CGIAR Research Program

on Forests, Trees and Agroforestry (FTA)

Plan of work and budget (POWB) for 2020

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1_Adjustments/ Changes to your Theories of Change (ToC), if relevant (max. 500 words)

There were no significant changes in 2019 to FTA's theory of change[1].

FTA plans all its work on the basis of its operational priorities. These, in turn, focusresearch towards major development demands and knowledge gaps, orienting FTA towards the implementation of the SDGs and other global commitments. **Three operational priorities were added in 2020** (see list in Appendix 1) to better delineate pre-existing research areas addressing development bottlenecks needing dedicated investment and visibility: smallholder tree-crop commodities, tree seeds and seedlings delivery systems, and foresight.

FTA organized in 2019, at the request of its ISC, a joint ISC-FTA workshop on impact assessment methods for the program. Based on the outcomes of this workshop FTA will, inter alia, revisit in 2020 its impact pathways and end of programme outcomes, and if need be, corresponding adjustments to the ToC of FTA and/or of its FPs will be made.

2_Plans and Expected Progress Towards Outcomes

FP1 Tree genetic resources (TGR) to bridge production gaps and promote resilience

In the new operational priority on **Seeds and seedlings delivery systems**, FP1 will focus on the following unresolved challenges to support multi-species large scale tree planting: 1) very low survival rates of plantings in many areas, 2) very low awareness among decision makers and many practitioners of the opportunities foregone by not investing in the adequate planting material for the right species for the right place, and 3) the need for 'climate proofing' of delivery systems to adequately support investments of e.g. the Green Climate Fund in national adaptation and mitigation actions. The delivery systems priority will therefore focus on decision support tools for 'what to plant where' including climate suitability, quality plants and nurseries, and assessing return on investments in adequate planting material. For instance, a new smartphone app, SeedIT, will be developed to support improved seed systems for high value threatened tree species in SE Asia, and piloted in at least two villages in Laos to document the barriers to uptake of the tool.

Within the priority on **Biodiversity, safeguarding and conservation**, FP1/CoA1 will in 2020 focus its work on supporting stakeholders in developing and implementing (show casing proof of concept) the safeguarding of priority genetic resources. To do so, FP1 will help countries to set conservation priorities, by mapping and assessing vulnerability factors, covering species like rosewood, brazil nut, cocoa, shea and bamboo. FP1 will develop training materials in SE Asia, Central America, Peru, Ethiopia and Indonesia. For instance FP1 will train forest professionals and rural households on conservation strategies, germplasm multiplication and value chain development for rosewood species in Lao, Cambodia and Vietnam, supporting appropriate strategies for *in situ* and *ex situ* rosewood tree management and conservation to be implemented by local communities,

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[1] The FTA theory of change relies on a variety of targeted engagement strategies (knowledge co-production, research in development, audience segmented outreach etc.) to integrate strategic boundary partners, knowledge users and decision makers into the research cycle as key mechanisms to facilitate research use and influence.

conservation organizations and governments. FP1 will prepare a report to support the renewal of cacao varieties in national and international germplasm collections. A review of the state of global Tree Genetic Resources (TGR) will be initiated as a contribution to the forthcoming FAO's 2nd State of the World's Forest Genetic Resources.

The priority on **Orphan crops** will continue its work on characterisation of genotypes and phenotypes of orphan trees, with an additional 11 crops for genome sequencing and mapping, cultivar development, and assessment of the socioeconomic impact of domestication and application of business models for orphan trees. It will be completed by a report on socio-economic outcomes and business models for the promotion of African orphan crop species, with a case study on croton . This is made available through open-access web portals to African plant breeders. This will support public and private sector investment in orphan crops and is contributing to the ongoing African Orphan Crops Consortium initiative.

FP1 work in the priority on **Enhancing Food security and Nutrition**, will produce data, best information sharing approaches to support behaviour change in at least 5 landscapes towards better diets and higher consumption of nutritious wild foods and cultivated fruits, vegetables, and legumes. A database of gender- and generation- disaggregated data on tree-based foods and other foods in Kenya will be constituted, building on the EC/IFAD Food Trees Project To inform production-and demand-oriented interventions of development partners for increased dietary quality in East Africa. A new function will be added to the Diversity4Restoration tool to account for the nutritional value of tree species for restoration programmes in Burkina Faso, Cameroon and Ethiopia. Furthermore, FP1 will develop and provide to the private sector, women and youth, updated information for improved post-harvest and food preparation approaches (traditional recipes or recipes from other regions or crops).

In the priority on **Restoration**, FP1/CoA3 will provide new information (e.g. on returns on investment) to advise on the enabling environment for the establishment of, and the design for mass breeding infrastructure to deliver suitable, genetically diverse and quality seed for restoration. Planning documents will be prepared for first-time seed orchards for tree species important in Ethiopian forest restoration, in connection with the ongoing PATSPO (Provision of Adequate Tree Seeds Portfolio). Online decision-support tools for restoration planning (Africa Tree Finder, the Agroforestry Species Switchboard, the Agroforestree Database, the Vegan Community Ecology Package and ResTool) will be updated.

FP2 Enhancing how trees and forests contribute to smallholder livelihoods

Key progress planned for 2020 in each of the priorities led or co-led by FP2 is as follows.

Agroecology. FP2 will support in 2020 the follow-up from the international policy convergence process in the CFS through the publication of a consolidated set of agroecological principles, comprising articulation of requirements for climate smart agroecology and it will establish a transformative partnership platform involving Biovision, FAO and UNEP (amongst others) alongside FTA and other CGIAR partners to initiate rigorous and holistic, socio-economic evaluation of agroecological practices across Africa.

Livelihood trajectories. FP2 will publish an assessment of long-term impacts of agroecological approaches to land restoration on livelihood outcomes in Kenya and Ethiopia. It will be complemented by the release of a livelihood trajectory modelling toolkit that incorporates the

globally calibrated APSIM crop modelling system developed by CSIRO with the Simile intuitive modelling environment capable of representing local farm households. The hybrid toolkit will have the capacity to generate locally relevant restoration options from globally calibrated models.

Market-based agroforestry. FP2 will publish an assessment of the comparative performance of market-based agroforestry options to improve income and environmental sustainability: on sloping land in northwest Vietnam, in relation to integration of NTFPs with timber production in Indonesia and for coffee, honey and dairy tree fodder value chains in East Africa.

