CGIAR Research Program

on Forests, Trees and Agroforestry (FTA)

# Plan of work and budget (POWB) for 2019

Draft version submitted for comments and review by the ISC

(17 January 2019)

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## 1_Adjustments / Changes to the Theories of Change (ToC)

There were no significant changes to FTA's theory of change[1]. FTA work planning is based on a priority setting process, aiming at focusing research towards major development demands and knowledge gaps, orienting FTA towards the implementation of the SDGs and other global commitments. The 22 operational priorities of FTA, as elaborated for the 2018 POWB (see list in Annex 1) build on the comparative advantages of FTA and its partners in order to maximize effectiveness and impact. No change was made this year on the list of operational priorities and they set the frame for the 2019 PoWB. The mapping of the 22 operational priorities to the theory of change of FTA will be fine-tuned on course of 2019 together with the revisions of the impact pathways and if need be, corresponding adjustments to the ToC of FTA and/or its FPs will be made in 2019 for 2020-21.

## 2_Plans and Expected Progress Towards Outcomes

In 2019 FTA will roll out the first year of the three-year workplans 2019-2021. A 3-year indicative workplan was crafted for each of the operational priority and FP's 2019 workplans are determined by the contributions to these.

FTA will review in 2019 its impact pathways, milestones and end-of program outcomes to factor-in the disappearance of the year 2022 of the CRPs (CGIAR Business Plan measure), as well as the lower than expected W1-2 funding. W1-2 funding received by FTA in the 2 first years of phase 2 was 25% lower than in the approved proposal, despite a good performance in raising W3/Bilateral in line with the approved proposal.

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

Leading the priority on **Biodiversity, safeguarding and conservation**, FP1/CoA1 will support conservation and sustainable use of priority tree species including bamboo and rattan, through scaling up to include more species, areas and geographies; supporting countries and regions to implement dynamic Genetic Conservation Units for TGRs in Asia, Latin America and Africa with specific efforts in the Philippines, Peru, Burkina Faso and Ethiopia. In 2019 FP1 will scale-up threat assessment tools for priority tree species in Latin America and Africa to cover more than 100 species. Through evaluation of the diverse values of TGRs for delivery of multiple SDGs, FP1 will provide critical knowledge to support priority setting, and also more sustainable use of native tree diversity for multiple benefits, including trees as foundation species for biodiversity, and is central to enhancing biodiversity as part of resilient and sustainable production systems which include other plants, as well as animals including insects.

[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.

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Leading the priority on **Orphan crops**, FP1/CoA2 will promote the integration of new and orphan food trees, including *Faidherbia albida*, *Sclerocarya birrea*, *Moringa oleifera*, *Vitellaria paradoxa*, *Ziziphus spp*. and *Adansonia digitata* into evolving African food systems using enhanced domestication approaches. Improving genetic and phenotype knowledge, enhancing quality as well as productivity of tree-based foods are vital for food and nutritional security. FP1 contributes to the African Orphan Crop Consortium in providing genome sequencing for these orphan crops. To drive their integration into African food systems, FP1 will in 2019 strengthen its focus on genetic improvement approaches, on barriers and on leveraging opportunities for the integration of orphan crops in food systems, such as accelerating domestication, business models for investments, wider cultivation of orphan species (especially in the context of needed adaptation to climate change) and developing markets for related tree-based foods.

Leading the priority on **Enhancing Food security and Nutrition**, FP1 will work on the characterization of the diversity of edible products derived from trees and other species (along the forest transition curve), their nutrient composition, their seasonality, their uses (indigenous/ other knowledge) etc. in different geographies. The current focus is primarily on African countries (Burkina Faso, Benin, Kenya) with the ambition to target other regions. Secondly, efforts will be devoted to properly communicating and disseminating evidence derived from past and current data (e.g. literature reviews on nutritional value of tree foods, documentation of data gaps on food consumption and dietary quality among different communities and populations, etc.) to provide recommendations for agriculture-nutrition integration. Thirdly, efforts will be made to promote the grow of African orphan foods into home gardens but also market development to improve nutrition. Where relevant, inclusion of tree species with nutritious foods will be incorporated into restoration guiding tools. Gendered knowledge and preferences of food trees for restoration, income generation and food security will be mainstreamed into this priority. Finally, a workshop on markets, landscapes and nutritious diets will be co-organized with FP4, involving multiple partners across FTA, A4NH and other external experts to assess current understanding and define a joint research for impact strategy.

