual technical progress report – housed on online platform
 - Operational Plan – housed on online platform
 - FTA theory of change establishment
 - Outcome mapping introduction and training at Flagship and project levels
 - Trialing use of contribution analysis approach to impact assessment
 - Introduction of enhanced planning, monitoring and learning approaches at center-level (CIFOR – KNOWFOR).
 - Project portfolio information harmonization
 - Strategic and operation linkages with other CRPs explored

- 2014: Independent Evaluation Arrangement evaluation of FTA – significant recommendations made on MEIA that align with development of enhanced planning, monitoring and learning framework.

- 2015-16: Systematic approach to planning, monitoring and learning from activities at CRP, Flagship and Project levels. FTA's contribution to IDOs and SRF is strengthened.
 - A simple and robust theory of change at the CRP houses more detailed Flagship-level theories of change, which in turn house project-level TOCs.
 - Based on SRF, CRP defines priority policy and practice change objectives. Ex-ante policy/practice change impact assessments predict CRP contribution to IDOs and SRF. Ex-post IA approaches used to understand contribution. Strategic and operational linkages with other CRPs realised.
 - Flagships demonstrate contribution to priority policy and practice change processes using mixed methods outcome assessment approaches (e.g. Performance Story Reporting), drawing on knowledge adoption evidence sourced from across multiple relevant projects. Cross-Flagship linkages realised.
 - Projects are designed to contribute to defined Flagship objectives and their boundary partner identification, engagement and knowledge adoption tracking mechanisms are in use by all relevant staff.
 - A harmonized set of project portfolio information is available via an online portal and analyses of that information enhance portfolio management.

- 2017: Planning, Monitoring and Learning system fully bedded in. FTA's portfolio is defined by CRP-level objectives. Information about project, Flagship and CRP contributions to outcomes, IDOs and SRF are used to adaptively manage the portfolio.

Annex 3: CCAFS and FTA complementarity

Climate change research in CCAFS and FTA addresses both mitigation of and adaptation to climate change. While the emphasis in CCAFS is on agricultural technologies and food security (CCAFS' IDO1), using the vehicle of introducing climate-smart agricultural practices to raise adaptive capacity of rural communities (IDO3), the emphasis in FTA-FP4 is on mitigation of climate change, mainly through REDD+, A/R CDM and NAMAS (as part of FTA's IDO6). Both programs also address the respective "other" theme; CCAFS addresses mitigation through low emissions agricultural development in its FS3, and FTA addresses adaptation of peoples and forests to climate change in its Adaptation subtheme. Regarding adaptation, FTA is focusing on ecosystem-based adaptation, and CCAFS on climate smart agricultural practices. Both programs promote the use of climate information systems in National Adaptation Plans (NAPs). Both programs also analyze synergies between mitigation and adaptation and climate finance but from different angles (CCAFS in its FP3 under mitigation, FTA-FP4 under Adaptation). Several regions are covered by both CCAFS and FTA (East Africa, West Africa, South Asia, South East Asia, and Latin America); FTA additionally works in Southern Africa and Central America. CCAFS emphasizes interventions mostly at the national level, where it sees a major impact pathway in the national planning processes and food system policies, while FTA addresses the sub-national, national and international policy levels, and also focuses on multilevel /multisector governance issues.