Farm-forest interface policy. Planned comparisons will be established to evaluate: i) the cost-effectiveness of using an options-by-context (OxC) approach to the implementation of the new agroforestry concession scheme in the Peruvian Amazon that FP2 is contributing to formulate; and ii) the efficacy of including gender transformative actions in a major EU-funded regreening programme in Ghana alongside comparative analysis of agroforestry policy development and implementation across Africa.

Smallholder tree-crop plantations. FP2 will publish an assessment of comparative performance of: climate-smart diversification options for smallholder oil palm in Brazil; transition from monoculture to coffee agroforestry in China and sustainable development of the coffee sector in Vietnam; as well as, rejuvenation of cocoa production systems in West Africa.

Silvopastoral systems. Publication of comparative performance of climate smart silvopastoral systems options across Latin America and Africa.

FP3 Sustainable value chains and investments for supporting forest conservation and equitable development

FP3 leads or co-leads five of FTA's operational priorities with the following objectives in 2020.

For the priority on **public and private commitments to zero deforestation**, FP3/CoA1 will complete the analysis of social and environmental outcomes and impacts associated with zero deforestation and restoration commitments in the seven jurisdictions assessed in 2018 and 2019 in Brazil, Colombia, Peru, Ghana, Indonesia and Malaysia. A comparative analysis will be published in a Special Issue in 2020 and outreach materials will be prepared for each country. The final last years of the priority will focus on the last of its six research objectives to identify approaches best-suited and legitimate to monitor and recognize the performance of jurisdictions to halt deforestation, support land use intensification and enhance forest landscape goods and services.

The priority on **Effectiveness of approaches to sustainable supplies** will work on a global comparative analysis of approaches for legality verification to internationally traded agricultural commodities through five case studies that illustrate the heterogeneous links between a public agreement to demonstrate the legality of forest/agricultural products and private agreements aimed at protecting natural resources. These include: Indonesia applying legality standards and licenses for timber and palm oil exports to Europe; Cameroon implementing private certificates of legality and sustainability to export its timber and cocoa to the EU and developing hybrid forms of governance by combining public and private regulations; Côte d'Ivoire applying similar approaches to legalizing timber and cocoa production at the agroforestry landscape level; Colombia engaging in both public negotiation of a FLEGT agreement while pledging to produce deforestation-free cocoa at the national level, as part of the voluntary Cocoa and Forests Initiative; and Burkina Faso governing shea nut and shea butter value chains to address vulnerabilities and opportunities for rural women.

The priority on **Plantations and tree-crop commodities,** undertaken in collaboration with FP4, is addressing productivity, environmental and social challenges faced by timber and high-value and rapidly expanding tree-crop plantations. Building on the assessment of the synthesis papers drafted in 2019 on timber, oil palm and rubber plantations, the priority will work on the analysis of approaches to manage synergies and trade-offs between plantation productivity, socio-economic and environmental outcomes in selected "hotspots" and landscapes, including: i) timber plantations using mixed species and contributions to landscape level restoration in Southeast Asia, Africa and Latin America; ii) oil palm plantations and the strategies to address labour shortages and climate resilience in the large producer countries of Indonesia, Malaysia, Brazil, and Ghana; iii) Rubber plantations and use of a global comparative analysis of rubber smallholder supply chains in Indonesia, Vietnam, Thailand, Cote d'Ivoire and Brazil to identify which configurations generate most benefits for farmers and how smallholders can benefit from the newly created Global Platform on Sustainable Natural Rubber (GPSNR). Analytical results of plantation ecosystem services from FP4 will be applied to the three plantation types.

The priority on **Inclusive business models** will build on the knowledge base created from the 2018 primary data collection of more than 50 businesses in oil palm, cocoa, tea, coffee, sugarcane, avocado, and timber sectors, and 2019 surveys of 1,450 inclusive business ventures with 12 case studies selected in Peru, Ghana and Tanzania. Based on this, activities in 2020 will focus on disseminating the generated knowledge through targeted workshops with the stakeholders in the case studies to identify structural barriers to innovation and scaling, and viable pathways to resolving those. External institutional and financial support needs will additionally be identified. Insights from these workshops will guide complementary research activities into viable innovation and scaling options. These activities will provide rich empirical material to not only develop a high-impact journal paper on a critically under-researched challenge , but also to develop practical, targeted and useful knowledge briefs. Uptake of research results will be further enhanced by outreach and dissemination of guidelines and tools targeting the international business and development community and national policy processes.

The priority on **Innovating finance for sustainable landscapes,** building on 2019 results, will seek to deepen its influence on financial institutions to adopt environmental, social and governance (ESG) criteria when lending to timber, trees and select agricultural crops. Work in 2020 will focus on categorizing and assessing bottlenecks and ways to scale up inclusive landscape finance , including assessing initiatives, approaches and modes of operation of key organizations and networks. This includes the publication of the report on Scaling of innovative finance for sustainable landscapes, as well as several case study reports and policy briefs. Work will also facilitate and inform dialogues and visibility actions on key innovative concepts and approaches being discussed under existing platforms, e.g. Impact Investing Forum, Global Landscapes Forum, African Forest Policies & Politics (AFORPOLIS) 2020.

FP4 Landscape dynamics, productivity and resilience

FP4 actively participates in five operational priorities, leading three of them.

The priority on **Sentinel landscapes (SL)** will test a portfolio approach to co-location and collaborative research across sentinel landscapes developed in 2019. It will mainly seek to apply the approach to a comparative study and analysis based on co-located databases, publications and work in 3 -4 sentinel landscapes including potentially Kalimantan (Indonesia), Southern Cameroon, and Nicaragua-Honduras. It is hoped that this would enable a model of comparative work across project portfolios.

The priority on **Restoration** will finalize the CGIAR-wide survey that FTA led (associating PIM and WLE) and finalize its work on developing a compendium of methods / tools for planning and implementing restoration and a typology for restoration. It will endeavor to make important new contributions in the areas of restoration of degraded secondary forests, on de-risking viable investment models for restoration in Africa, on analyzing progress on delivery on Bonn Challenge implementation especially in Africa and Forest Landscape Restoration. A lot of this new work will be done across Africa, Asia and Latin America, particularly in Cameroon, Kenya, Indonesia, India, Costa Rica, Honduras and Nicaragua. It will also participate with FAO and other partners to the Economics of Ecosystem Restoration (TEER) initiative to constitute a global database to support the estimation of costs and benefits of restoration projects.