Contributing to scaling up delivery of TGRs to support resilient restoration is central to FTA outcome targets. Co-leading the priority on **Restoration**, FP1/CoA3 will evaluate the status of national tree seed systems in Sub-Saharan Africa and provide knowledge to build policy, capacity, and mass breeding infrastructure to deliver suitable, genetically diverse and quality seed for restoration. The evaluations of these African tree seed systems will be conducted and reviewed with national partners to identify critical policy needs for improvement. Novel information technologies that support documentation and verification of seed systems, user-friendly decision support tools and deployment of adequate tree portfolios serving multiple purposes will be applied based on earlier work of FTA, like the vegetation map for Africa with associated tools, the restoration tool for tropical dry forest in Columbia, and update of the Agroforestry Species Switchboard (as presented at GLF in December 2018).

## FP2 Enhancing how trees and forests contribute to smallholder livelihoods

FP2 leads five operational priorities on agroecology (CoA 4), livelihood trajectories (CoA1), market-based agroforestry (CoA2), farm-forest interface policy (CoAs 1 and 2) and silvopastoral systems (CoA 5). It also co-leads the plantation tree-crops priority with FP3 and FP4 and contributes to the land restoration priority through connections with these six other priorities. Key progress planned for 2019 in each of these are as follows.

***Agroecology***. Following unprecedented public engagement during the open consultation on an initial draft of the agroecology report for the High-Level Panel of Experts (HLPE) of the UN Committee on World Food Security (CFS) in 2018 led by FP2, the report will be completed and launched during 2019 with key conclusions presented at a plenary session of the 4th World Congress on Agroforestry in Montpellier in May. The report will serve as basis of the multilateral discussions at the CFS in October 2019. Through a novel initiative on agroecological control of the fall army worm epidemic in Africa funded by Norway, FP2 will establish cross-scale trials of control measures involving interventions at field, farm and landscape scales in Zambia and Malawi. Since the pest was first detected in Africa in 2016 it has spread across the continent causing an estimated USD 13 billion in crop losses, threatening food security and livelihoods of many smallholder farmers. Effective agroecological control will not only reduce crop losses but also avoid farmers becoming dependent on expensive chemical control and its associated environmental impact. FP2 will also start addressing a key emerging tension in agroecology between social movements and science, through a new partnership with the State Government of Andhra Pradesh that will involve impact assessment of their ambitious zero budget natural farming (ZBNF) initiative, coupled with transdisciplinary research on the science underpinning farmer practice to understand potential for out-scaling.

***Livelihood trajectories***. Key insights were gained from developing simulation models of potential impacts of different agroforestry interventions on food security and exits from poverty in 2018 across different farming contexts. During 2019 data from extensive planned comparisons ongoing with over 5000 farmers in Kenya and Ethiopia will be used to develop and paramaterise hybrid models that incorporate the globally calibrated APSIM crop model with participatory modelling of smallholder livelihoods locally, using the Simile modelling environment. This will generate new advice on design principles for agroforestry options that can make livelihood impacts and the species, densities and configurations of trees required in different contexts to do so. This will be coupled with new research on how these interventions differentially impact men and women. In Indonesia, analysis of impacts of migration on the feminization of agriculture, agroforestry and forestry will be initiated, working from analysis of past experience using longitudinal datasets.

***Market-based agroforestry***. Progress will continue in the design and evaluation of market-based agroforestry options on fast-degrading sloping land in northwest Vietnam and integration of non-timber forest products and intercropping with silviculture in Indonesia. Key outputs will include analysis of option suitability across ethnic and gender divisions and integrating the value of avoiding degradation with income benefits, that will feed into the land restoration priority. Formal comparison of the efficacy of different

value chain development interventions targeted at women and young people through development and aggregation of innovation platforms for coffee, honey, tree fodder, village chickens and beans will be produced for Uganda and Zambia using novel multi-value chain approaches as an alternative to specialisation.