Table 1: "Multi-dimensional complementarity" of CCAFS and flagship 4 in FTA

Issue	FTA-FP4	CCAFS
	Complementarities	
Objectives	FP 4 addresses the interrelated issues of a) climate change mitigation through forests, trees and agroforestry, b) the adaptation of forests and people to climate change, and c) synergies and trade-offs between mitigation and adaptation.	CCAFS tackles food security, adaptation to climate change and mitigation of climate change . CCAFS seeks to catalyse positive change towards climate-smart agriculture (CSA), food systems and landscapes.
"Centers of gravity"	<i>Emphasis</i> on policy research for climate mitigation with forests, trees and agroforestry in the landscape	<i>Emphasis</i> on research for adaptation technology adoption (CSA practices) to reduce risk in agriculture and increase food security
How sub-units correspond	Sub-theme Mitigation Sub-theme Synergies between Mitigation and Adaptation Sub-theme Adaptation	Flagship 3: Low-emissions agricultural development Flagship 1: Climate-smart agricultural practices Flagship 2: Climate information services and climate-informed safety nets Flagship 4: Policies and institutions for climate-resilient food systems
Regional coverage	East Africa, West Africa, South Asia, South East Asia, Latin America, Southern Africa, Central America	East Africa, West Africa, South Asia, South East Asia, Latin America
Policy level coverage	<ul style="list-style-type: none"> Sub-national mitigation activities and programs National REDD+ and NAMA policies International REDD+, NAMAs, A/R CDM policies 	<ul style="list-style-type: none"> National Adaptation Plans Global policies to include agriculture in climate mitigation agreement
Builds on	Policy research as core strength of CIFOR and practice research in ICRAF	<ul style="list-style-type: none"> Joint strength of agricultural research in 15 CG centers
Exclusively covered themes	REDD+ A/R CDM	Carbon market approaches to raise food security Value chain and product diversification approach

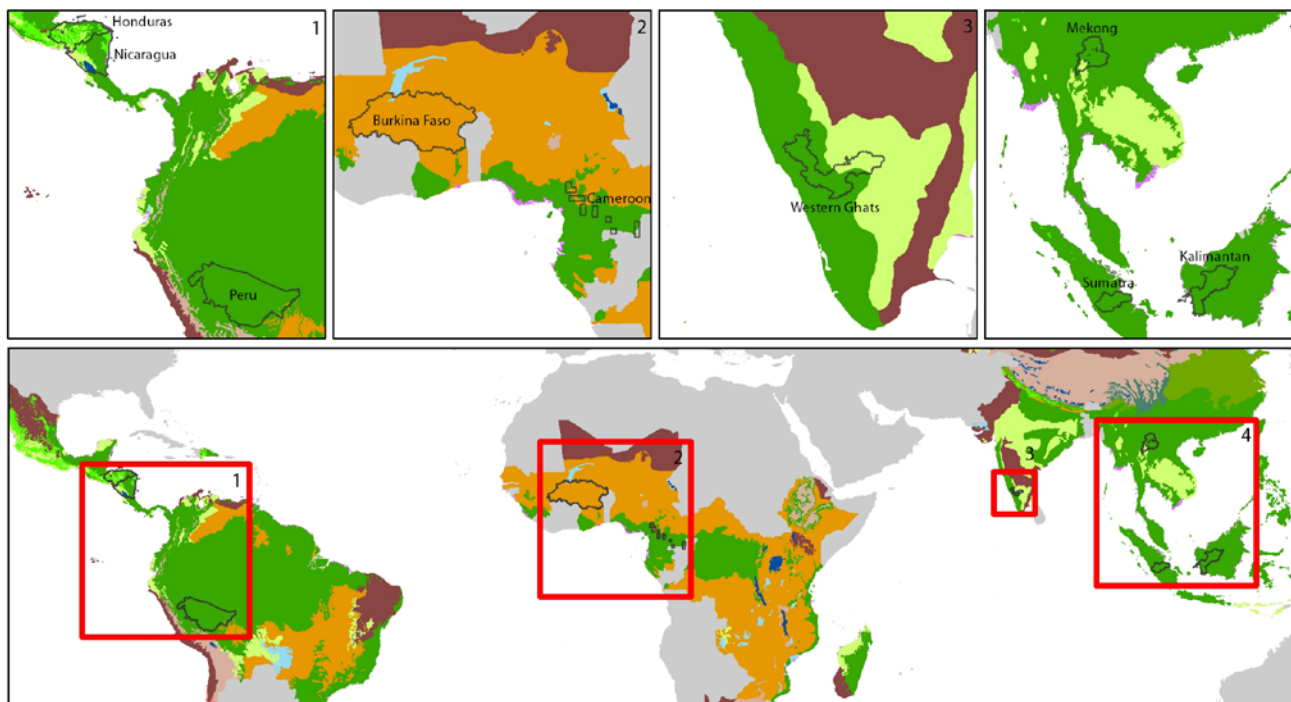
Collaborative mechanisms between FTA and CCAFS: one annual planning meeting, jointly funded projects, jointly defined impact pathways (e.g. in Burkina Faso), one major joint event per annum. The period 2015-2016 will see an increased collaboration between FTA and CCAFS via jointly funded projects regarding mitigation and low carbon economy of global value chains (oil palm, beef, soya bean) and GHG accounting at landscape scale.