In the priority on **Enhanced nutrition and food security**, FP4/CoA3 will analyse tree portfolios and diets in Burkina Faso, Indonesia and Zambia. Work will also begin on a special issue on the impacts of land use change on diets across Africa, Asia and Latin America. Collaboration work with A4NH will continue through a joint science event.

Leading the priority on **Landscape governance**, FP4/CoA4 will seek to contribute important new knowledge on landscape governance options for resilient landscapes, planning transformative landscapes at meso scale, governing performance-based finance and also in understanding migration landscapes. Analyses and experimentation on incentives for landscape governance will continue, with case studies in the Gambia, Tanzania and Cameroon.

Contributing to the operational priority **on plantations and tree-crop commodities**, FP4 will finalize analysis on the contributions of tree commodities and tree commodity landscapes to multiple SDGs in Africa through the book project started in 2019. The book should be published in Mid-2020. Further development is expected on a planned special issue across the pan-tropics on the same topic in the journal Sustainability Science drawing largely from FPs 4 and 5 work.

FP5 Forests, trees and agroforestry for climate change adaptation and mitigation

The priority on **NDCs** (Nationally Determined Contributions under the Paris Agreement on Climate Change;) supports the country-led implementation of NDCs. It includes developing guidance and methodological frameworks for mainstreaming agroforestry into NDCs second cycles, with a particular emphasis on in East Africa Community's countries (EACC); developing a forest reference emission level (FREL) for Indonesia, a key input to Indonesia's NDC; developing guidance for the forests, land-use and ecosystems sector of the Green Climate Fund including the development of a Nature-Based Solutions Framework; the conclusion of the current phase of the Global Comparative Study on REDD+ (GCS-REDD+) with 4 country impact studies; work on carbon measurement, carbon footprint, and water relations in Bamboo; new activities around fires as a risk factor in land-based mitigation and adaptation, and further work on principles and drivers of transformational change. This priority will also have a strong emphasis on rights and gender.

The work in the priority on **Blue carbon and peatlands** will focus on integrating wetlands and peatlands in national forest and climate policies, and supporting the determination of carbon reference levels and their inclusion in NDCs, with a specific focus on Indonesia and Peru. FP5 will validate the FTA global wetlands map in Latin America. New knowledge will be generated about assessing emission factors for Amazonian peat forests to support global and national GHG accounting. FP5 will also provide scientific inputs to the International Tropical Peatland Center, headquartered in Indonesia and involving Peru, DRC and Republic of Congo.

Leading the priority on **Adaptation**, FP5 will undertake analytical work on mitigation-adaptation synergies, vulnerability, restoration. It will support NAMA development, e.g. in Central America, and develop methods to measure adaptation in agriculture. It will provide evidence to help countries integrate forests and trees in national and international adaptation related processes, with a strong emphasis on rights and gender. Finally, it will look at water-soil relations in bamboo, a key forest resource.

The priority on **Bioenergy and biomaterials** will focus on circular bio-economy approaches for key value chains (food, feed, bioenergy, biomaterials), and is expected to hold an inception workshop. It will continue and expand the work on bioenergy production potential on degraded and underutilised land, with case studies on Indonesian peatlands, and a new focus on ecosystem-based entry points. There will be an in-depth analysis of sustainable bioenergy options in practice through four case studies (Ethiopia, Kenya, Brazil and Indonesia).

Note: FP2, 3, 4, 5 do an excellent job of showing how they build their work in 2020 upon pas t work, how they work with partners and how they will produce impressive deliverables. There is just one query I have: when reading through the descriptions I got the feeling that we are talking about trees and forests. The integration of trees in agricultural systems and crop systems does not come through. In other words, this all reads like it is about forests. I think it would be helpful to mention, in appropriate places, that the work concerns not just forests and tree plantations but also all the diversity of landscapes in which trees are integrated with crops, animals, you name it. Even just adding 'agriculture' here and there would help.

MELIA - Monitoring, Evaluation, Learning and Impact Assessment

In 2020, **FTA's work on Monitoring, Evaluation, Learning and Impact Assessment (MELIA)** will focus on documenting progress of FTA contribution in addressing key global challenges where FTA is expected to deliver results and to assess FTA contribution to SRF relevant targets associated with these challenges. Two challenges have been selected for 2020, the *Protection of forests and reduction of deforestation*, and the *Reduction of rural poverty, and improved livelihoods*. These integration studies will be complemented by individual studies documenting progress within three selected impact pathways representative of FTA: Supporting public and private commitments to zero deforestation, Local governance and policies (formulating and implementing a National Agroforestry Policy in Nepal), and the Role of trees in agriculture and farming systems.

The MELIA cluster will continue to support Flagships in the revision of their end of program outcomes and milestones to factor-in the closure of the CRPs in 2022 (CGIAR Business Plan measure), as well as the lower than expected W1-2 funding.

Gender

In 2020, the FTA operational priority on **gender equality and social inclusion** will provide guidance and support to FTA scientists, practitioners, and policy makers on gender integration in the forestry and agroforestry sectors. Cross-center collaborations and initiatives will include the development of a learning module and capacity strengthening events on integrating gender and social inclusion considerations in land and landscape restoration. These efforts address the needs of members of the Global Landscapes Forum's (GLF) Gender Constituency, which FTA initiated and leads, and the demands for support of other restoration stakeholders. Drawing on empirical findings from years of FTA gender research, FTA will support gender mainstreaming in high level policy processes, including the Rio Conventions, working with the Secretariat of the CBD and UN

Women to integrate gender in the post-2020 Global Biodiversity Framework and sharing gender research findings on climate mitigation and adaptation in relevant forums and processes.