***Farm-forest interface policy***. Having been instrumental in establishing national agroforestry scaling strategies and policy processes in Ethiopia, Rwanda, Uganda and the Comoros in 2018, the FP2 research focus shifts in 2019 towards consolidating at national level while addressing policy implementation gaps across layers of governance, including reconciling trade-offs amongst ecosystem service impacts at local landscape scales (10-1000 $km^2$) for which appropriate policy instruments and structures are lacking globally. Innovation in application of the land degradation neutrality (LDN) concept across scales, development of locally appropriate indicators and means to assess differential impact by gender and resource endowment, will feed into the land restoration priority. Through embedding a planned comparison of the efficacy and cost-effectiveness of incorporating an options-by-context approach into rolling out the implementation of the new agroforestry concession scheme in Peru, FP2 will simultaneously make impact, measure it and generate new understanding about what is needed to achieve uptake and livelihood impact. A new initiative in northern Ghana, building on results from the IFAD-funded West Africa Farm Forest Interface project, will embed a formal comparison of the efficacy of including gender transformative actions in a major EU-funded regreening programme on both ecological and livelihood outcomes.

***Plantation tree-crops***. FP2's contribution to this operational priority is to develop and evaluate climate-smart diversification options for smallholder oilpalm, coffee and cocoa production systems. This includes fundamental research on the ecophysiological basis of climate change impacts on coffee and cocoa in East and West Africa, Cocoa swollen shoot virus (CSSV) control and the role of companion trees in mitigation, to inform locally appropriate adaptation action. The focus on oilpalm in Brazil will incorporate a stronger focus on the economic value of diversification to complement what has already been established in terms of environmental benefits. Major developments in coffee will include guidelines for incorporating companion trees for 150,000 ha in China based on advances in ecophysiological understanding of climate change impacts, co-development of coffee agroforestry options for 70,000 ha of coffee agroforestry across the Bolaven Plateau in Laos and design of an ACIAR-funded coffee agroforestry research and development strategy for the central highlands with the Vietnam Coffee Co-ordination Board.

***Silvopastoral systems***. FP2 will work on the development of climate smart silvopastoral system options for Central America, evaluating tree fodder value of a range of tree and shrub species including bamboo globally, and in developing livestock management options to enable tree regeneration in Africa.

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

In 2019, FP3 leads or co-leads five of FTA's operational priorities, sharpening the thematic focus of the work, as well as the selection of geographies, policy dialogues and multi-stakeholder platforms for engagement, in order to promote greater integration to facilitate the achievement of expected outcomes.

Leading the priority on **public and private commitments to zero deforestation**, FP3/CoA1 will in 2019 finish data collection and analysis of the social and environmental outcomes and impacts associated with zero deforestation and restoration commitments in seven jurisdictions in Brazil, Colombia, Peru, Ghana, Indonesia and Malaysia. Moreover, it will undertake multi-stakeholder consultations and focus group discussions to identify local and external actors' perspectives regarding upgrading and upscaling those commitments to enhance their positive impacts and mitigate the negative ones at scale. A comparative analysis between the different case studies will enable us to propose pathways to strengthening jurisdictional approaches aimed at achieving zero deforestation and enhance forest landscape goods and services, with lessons for other countries and jurisdictions.

Leading the priority on **Effectiveness of approaches to sustainable supply**, FP3/CoA1 will deepen its analysis on the potential for applying FLEGT-type approaches for legality verification to internationally traded agricultural commodities. The operational priority will furthermore examine opportunities for leveraging and building complementarities with existing private standards in order to better inform the development of FLEGT-type approaches in other sectors and safeguard against undesirable regulatory spillovers.