Table 2: Complementarity and collaboration between CCAFS and FTA

Theme	FTA work that is relevant to CCAFS	CAAFS work that is relevant to FTA	Joint work
Mitigation			
Evaluation of implementation, practice and technical options	FP 4.1: REDD+ demonstration activities (GCS M2): REDD+ practice, tenure, gender at sub-national level FP 5: Markets, institutions for sustainable commodity supply in oil palm and cattle	FP3: Low-emissions agricultural development: Reduced-emissions options that are gender sensitive for farmers, fishers and livestock keepers in crop- and livestock-dominated landscapes	Reduced-emissions agroforestry and forest landscapes options for smallholders and common-pool resource users (CAAFS focusing on agriculture; FTA on forest governance)
Multifunctional landscape management: carbon, GHG emissions, biodiversity, livelihoods	FP2: Tree diversity management for adaptation FP3: Tree cover change effects on rainfall and agroforestry vulnerability FS 4.1: Multilevel governance of REDD+: Policy coordination across levels and sectors	FP1: Climate-smart agriculture: Prioritization, planning and scaling tools for gender-sensitive CSA practices	Integrated Climate Smart, integrative landscape approaches and participatory scenario tools for mitigation, adaptation and green economy planning; quantification and decision support to mitigation in AFOLU
Measuring, Reporting and Verification (MRV)	FS4.1: Monitoring and reference levels: Quantify carbon and GHG reference levels, technically improve MRV, assess national capacities for MRV in forests and agroforestry	FP3: Low-emissions agricultural development: Quantify mitigation options and develop measurement protocols in crop- and livestock-dominated landscapes	Joint definition of aspirational mitigation targets; C sequestration in soils; develop MRV for landscape approaches to mitigation; global mitigation hotspot analysis
Policy evaluation	FP4.1: REDD+ strategies, policies and measures: Global, national, subnational policies and institutions for REDD+ FP5: Governance of market value chains with territorial-based low-carbon land regulations	FP3: Low-emissions agricultural development: Policy support for climate smart villages; scaling up and NAMAs for smallholders and common-pool resource users to reduce emissions from crop- and livestock-dominated landscapes	Policy support for smallholders and common-pool resource users to reduce emissions from landscapes; valuing pro-poor landscape level mitigation payment schemes; assess sub-national, national and international policies and institutions for landscape-level mitigation
Adaptation			
Implementation, practice and technical options	FP4.2: Best practices, decision support for ecosystem-based adaptation	FP1: Climate-smart agriculture: Adapt farming systems to change, ensuring gender equity	Integrated vulnerability assessment and adaptation planning for diverse livelihoods
Landscape level management	FP3: Climate change impacts on trees, livelihoods FP4.2: Adaptation options to reduce vulnerability of forest- and tree-dependent people to climate change	FP1: Data and tools for analysis and planning FP2: Climate information services and climate-informed safety nets. Climate impacts in agriculture; risk management for rural communities ensuring gender equity	Integrated approaches to assess impacts of climate change on agriculture, forests and trees at landscape scale Assembling data and tools for a landscape and multisectoral approach to raise resilience
International and national policy evaluation	FP4.2: Analyzing policies and funds for adaptation in tree-based systems	FP4: Policies, funds and institutions for climate-resilient and equitable food systems	Refining frameworks for policy analysis; assess policy and incentives to raise resilience
Joint Mitigation and Adaptation (JMA)			
Trade-offs and synergies between mitigation and adaptation	FP4.3: Develop approaches for governance options and livelihoods & gender analysis; defining and analyzing future scenarios and pathways for JMA	FP3: Analyze adaptation, incomes, gender equity, food security and mitigation; developing plausible future food security scenarios under climate change	Analyze interactions between sectoral policies and finance for JMA; develop scenarios at different scales for food security, ecosystem conservation, JMA
Policy engagement	Mitigation and adaptation policies focusing on tree-dominated landscapes	Adaptation and mitigation policies focusing on crop and livestock dominated landscapes	Joining forces for global policy alignment across sectors, dissemination & capacity development