Working with the CGIAR Gender Platform, FTA will strengthen the evidence base on the 'feminization of agriculture' through research on rural livelihood trajectories in a context of migration, linking human movements with adoption of restoration innovations, to enable more relevant and effective restoration programming in contexts of rapid rural change. Within FTA's value chains priority, assessments of the gender-responsiveness of standards for fair trade and different certification systems on globally traded tree-based commodities will be conducted as well as of social and gendered impacts across two emblematic value chains: palm oil and shea butter. A separate stream of research will examine the prospects multi-stakeholder forums or platforms hold for promoting equitable management of natural resources in situations marred by highly unequal power relations. Finally, in partnership with UNDP and Indonesia's Ministry of Finance and Ministry of Women, FTA will assess the gender-responsiveness of climate finance in Indonesia.

3 Financial Plan for the coming year, including use of W1/2

The FTA POWB is both priority-based and activity-based. FTA's POWB is priority-based, as it is prepared taking as entry point the operational priorities (Annex 1). The POWB is activity-based in the sense that for each operational priority an itemized list of W1-2 funded activities and deliverables (each one with its dedicated amount of resource) is agreed to as part of the POWB.

The financial plan for FTA is USD 9,996,000 of W1-2 in 2020 (Table 3), as per the indications from the SMO in **this document for SMB16**.

Since 2017, to face ex-ante W1 funding uncertainties as well as uncertainties in the CGIAR fund disbursement calendar, FTA has been implementing a contingency planning process, whereby W1-2 funded activities in the POWB are split into three tiers of decreasing probability of funding:
- Tier 1: extremely likely to be funded and disbursed to partners earlier in 2020 than Tier 2,
- Tier 2: very likely to be funded, disbursed later in the year than Tier 1.
- Tier 3: uncertain / unlikely to be funded, unless additional positive information is received from the System Management Office (SMO) in the course of the year.

The 2020 finplan was allocated to the three contingency planning tiers as follows :

Tier	Amount (USD)	Corresponding to
Tier 1	4,455,000	25% of 2020 W1 + 100% of 2020 W2
Tier 2	3,695,000	50% of W1
Tier 3	1,846,000	25% of W1
Total	**9,996,000**	**2020 W1 + 2020 W2**

A: Planned Milestones

clude the planned milestone mapped to 2022 CRP outcomes with the means of verification. For each milestone, indicate t
m the original proposal, means of verification, CGIAR cross-cutting markers for gender, youth, Capacity Development
hange (CC), and likely risk to achievement (Low risk = very likely to be achieved). Please see note on putting a short narrative i
mment on major adjustments and new/changed milestones in addition to the proposals, and if these were linked to the insights/ innovations from

	Column 3	Column 4	Column 5	Column 6	7a	7b	7c	7d	Column 8
			Indicate of the following (drop down: Milestone 1) Identical to proposal 2) Reworded/ rephrased from proposal 3) new/ changed*)		**CGIAR Cross-Cutting Markers for the milestone** (see Note 4) 0=not targeted; 1=significant; 2=principal N/A = not applicable				**Assessment of risk to achieve that milestone (L/M/H)** (see note 5)
pped to Sub-IDO	**2022 FP outcomes** (see Note 1)	**Milestone** (see Note 2)		**Means of verification** (see note 3)	**for gender**	**for youth**	**for Ca pDe v**	**for C C**	
aken from proposal	Taken from proposal	Taken from proposal (PIM table D)	Taken from FP impact pathways	Taken from proposal (PIM table D)					
-IDO 1.4.4 reased ervation use of etic urces. -IDO 3.1.2 anced	Managers and policy-makers adopt effective monitoring methods, tools and practices to mitigate threats to valuable TGR, and implement suitable	Tools and approaches for reducing the impacts of threats such as illegal logging and over-grazing in place in three key countries;	2) Associated with change in planning structure following definition of FTA priorities	Evidence of adoption gathered in first Assessment Report of FP1	1	0	1	1	**M**

ervation of tats and urces. -IDO C.1.1 eased city of eficiaries to t research uts.	safeguarding strategies in line with international initiatives, such as the Global Plan of Action for Forest Genetic Resources and the Global Strategy on Conservation and Use of Cacao Genetic Resources	support for circa situ safeguarding of TGR of 5-10 globally-important and 50 regionally-important food or income-generating tree species		outcomes, December 2020					
-IDO 1.4.3 anced etic gain. -IDO 3.3.2 anced tive city to ate risks. -IDO C.1.3 ducive cultural cy ronment.	Agricultural and horticultural research and development partners adopt cost-effective domestication approaches for priority tree species, based on impacts and maximizing efficiency, and considering trade-offs involved in intensification, while paying attention to smallholder breeders' rights	Guidelines, methodologies and decision-support tools on domestication approaches adopted by national research partners in at least 5 countries, with national and private sector breeders, on user-prioritized species.	2) Associated with change in planning structure following definition of FTA priorities	Evidence of adoption gathered in the first Assessment Report of FP1 outcomes, December 2020	1	0	1	1	**M**
-IDO 1.3.4 e efficient of inputs. -IDO A.1.3 roved casting of acts of ate change	National governments, extension services and private partners adopt cost-effective and equitable tree-planting material delivery	National extension partners have determined and adopted improved context-specific delivery approaches for priority tree species in 2-3	2) Associated with change in planning structure following definition of FTA priorities	Evidence of adoption gathered in the first Assessment Report of FP1 outcomes, December	1	1	2	2	**M**

	approaches, with attention to appropriate international and national policies governing material transfer/use agreements and using the most appropriate decision support tools, to supply high-quality site-appropriate tree-planting material to smallholders and other growers	countries, with the roles of the various actors involved properly aligned.		2020					
targeted nology elopment IDO D.1.1 anced tutional city of er research nizations									
l More uctive and table agement of ral resources 2 Increased ss to diverse, ient-rich food 2 Increased hood ortunities	Improved food security and livelihood opportunities for 20 million smallholder households (100 million people) and more productive and equitable management of natural resources over an area of at least 50 million ha. This outcome integrates some outputs from other research clusters through their scaling.	Impact analyses of the establishment of co-learning communities of practice in terms of effecting sustainable intensification for at least three countries in Africa, Asia and Latin America	**1**	Journal articles, working paper comprising the impact analyses and lessons learnt from them	**1**	1	1	1	**L**
2 Increased ihood ortunities	Improved livelihood opportunities	Quantification of tree and forest contributions to	**1**	Six datasets on dataverse	**1**	1	1	1	**L**