Leading the priority on **Inclusive business models**, FP3 (CoA2 and CoA3) will analyze the performance and impacts of 3 business models per study country (Ghana, Tanzania, Peru and Indonesia) across the timber, cocoa, oil palm and coffee value chains at the level of the household and the landscape, using a combination of methodological approaches. Drawing on the conceptual framework developed in 2018 and a comparative analysis of results, FP3 aims to link specific business model design features to their potential impact. This will yield valuable insights into scalable and replicable business model development strategies that will enable us to assist private sector and development practitioners in designing business models that are both pro-poor and environmentally responsible.

Leading the priority on **Innovating finance for sustainable landscapes**, FP3/CoA3 will in 2019 focus on finance within landscapes. It will develop a financial flow analysis tool for landscapes, followed by selected case studies of such flows in Ghana and/or Colombia (depending on funding), combining existing documentation with network analysis. The work will be performed within the context of climate smart landscape approaches, which will use the results to boost their landscape investment plans. FP3/CoA3 will also develop a framework to analyze risk management strategies employed by SMEs in landscapes, in order to develop a proposal for further analysis and development of risk reduction strategies in 2020 and 2021.

The priority on **Plantations and tree-crop commodities** is undertaken in collaboration with FP2 and FP4, with FP3/CoA1 focusing on large-scale timber, rubber and oil palm plantations. FP3, in collaboration with partners, will assess the temporal and spatial dynamics over past decades of plantation expansion. A synthesis of the worldwide supply and demand of these commodities will provide insights on the future of these markets and plantations. A selected number of "hotspots" for each commodity will be identified, where challenges to sustainable production will be studied in details.

## FP4 Landscape dynamics, productivity and resilience

FP4 leads three operational priorities, co-leads the nutrition and landscapes priority, and contributes to another set of four.

Leading the priority on **Sentinel landscapes (SL)**, FP4/CoA1 will finalize the synthesis of case studies of 3 sentinel landscapes carried out in 2018 in Kalimantan (Indonesia), Southern Cameroon, and in Nicaragua-Honduras. Secondly, FP4 will lead the analysis, design and validation of a portfolio approach to SL with a view to enabling better geographic co-location of work within FTA and with other programs. This will draw on the lessons learnt from phase I of FTA, on the recommendations of the 2019 FTA-ISC workshop on the matter, from inputs from across the research program and analysis of the past and current FTA project portfolios.

Leading the priority on **Restoration**, FP4 will coordinate the implementation for FTA of the joint work program with PIM and WLE, an outcome of FTA-PIM-WLE cross-CRP workshop organized in September 2018. FP4/CoA2 will finalize its work on restoration typologies that began in 2018. FP4 will also endeavor to make important new contributions in the areas of cost-benefit analysis, participatory frameworks for monitoring restoration, and developing a compendium of methods for planning restoration and the governance of restoration through forests, trees and agroforestry in Africa, Asia and Latin America. The work on restoration will also contribute to the operational priorities on climate change adaptation, NDCs, Bioenergy and on plantations.

Co-leading the priority on **Enhanced nutrition and food security**, FP4/CoA3 will investigate the contributions of Forests, Trees and Agroforestry landscapes to diets and nutrition in Africa and Asia. It will include new data and analysis on tree portfolios and diets in Ethiopia and Uganda; analysis of the impacts of land use change on diets in Indonesia; and how markets and foodsheds interact to shape diet quality in various settings. FP4 will co-organize with FP1 and external partners a workshop to synthesize existing knowledge on the relative contributions of landscapes and markets to healthy diets, to discuss the implications for policy and for future FTA research in this area.

Leading the priority on **Landscape governance**, FP4/CoA4 will deepen its work on analyzing options for enhancing landscapes' governance, starting and concluding a review of incentives linked to restoration as

well as begin experiments on incentives in selected landscapes, with a view of learning and eventual incorporation into future restoration efforts. Some practical work on designing and enhancing governance in the context of community land use enterprises and performance-based approaches and mechanisms will be given specific attention. Some work will also be done on linkages between global discourses and local realities in key governance areas. On these issues, FTA will seek in 2019, among other through a collaborative synthesis process, to better define and leverage its interface with PIM.