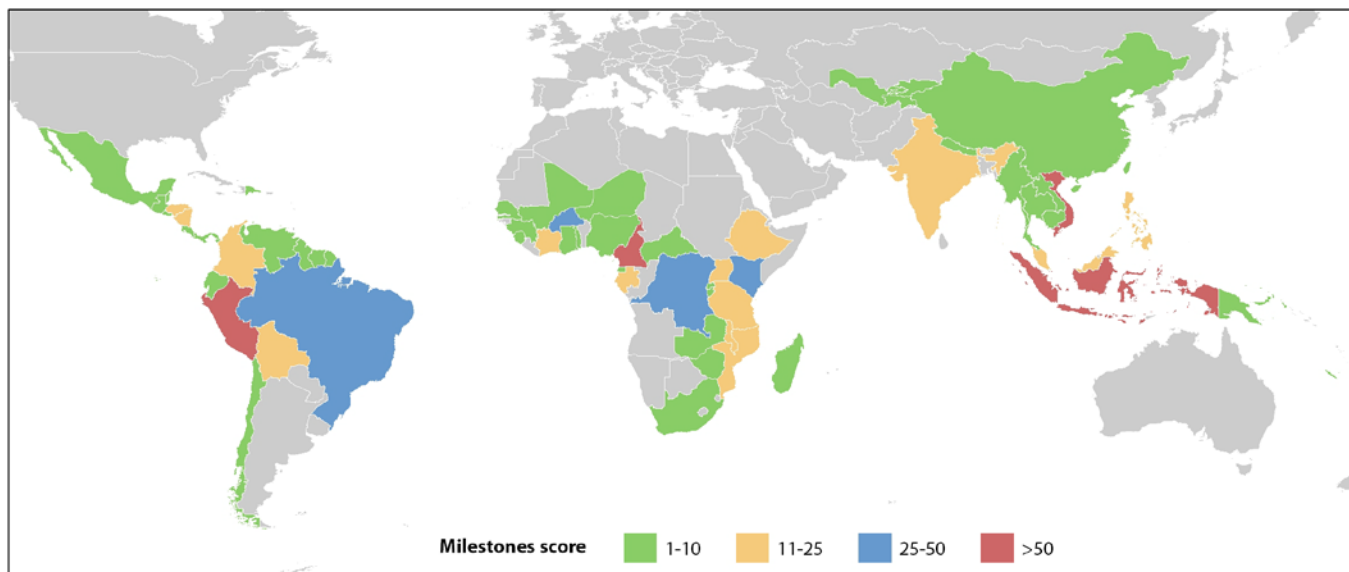
Annex 4: FTA Sentinel Landscapes and terrestrial ecoregions and FTA outputs for 2014

Sentinel Landscapes and terrestrial ecoregions



Source: Olson, D.M., E. Dinerstein, E.D. Wikramanayake, N.D. Burgess, G.V.N. Powell, E.C. Underwood, J.A. D'Amico, H.E. Strand, J.C. Morrison, C.J. Loucks, T.F. Allnutt, J.F. Lamoreux, T.H. Ricketts, I. Itoua, W.W. Wetengel, Y. Kura, P. Hedao, and K. Kassem. 2001. Terrestrial ecoregions of the world: A new map of life on Earth. *Bioscience* 51(11):933-938