…1 More …luctive and …table …agement of …ral resources	involving timber, fruit and NTFPs contributing a 25% increase in income for over 5 million people and more equitable management of natural resources, including a 25% increase in women's participation in decisions involving tree and forest management and utilization and improvement in substantive representation of women in community forest management institutions.	livehood improvement across at least six countries and three regions								
…2 Agricultural …ems …nsified and …rsified in …s that protect …and water …2 Increased …hood …ortunities	Diversified tree-crop production systems covering 5 million ha and improving diets and livelihood opportunities for 20 million people in smallholder producer households.	A global system for diversification of cocoa production systems in relation to site types and management regimes	2) scope broadened to encompass all diversification options rather than just fertilizer recommendation	System mounted on accessible website	**1**	1	1	2	**L**
…1 Diversified …rprise …ortunities	Increased access to diverse, nutrient rich food for 20 million people through closing	Approaches to matching tree-species to sites and farmer circumstances	3) scope broadened beyond soil microbial processes to encompass	Journal articles, datasets in dataverse	**1**	1	1	2	**L**

2 Increased ss to diverse, ient-rich food 1 Land, water forest adation mized and rsed	yield gaps by trees in agricultural systems improving and maintaining soil health as well as intensifying system interactions (fodder and firewood) and directly contributing to production, reducing and reversing land degradation and increasing the resilience of smallholder livelihoods.	available to development partners implementing agroforestry options.	species specificity more generally in relation to agroforestry options						
1 Land, water forest adation mized and rsed	Reducing yield gaps through improved pasture management and animal husbandry on over 15 million ha and 1 million animals and contributing to reducing and reversing land degradation on over 5 million ha	Quantitative synthesis of the role of trees in reducing contributing to animal productivity and welfare	2) removed specific reference to heat stress in cattle but otherwise the same	Journal article. Dataset on dataverse	**1**	1	1	2	**L**
1 Diversified erprise ortunities 1 Gender table control roductive	Public and private actors adopt effective governance arrangements, mechanisms and tools for ensuring sustainable and	Key sustainability initiatives at the international and national level informed by tools and guidelines to adjust interventions at	2) Associated with change in planning structure following definition of FTA priorities	Policy briefs with recommendat ions from research findings / blogs and other media	**1**	0	1	1	**L**

ts and urces	inclusive commodity supply in at least 3 major producer countries	the value chain and jurisdictional level across at least five select commodities in three countries		material / progress reports of sustainability initiatives / company and NGOs websites assessing companies' performance					
2 Reduce ket barriers 1 Gender table control roductive ts and urces	5 business platforms and 20 businesses and service providers develop and implement business models that are more inclusive, economically viable and environmentally sustainable	Finalized a typology of business models for timber and tree crop commodities, based on their economic, environmental, social performance and related trade-offs, looking across situations in four high-value tree crops	1	Paper with a typology of business models for timber and tree crop commodities / infobrief with main research lessons / blogs and other media material	**1**	0	1	1	**L**
2 Reduce ket barriers 1 Gender table control roductive ts and urces	At least 30% of financial service providers lending to timber, tree and agricultural crops adopt ESG criteria, and increase in 25% the lending to models that integrate smallholders and SMEs	Available metrics and tools that enable FSPs to better evaluate the social and environmental performance of their financial portfolios	1	Policy papers with metrics and tools for better evaluating performance of financial service providers' portfolios / minutes from attendance to specialized fora and conferences / minutes from	**1**	0	1	1	**M**

				participation in key responsible finance platforms / websites of financial institutions					
1 Land, water forest adation mized and rsed 3 Conducive cultural policy ronment	(Sub)national governance systems in at least 10 countries use contextualized theories of change to guide transitions to integral achievement of sustainable development goals through restoration, conservation and management of landscape multi-functionality, using similarity domains based on patterns and intensities of forest and tree cover change in space and time in sentinel landscapes understood on the basis of 'drivers' that operate at larger scales.	Second round surveys of conditions and trends in sentinel landscapes completed, changes documented, interpreted, and linked to national SDG reporting systems.	1	1) Website availability of spatially explicit open-access data sets on conditions and trends of forest and tree cover change linked to liveli-hood opportunities 2) Development plans of local governments and sup-porting agencies that utilize FTA results 3) Process studies docu-menting and critically analyzing degrees of participation (incl. gender and youth representativ	**1**	1	1	1	**M**

				es) in planning processes					
1 Land, water forest adation mized and rsed	Sub)national governance systems in landscapes covering 100 M ha and inhabited by 70 M people use quantified and valued functions of FT&A for biodiversity, full hydrological cycle and ecosystem services analyzed across knowledge domains and available for policy-level synthesis and planning.	Reevaluation of cobenefit relations among global conventions (CBD, UNCCD, UNFCCC) at landscape scale, utilized in international discourse	1	1) Website availability of studies, process-level and spatially calibrated heuristic models on FT&A ecosystem services at multiple scales 2) Reference to FTA results in global synthesis documents such as IPBES and IPCC	**1**	1	1	1	**L**
1 Increased ability of rse nutrient- foods 2 Increased ss to diverse ient-rich ls 1 Gender table control roductive ts and urces	Diverse diets from tree cover in mosaic landscapes recognized and enhanced as contributions to balanced diets through Increase of availability, and access to, nutrient-rich wild and cultivated food products from these landscapes (10 sentinel landscapes 10 M people).	In at least 5 countries: Increased value capture by producers/collecto rs of nutrient-rich food reduced post-harvest losses of wild and cultivated nutrient-rich food increased incomes and employment	1	1) National SDG statistics at subnational scale for countries targeted by FTA, with explicit comparators/ counterfactua ls 2) Website availability of reports, typologies, databases and diagnostic	**1**	1	1	1	**L**

				tools, and documented evidence of their use 3) Recognition in high-level policy documents of the relevance of landscape diversity for balanced nutrition (against a baseline of virtual zero before 2015)					
1 Gender table control roductive ts and urces 3 Improved city of en and g people to icipate in sion-making 1 Increased ience of agro-ystems and munities, cially those ding llholders	Adaptive landscape institutions empowered and supported on 6 M ha inhabited by 4 M people to manage changing landscape mosaics towards more balanced and adaptive multifunctionality and successful 'forest landscape restoration' through 'action research' and inclusive, participatory learning. This is aligned with efforts in PIM.5.2 -oe6 million	Impact study of the further development and use of the LUMENS tool for participatory planning of land uses providing multiple environmental services. Cost-effective, multiscale and participatory protocols for monitoring viability of restored forests developed and adopted by key countries and other stakeholders.	1	1) Website availability of objectives, context and evolving lessons in the various learning landscape networks 2) Publicly available synthesis documents and impact studies 3) Documented use of the typologies that emerge from the learning landscape networks	**1**	1	1	1	**M**