Contributing to the operational priority **on plantations and tree-crop commodities**, FP4 will finalize analysis work on the contributions of tree commodities and tree commodity landscapes to multiple SDGs in Africa and Asia in a special issue in Sustainability Science Journal. This work draws from several FPs including particularly FP5. It will also carry out important work on the economics of ecosystems services in tree commodities with case studies from Ethiopia and Ghana on coffee and cocoa respectively. A writeshop will be held to outline a book on tree commodities and African economies with a view to setting up the work for 2019.

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

FP5 takes the lead in four operational priorities. Leading the priority on **NDCs** (Nationally Determined Contributions of the Paris Agreement on Climate Change), FP5 will support country-led implementation of NDCs by leveraging what forests, trees and agroforestry can do to help countries meeting their climate change mitigation and adaptation objectives. FP5 has expanded, to include more countries in its analysis on how they can improve forest-based climate mitigation in their NDCs. After having launched a major piece of analysis in 2018, the book Transforming REDD+, FP5 will pursue analysis of REDD+ initiatives at country level in the context of NDCs and is stepping up in 2019 – with partners EII and Governor's Task Force for Forests and Climate – its work on analyzing jurisdictional approaches and providing sustainability assessment tools for jurisdictional policy makers. A new case study will look at challenges of Voluntary Carbon Market (VCS) REDD+ projects. We also will develop frameworks that help understand the level of readiness of countries for implementing NDCs effectively; this understanding is instrumental in the effective use of limited resources. Furthermore, we work very closely with peatland countries on how they can improve, in their NDCs, pathways to implementing emissions reductions in peatland. We support our mitigation work with continued work on refining the resolution used in our monitoring tool, Terra-I; we are supporting the development of sound standards to include bamboo in carbon budgets, and we undertake research to understand drivers of deforestation at the national level. FP5 will continue promoting mitigation policies at subnational, national and international levels.

Leading the priority on **Blue carbon and peatlands,** FP5 will expand the current focus on carbon reference level determination and inclusion in NDCs in its SWAMP (Sustainable Wetlands Adaptation and Mitigation) Project, with a stronger emphasis on integrating social and livelihood aspects into sustainable management options. Continuing on carbon, FP5 will refine FTA's global wetlands map by validating its peatland

component in Latin America; and will generate new knowledge on peatland eco-hydrology and ecosystem services, and on carbon stocks dynamics and net primary productivity of rewetted peat as a peatland restoration option. The work on livelihood options includes developing options for sustainable crop management and bioenergy. Our work will draw attention to peatlands as the 'missed frontier of emission reduction'. In this context, FP5 will support the establishment of the International Tropical Peatland Center, headquartered in Indonesia but involving Peru, DRC and Republic of Congo, in addressing global tropical peatland problems, and by providing support with setting up the center, developing the work plan and fundraising.

Leading the priority on **Adaptation**, FP5 will undertake a host of analytical work addressing the role of ecosystem services in adaptation to climate change. Research will look into how to build the adaptive capacity of communities to likely changes in climate and weather variability and the immensely grown need for reducing the vulnerability of the same communities to climate change. We further support adaptation by using bamboo and its products, in this case by a study of bamboo-water dynamics in four countries (India, Thailand, Ghana and China) that will be concluded in 2020. FTA will further finalize two joint publications with FAO on (i) A Framework Methodology for Climate Change –Vulnerability Assessments of Forests and Forest-dependent People, and on (ii) Addressing Forestry and Agroforestry in National Adaptation Plans. These publications will feed both in UNFCCC and FAO-led policy processes.

Leading the priority on **Bioenergy and biomaterials**, new work will focus on how to propel a circular bio-economy for climate-smart development for key value chains (addressing the integrated development of climate-smart low emissions value chains (food, feed, bioenergy, biomaterials) with a focus on bioenergy). We will study how – and to which extent - bioenergy can substitute fossil fuels while minimizing competition with food production, nature, water and biodiversity conservation. As environmental and social costs of energy are becoming very high, the wider livelihood system is affected in multiple pathways; hence, we will do work on adopting ecosystem-based approaches to bioenergy that are critical to reduce the extent of the tradeoffs resulting from the bioenergy promotions happening in numerous developing countries. We continue to work also on the bioenergy applications of bamboo especially in Indonesia.