FTA outputs for 2014



Annex 5: List of acronyms

AAS	CGIAR Research Program on Aquatic Agricultural Systems
A4NH	CGIAR Research Program on Agriculture for Nutrition and Health
AFOLU	Agriculture, Forestry and other Land Use
AfSYS	African Soil Information Service
AGROPOLIS	Agropolis International
APFORGEN	Asia Pacific Forest Genetic Resources Program
A+M	Adaptation plus Mitigation
ARI	Advanced research institute
A/R CDM	Afforestation and reforestation under CDM
ASB	Alternatives to Slash-and-Burn
ASEAN	Association of Southeast Asian Nations
AVRDC	World Vegetable Center
BRICS	Brazil, Russia, India, China and South Africa
CA	Cluster of activities
CAADP	Comprehensive Africa Agriculture Development Program
CARE	Cooperative for Assistance and Relief Everywhere
CATIE	Tropical Agriculture Research and Higher Education Center
CapDev	Capacity Development
CCAFS	CGIAR Research Program on Climate Change, Agriculture and Food Security
CCFP	Conversion of Cropland to Forest Program
CDM	Clean Development Mechanism
CIAT	International Center for Tropical Agriculture
CIFOR	Center for International Forestry Research
CIRAD	Centre de coopération internationale en recherche agronomique pour le développement
COMESA	Common Market for Eastern and Southern Africa
COMIFAC	Central African Forest Commission
COP	Conference of the Parties
CPF	Collaborative Partnership on Forests
CRP	CGIAR Research Program
CSA	Climate-Smart Agriculture
CSO	Civil society organization
DRC	Democratic Republic of the Congo
Drylands	CGIAR Research Program on Dryland Systems
ECOWAS	Economic Community of West African States
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária
ETH	Eidgenössische Technische Hochschule Zürich
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FEDRC	Chinese National Forest Economics and Development Research Center
FTA	CGIAR Research Program on Forest, Trees and Agroforestry
FT&A	forests, trees and agroforestry practice area
FP	Flagship project
FLEGT	Forest Law Enforcement, Governance and Trade
FLEGT-VPA	Forest Law Enforcement, Governance and Trade Voluntary Partnership Agreements
FMC	Forest management and conservation of biodiversity resources
FORDA	Forestry Research and Development Agency (Indonesia)
FSC	Forest Stewardship Council
GCF	the Governor's Climate and Forests Task Force
GCS M2	Global Comparative Study on REDD+, Module 2
GEIRS	Gender Equality in Research Scale
GHG	Green House Gases
GIT	Gender Integration Team

GOFC-GOLD	Global Observation of Forest and Land Cover Dynamics
Gt	Gigatons
HT CGIAR	Research Program on Integrated Systems for the Humid Tropics
ICRAF	World Agroforestry Centre
IDO	Intermediate Development Outcomes
IFRI	International Forestry Resources and Institutions
IGG	Inclusive green growth
IMFN	International Model Forest Network
INDEPTH	International Network for the Demographic Evaluation of Populations and Their Health
INGENIC	International Group for Genetic Improvement of Cocoa
IP	Impact pathway
IPCC	Intergovernmental Panel on Climate Change
IPG	International Public Goods
IRAD	Institute of Agricultural Research for Development (Cameroon)
ISPO	Indonesian Sustainable Palm Oil
IUCN	International Union for Conservation of Nature
IUFRO	International Union of Forest Research Organizations
JMA	Joint Mitigation and Adaptation
KARI	Kenya Agricultural Research Institute
KEFRI	Kenya Forestry Research Institute
L&F	CGIAR Research Program on Livestock and Fish
LAFORGEN	Latin American Forest Genetic Resources Network
LEDS	Low Emission Development Strategies
LSMS	Living Standards Measurement Study (World Bank)
LTER	Long Term Ecological Research
M&A	Mitigation and adaptation
M&E	Monitoring and evaluation
MEIA	Monitoring, evaluation and impact assessment
MEL	Monitoring, evaluation and learning
MS	Master of Science
NAMAs	Nationally Appropriate Mitigation Actions
NARES	National Agricultural Research and Extension Systems
NARI	National Agricultural Research Institutes
NARS	National agricultural research systems
NGO	Non-governmental organization
NORAD	Norwegian Agency for Development Cooperation
NRM	Natural resources management
NTPFs	Non-timber forest products
OTCA	Amazon Cooperation Treaty Organization
PES	Payments for environmental services
PIM	CGIAR Research Program on Policies, Institutions, and Markets
REDD+	Reduced emissions from deforestation and forest degradation
RRI	Rights and Resources Initiative
RSPO	Roundtable on Sustainable Palm Oil
RT	Research Theme
RsT	Research sub-Theme
SADC	Southern African Development Community
SAFORGEN	Sub-Saharan African Forest Genetic Resources
SDG	Sustainable Development Goals
SLO	CGIAR System Level Outcomes
SIs	Sentinel Landscapes
SRF	Strategic results framework
TEEB	The Economics of Ecosystems and Biodiversity
TmFO	Tropical managed Forests Observatory

ToC	Theory of Change
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WCR	World Coffee Research
WLE	CGIAR Research Program on Water, Land and Ecosystems
WTO	World Trade Organization