	hectares of shared landscapes under more productive and equitable management.								
1 Reduced GHG ssions from culture, sts and other s of land use	Efficient, effective and equitable climate national and international mitigation policies and funding, aligned with development objectives (3E+ goals).	Analysis available to increase effectiveness and efficiency of results-based climate finance and used (e.g. by Green Climate Fund)	1	Policy briefs documentation of stakeholder dialogues, GCF strategy documents and work logics	**1**	1	1	2	to M Low because at country level policy making continues and GCF continues its REDD+ Pilot programme M because at int'l policy level: no decisions at COP25 on Warsaw Framework and Article 6 which negatively affects international REDD+ processes
4 Enhanced acity to deal climate emes	Risk-assessed ecosystem-based adaptation (EbA) policy and practice in place including joint mitigation and adaptation approaches	Mechanisms to strengthen local capacity to respond with EbA comparatively assessed across scales and used in case studies	1	scientific publications and policy briefs (FTA and CG center websites) case study	**1**	1	1	2	**L**

				reports, e.g. from NGOs, on progress in local capacity for adaptation					
1 Reduced GHG missions from ...culture, ...sts and other ...s of land use	Food and bioenergy production policy and practice integrated more visibly in the intervention areas.	Analysis of impact of bioenergy on social and environmental outcomes available to countries and supporting policy making for sustainable bioenergy production	1	scientific publications and policy briefs (FTA and CG center websites) national reports	**1**	0	1	2	**L**
1 Reduced GHG ssions from ...culture, ...sts and other ...s of land use	Performance assessment of mitigation and adaptation policy and practice widely implemented following good evaluation practice.	First round of impact assessment of REDD+ policy and practice concluded	1	scientific publications and policy briefs (FTA and CG center websites) book on the topic	**2**	1	2	2	**L**

3: Planned Evaluations/Reviews, Impact Assessments and Learning Exercises

Column 2 FP (if not overall CRP)	Priority	*Column 3* Status (ongoing, new)	*Column 4* Planned studies/learning exercises in the coming year	Column 5 Geographic scope	*Column 6* Who is commissioning this study
1	*1, 3, 4, 19, and 25*	*New*	*A Review of Flagship 1 outcomes 2017-2019*	Global	*FTA/FP1*
1	*1, 4, 19 and 25*	*New*	*Ex-ante impact assessment of the project 'Provision of Adequate Tree Seed Portfolios' (PATSPO) in support of landscape restoration and a climate resilient green economy of Ethiopia. Sub-study of review of FP1 outcomes*	National - Ethiopia	*FTA/FP1 and PATSPO*
1	*1, 3, 4, 19, and 25*	*New*	*Assessment of the socioeconomic impact of applying appropriate diversity of selected species for relevant land restoration options in Ethiopia and other areas of Africa*	Regional - Africa	*FTA/FP1 and PATSPO*
2	14	new	Effectiveness study on the extent to which improved management of tree cover in agricultural landscapes increases resilience of livelihoods and landscapes.	Regional - Africa	FTA special initiative building on GEF funding via UNDP and IFAD / EU funding to the CGIAR
2	14	new	Effectiveness study on the socio-economic performance of agroecological options in comparison with alternatives.	Regional - Africa	French Department of Foreign

					affairs in concert with an FTA special initiative
3	P02, P18, P20	new	Assessment of CIFOR's Oil Palm Research (2015-2020) (Assess whether and how CIFOR has influenced palm oil policies in Indonesia since early 2015)	Indonesia	CIFOR (FTA involvement)
4	*9*	*new*	*Effectiveness Study/ lessons learnt on performance-based finance experiments on community forest enterprises in Cameroon.*	National - Cameroon	*Flagship Leader and Principal Investigator*
5	*5*	*New*	*Global Comparative Study of REDD+ (GCS REDD+) endterm review: Assessment to be done by external consultant, to be concluded in 2020, under guidance of CIFOR Research-to-Impact team*	Global	*CIFOR as mandated by contract with the Norwegian Agency for Development Cooperation (NORAD)*
5	*5*	*New*	*Assessing the impact of CIFOR's research on National Payment for Forest Environmental Services (PFES) policy in Vietnam and its Environmental and Socio-economic Impacts*	National - Vietnam	*CIFOR with support from CGIAR Standing Panel on Impact Assessment (SPIA), tbc.*

3	*2*	*New*	*Impact assessment and prospects for agroforestry systems - Rubber Agroforestry systems in Kalimantan, Indonesia*	National - Indonesia	*CIRAD*
1 and 4	*1, 4, 8*	*New*	*Study on the use of Bioversity restoration tool by local actors*	Global	*Bioversity*
ALL	*5, 8, 18 (mainly)*	*New*	*Integration Study to assess FTA Contribution to the protection of forests and reduction of deforestation*	Global	*FTA MELIA*
ALL	*2, 8, 11, 12, 13, 14, 15, 19 (mainly)*	*New*	*Integration Study to assess FTA Contribution to the reduction of rural poverty, and improved livelihoods*	Global	*FTA MELIA*
3	*18*	*New*	*Study to assess progress along emblematic FTA Impact Pathways: Supporting public and private commitments to zero deforestation*	Global	*FTA MELIA*
4	*1 and 9*	*New*	*Study to assess progress along emblematic FTA Impact Pathways: formulating and implementing national policies (National Agroforestry Policy in Nepal)*	National - Nepal	*FTA MELIA*
2	*2, 11, 14*	*New*	*Study to assess progress along emblematic FTA Impact Pathways: the role of trees in agriculture*	Global	*FTA MELIA*

C: Planned major new collaborations (CGIAR internal, or with non-CGIAR collaborators)