## MELIA - Monitoring, Evaluation, Learning and Impact Assessment

In 2019, **FTA's work on Monitoring, Evaluation, Learning and Impact Assessment (MELIA)** is focusing on evaluating and assessing (both ex-post and ex ante) FTA investments in restoration, to examine projects outcomes and longer-term programmatic impacts of past FTA investments in restoration work. This will include an outcome evaluation of FTA forest restoration project in Ethiopia, one ex-post impact assessment of the contribution of FTA agrobiodiversity research to forest restoration approaches. Also, MELIA will undertake two pieces of work which will enable it to make more strategic longer-term plans for evaluation and impact assessment work across the program: the review and update of FTA's Theory of change, and the set-up of a process to more systematically review and identify FTA innovations on which to focus ex-ante

impact assessments. Finally, the cluster will support the FTA Management Support Unit (MSU) in the piloting and implementation of the CGIAR program performance management standards.

There is high demand from society, donors, research managers and researchers themselves for evaluation and evidence of development impact of research: the Independent Steering Committee (ISC) of FTA will host a workshop on impact assessment methods in the area of research on natural resources management, policies and institutions, to improve understanding on Conceptual models of NRM and policy research impact pathways, causality perspectives and evidence requirements. This will lead to recommendations for FTA as well as the broader community.

### Gender

In 2019, **FTA gender work** will consist both of activities for mainstreaming gender into FTA's operational priorities with a special emphasis on FTA's restoration work, as well as research focused specifically on gender relations (strategic gender research). Amongst the highlights: related to land restoration, FTA will undertake a series of gender assessments of land restoration options in different contexts, and a comparative analysis of gender outcomes of restoration initiatives across different regions, including a study on the links between gender equality and biodiversity outcomes under different restoration approaches. Supported by the CGIAR Collaborative Platform for Gender Research, FTA will begin a cross-country study on 'Strengthening the evidence base on Gender and generational dynamics in land restoration amid male out-migration'. Linked to its operational priority on NDCs, FTA will work on options to 'engender' climate finance to promote social inclusion, with a case study in Indonesia. Finally, FTA's gender team will support FTA research teams in gender analysis and integration in proposal writing, such as on Horizon2020 and yearly BMZ calls, and will develop tools and knowledge products that help scientists address gender and youth dimensions. These will include a training module for project and country staff on gender and resilience or restoration, and an M&E framework for inclusion in the GEF Integrated Approach Pilot project.

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

The financial plan for FTA is 0.5m lower than in 2018, including the 15% stretch target of the CGIAR FINPLAN.

At the request of ISC, FTA has been implementing a contingency planning process in its POWB since 2017. As per this process, W1+2 and the related 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 2019 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.

At the beginning of 2019, FTA Partners are expected to initiate Tier 1 and Tier 2 activities (in some instances by pre-financing Tier 2 activities), but are advised not to initiate Tier 3 activities to avoid taking financial risks deemed unreasonably high.

The Tiers were scaled as follows

**FTA 2019 W1+2 contingency planning**

| *Tier* | *Amount (USD)* | *Corresponding to* |
|---|---|---|
| Tier 1 | 4,300,000 | 25% of W1 + 100% of W2 |
| Tier 2 | 3,400,000 | 50% of W1 |
| Tier 3 | 1,700,000 | 25% of W1 |
| **Total** | **9,400,000** | **2019 W1 + 2019 W2** |

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 it describes the activities, and related W1-2 funding, necessary to implement each one of FTA's operational priorities.