RP or non-CGIAR or	Brief description of collaboration (give and take among CRPs/PTFs/non-CGIAR collaborator) and value added (e.g. scientific or efficiency benefits)
of Kyoto	Developing a joint concept for the circular economy approach
ewable Energy	Developing a joint concept for the circular economy approach
al Governments for ity	Developing a joint concept for the circular economy approach
t of Sri Lanka	Implementing a new Green Climate Fund Readiness project for climate change finance. This would help analyze governan options for climate and landscape finance in the central highlands of Sri Lanka
t of Cameroon	Jointly developing a set of Green Climate Fund proposals for climate change implementation in key landscapes. This inclu second readiness for climate finance in a growing portfolio
rship on Cocoa work in Cameroon	A new partnership will commence through a cocoa landscape study in Cameroon. Previous collaborations had taken plac Indonesia, Vietnam and Cote D'Ivoire. This new partnership gives the opportunity to initiate a comparative analysis acros landscapes in these countries involved so far
nvironment and earch Institute *(EEFRI)*.	Within the African Orphan Crops Consortium, new partnerships have been developed with the Ethiopian Environment an Research Institute (EEFRI). EEFRI in collaboration with FP1's PATSPO and AOCC programs is contributing to providing ger Ethiopian food tree species of priority to AOCC for developing the genomic resources (Sequence information and SNP pa These resources will be of value not only for Ethiopia but for the rest of Africa which have the same species and want to panels for their breeding programs
utsche Gesellschaft ationale arbeit)	GIZ is working closely with FP 1 Nutrition Priority and starting to upscaling the food tree-crop portfolios in their developr program in Somalia. The advantage of a development agency using our innovation in their work on ground show cases th our outputs.
ional de Semences (CNSF), Burkina Faso	With CNSF, FP1 is developing a Seed system (PATSPO like) program to address Burkina Faso's 5 m Ha restoration commit same is envisaged for other Sahelian countries. Partnerships with different government agencies are now being develop through CNSF connections with the aim of developing a GCF and a GEF program.
EverGreening Alliance	FP1 has developed a partnership with The Global EverGreening Alliance that has brought together 25 leading research, t and development organizations together to harness their collective energies. It therefore provides a collaborative platfo support and facilitate massive-scale environmental restoration and sustainable agricultural intensification efforts and for

	mitigating and adapting to the impacts of climate change at a globally-relevant scale. FP1 will use this platform to upscale technologies through the different developmental partners and NGOs.
national Business e - DIBCoop	DIBcoop is a business and development organization that deals with inclusive agri-business is an effective way to alleviat and contribute to the flourishing of emerging economies and developing countries. FP 1 collaboration with them will ber their extensive experience in both public and private sector in the Sahel
sKarlshamn)	AAK is a Swedish-Danish company with more than 140 years of experience of innovating and customizing solutions based vegetable oils and fats. AAK has invited FP 1 Leader and CoA leader to be on their Board for Shea development. This is a honor for FTA as in the Sahel, AAK is the largest collector of Shea nuts for the global market for chocolates, cosmetics, so Collaborating with experts across the value chain from generation to launch will help FP1 not only seize new research op but also contribute to overcome challenges faced in shea production.
he Food and Organisation of the ions (FAO) and United vironment (UNEP)	Development of a collaborative transformational partnership programme on agroecological approaches to building resili livelihoods and landscapes. This brings a range of institutions that already partner in an ad-hoc fashion together to accele co-ordinate their work on agroecology across international, national and local scales with the aim of fostering transitions sustainable agricultural and food systems.
r Land and Ecosystems)	Forests, Trees and Agroforestry and WLE Capacity Development teams will produce a compendium of restoration tools a empowering and equipping restoration professionals to benefit from a wide variety of Forest and Landscape restoration have been tested and applied in field to evaluate, plan, design, implement and/or assess restoration efforts.
' Climate & Forests sk Force	Description: Providing support in mainstreaming gender in jurisdictional approaches to combatting deforestation at sub-state/provincial level, responding to request from GCF task force members Value added: Direct uptake of FTA research and evidence-based recommendations in sub-national governance, builds on CIFOR engagement with the task force

n on Biological	Description: Co-developing trainings and initiatives to support gender integration in the post-2020 Global Biodiversity Fra... Value added: Direct uptake of FTA research and expertise in global policy process
ler Constituency	Description: Coordination of the constituency Value added: Deepening engagement with key stakeholders in restoration; expanding reach and uptake of FTA research
	Description: Supporting the secretariat with evidence on gender and climate change, contributing to capacity-building eff... constituted bodies, and other relevant activities mandated in the Gender Action Plan Value added: Direct uptake of FTA research and expertise in global policy process
n	Description: Sharing data and evidence, co-developing background papers, co-organizing capacity building workshops on... addressing gender across the Rio conventions Value added: Leveraging FTA's scientific expertise and UN Women's longstanding engagement with global policy proce... targeted, relevant and evidence-based policy recommendations.
	Description: Co-funding work on gender-responsive Multi-Stakeholder Forums Value added: Leveraging resources; coordinating gender and restoration work across the CG
	Description: Co-funding studies on gender and restoration Value added: Leveraging resources; coordinating gender and restoration work across the CG
e African Group of gotiators Experts	Description: Providing support on the governance of climate change at the UNFCCC level as well as at the level of impler... on the ground. The partnership involves innovative work on defining adaptation progress measures for Africa over the nex...
form for Sustainable r Rubber (GPSNR)	The Plantation Priority 02 in FP3 includes a rubber plantation science initiative to: i) perform a global comparative analys... smallholder rubber farmers (Asia, Africa and Latin America), and ii) assess environmental and social sustainability issues... determine the nature and formulation of a certification standards protocol. CIFOR and CIRAD joined the newly formed G... Platform for Sustainable Natural Rubber (GPSNR (https://www.gpsnr.org/) and the P2 rubber team currently participa... of its working groups to achieve the two initiatives. These will contribute to the FP3 outcomes as well as the goals and pla... GPSNR.

Planned Budget

s to non CGIAR partners: FTA Foresees to allocate in 2020 USD 1,206,000 of W1+2 to the 4 non CGIAR program partici
AD, CATIE, Tropenbos, INBAR). In addition to this, the 4 CGIAR Centers in FTA do make use of a substantial amount of W
o them to mobilize national level expertise, universities, local partners in the research to development continuum. Conversel
tegrate a total of USD 19,911,766 into the program (FP1: 2,065,000; FP2: 3,396,922; FP3: 2,405,000.00; FP4 : 6,631,922; F
, growing from USD 17,422,272 in 2019.
e below, the W1-2 funds to support the workplans on gender (0.7m), capacity development (0.2m), data (0.2m) and MELIA
the FPs. W3/bilateral correspond to 2020 funds/budgets for grants signed on 01/01/2020.

	Planned budget				Comments on major changes
	W1/2	W3/bilateral	Center Own fund	Total	
	1,509,921	11,763,346	0	13,330,635	
	1,749,865	11,395,728	0	13,212,077	
	1,697,236	18,619,038	0	20,380,759	
	1,500,642	16,144,758	0	17,702,415	
	1,438,336	18,468,719	0	19,961,703	
nt and	2,100,000	507,316	0	2,307,316	Includes CRP management, program-level communication and outreach monitoring, evaluation, learning and impact assessment, and support to integration (e.g. cross-FP integrative operational priorities)
	9,996,000	76,898,905	0	86,894,905	

<u>**Annex 1.**</u> FTA's operational priorities [2]

The operational priorities[3] are articulated in the following way: the ultimate **outcomes at household** level of enhanced nutrition and food security and improved livelihoods, including gender (3, 15, 10) are supported by **action in farming systems**: silvo-pastoral systems, market-based agroforestry-forestry, farm-forest policy interface, agroecology, plantations and tree crop commodities (11, 12, 13, 14, 2, 24) and by **coordinated action along value chains** : inclusive finance and business models, innovating finance for sustainable landscapes, public and private commitments to zero deforestation, effectiveness of approaches to sustainable supply like certification and FLEGT (16, 17, 18, 20). They rely on the provision of **appropriate genetic material at scale with support to tree seeds and seedlings delivery systems**, and on **sustainable management of natural resources**: land and forest restoration, biodiversity, safeguarding and conservation of genetic resources, orphan crops, landscape governance (1, 4, 19, 9, 25); They fully **address climate change** and **implementation of the NDCs** both adaptation and mitigation, including zero deforestation, bioenergy and blue carbon and peatlands (5, 6, 7, 8, 18). Three operational priorities **ensure the quality of FTA research for development** (21), monitor a set of sentinel landscapes (22), and on **foresight** (23) aim to identify emerging trends and possible futures for forests, trees and agroforestry systems, and their roles for broader sustainable development objectives.

1. **Restoration** of forests and landscapes, to carry out research on different aspects (from genetic resources, to management modes, costs and benefits, and policy and governance options) and to integrate findings and emerging lessons into the main policy platforms and governance processes.

2. **Plantations**, including timber and high-value tree crop plantations, namely tea, coffee, cocoa, oil palm and rubber, and addressing the economic, social and environmental challenges and opportunities of land-use intensification through plantations.

3. **Enhanced nutrition and food security:** how do tree-based agroecosystems and changing patterns of land use and productive activities at the landscape scale interact with market forces to cause changes in local diets in many countries, and what can be done about it?

4. **Biodiversity, safeguarding and conservation** in forests and agroforestry systems, for productivity and resilience of these systems.

5. **NDCs[4],** supporting countries in meeting their NDC objectives through an improved use of their forests and tree-based resources.

6. **Bioenergy and biomaterials** as an essential part of low-emissions development strategies and policies. How can they be developed, especially in degraded lands, and how to broaden the species basis?

7. **Blue carbon and peatlands**, providing knowledge on eco-hydrology and ecosystem services, on carbon stocks dynamics, and on productivity to devise specific restoration options

8. **Climate change adaptation**: FT&A resources are key to adaptation of forest-dependent communities and agricultural systems to climate change, and have themselves to adapt.

9. **Landscape governance** as it relates to agriculture, forestry and other land uses, and to the livelihoods they sustain

10. **Gender** equitable outcomes, aiming at integrating a gender equality and social inclusion perspective—including attention to issues of generation (youth) across the FTA portfolio.

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[2] The ordering in the list does imply a hierarchy between these
[3] Numbers in parenthesis refer to the operational priorities in the list.
[4] Nationally Determined Contributions of the Paris Agreement on Climate Change

11. **Silvopastoral systems**, for production, fodder, shade, soil fertility and biodiversity. Retaining trees on pastures can halt and reverse degradation following deforestation.

12. **Market-based agroforestry-forestry**, to deliver evidence of the return on investment, and provide practical strategies for overcoming the time-lag between investment and returns.

13. **Farm-forest policy interface**, to better understand policy constraints, and embed FTA methods, approaches, tools and technologies into major national agroforestry scaling-up programs.

14. **Agroecology**, emphasizing integrated agro-ecological approaches that include trees in agroecosystems for improving smallholder livelihoods.

15. **Livelihood trajectory modelling and assessment** to capture the likely impact of adopting FTA innovations on smallholder livelihoods in a range of different contexts.

16. **Inclusive finance and business models**, and related institutional factors to help address barriers faced by smallholders, improve value-chain coordination and learning.

17. **Innovating finance for sustainable landscapes**, to understand the potential of responsible finance for providing incentives for the uptake and upscaling of sustainable production practices

18. **Public and private commitments to zero deforestation**, as still little is known about the actual social, economic and ecological impacts of those commitments.

19. **Orphan tree crops**, to support their genetic characterization and their domestication to improve nutrition, as well as for resilience, adaptation to climate change and environmental stresses.

20. **Effectiveness of approaches to sustainable supply**: to understand the role of supply chain arrangements to halt deforestation, and how territorial approaches can facilitate that process.

21. **Quality of FTA research for development** (R4D), to devise better research, learn from experiments, and improve overall performance of FTA as a research-for-development program.

22. **Sentinel landscapes.** FTA had devised its own set up to observe changes in landscapes, their causes and consequences. Where does this set-up stand? How to move forward?

23. **Foresight**, to identify emerging trends in land use and forests, trees and agroforestry, possible futures and drivers of change, and their potential to contribute to sustainable development.

24. **Smallholder tree-crop commodities,** to address the challenges and leverage the potential of cocoa, coffee and other smallholder tree-crop commodities for sustainable development.

25. **Tree seeds and seedlings delivery systems**, to address the considerable needs for appropriate tree planting material at scale to face the challenges of renewal and improvement of current trees, the need to adapt to climate change, to contribute to its mitigation, and to restore forests and land.