# TABLES

## Table 2A: Planned Milestones

| C1 | C2 | Column 3 | Column 4 | Column 5 | Column 6 | 7a | 7b | 7c | 7d | Column 8 | Column 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **FP** | **Mapped to Sub-IDO** | **2022 FP outcomes** (see Note 1) | **Milestone** (see Note 2) | **Indicate of the following** (drop down: Milestone 1) Identical to proposal 2) Reworded/ rephrased from proposal 3) new/ changed*) | **Means of verification** (see note 3) | **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) | **For medium/high please select the main risk from the list (Note 6)** |
| | | | | | | **for gender** | **for youth** | **for CapDev** | **for CC** | | |

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| FP1 | Sub-IDO 1.4.4 Increased conservation and use of genetic resources.<br><br>Sub-IDO 3.1.2 Enhanced conservation of habitats and resources.<br><br>Sub-IDO C.1.1 Increased capacity of beneficiaries to adopt research outputs. | Managers and policy-makers adopt effective monitoring methods, tools and practices to mitigate threats to valuable TGR, and implement suitable 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 | User-friendly characterization methods and indicators with practical guidelines for their application in monitoring the status and trends of TGR and associated threats, with case study applications. | 1 | Deliverables of 2019, Survey of outcome elements in scaling development activities | 1 | 0 | 1 | 1 | L | |
| FP1 | Sub-IDO 1.4.3 Enhanced genetic gain.<br><br>Sub-IDO 3.3.2 Enhanced adaptive capacity to climate risks.<br><br>Sub-IDO C.1.3 Conducive agricultural policy environment. | 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 | Public-private consortia engaged in tree domestication. | 1 | Deliverables of 2019, Survey of outcome elements in scaling development activities | 0 | 0 | 1 | 1 | L | |
| FP1 | Sub-IDO 1.3.4 More efficient use of inputs. | National governments, extension services and private partners adopt cost-effective and equitable tree-planting material delivery | Appropriate quality standards (e.g. accreditation schemes) developed | 1 | Deliverables of 2019, Survey of outcome elements in scaling | 1 | 1 | 1 | 1 | L | |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sub-IDO A.1.3 Improved forecasting of impacts of climate change and targeted technology development<br><br>Sub-IDO D.1.1 Enhanced institutional capacity of partner research organizations | 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 | and promoted to actors in the germplasm production and delivery sector. | | development activities | | | | | | |
| FP2 | 2.1.2 Increased access to diverse, nutrient-rich food<br><br>1.3.2 Increased livelihood opportunities<br><br>3.2.1 More productive and equitable management of natural resources | Improved food security and livelihood opportunities for 100 million people in smallholder households 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. | Negotiation support tools influencing the management of ecosystem service provision bridging field and farm level land use decisions with local landscape impacts in at least three African countries | 1 | Annual reports of GEF IAP regional hub project, IFAD WAFFI project and EU Regreening Africa project and their websites | 1 | 1 | 1 | 1 | L | |
| FP2 | 1.3.2 Increased livelihood opportunities<br><br>3.2.1 More productive and equitable | Improved livelihood opportunities 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 | Comparative analysis of different approaches to establishing value chain innovation platforms for at least | 1 | Final report of Value Chain Innovation Platforms for Food Security project and its website. | 2 | 2 | 1 | 1 | L | |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | management of natural resources | 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 | two countries in Africa | | | | | | | | |
| FP2 | 1.3.2 Increased livelihood opportunities<br><br>3.2.2 Agricultural systems intensified and diversified in ways that protect soils and water | Diversified tree-crop production systems covering 5 million ha and improving diets and livelihood opportunities for 20 million people in smallholder producer households. | Diversification options for oilpalm, coffee and cocoa across different contexts in Asia, Latin America and Africa | 2 | Annual reports of Natura oilpalm project, Mars V4C project, AFD coffee project in Laos and advice provided to Vietnam Coffee Co-ordination Board summarized in ACIAR invited proposal document. | 1 | 1 | 2 | 2 | L | |
| FP2 | 1.3.1 Diversified enterprise opportunities<br><br>2.1.2 Increased access to diverse, nutrient-rich food<br><br>3.1.1 Land, water and forest degradation minimized and reversed | Increased access to diverse, nutrient rich food for 20 million people through closing 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. | Simulation models of impacts of trees on system intensification of smallholder production systems. | 1 | Annual reports and associated websites of ACIAR Trees4FoodSecurity and IFAD/EU Dryland Restoration projects | 2 | 1 | 1 | 1 | L | |

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| FP2 | 3.1.1 Land, water and forest degradation minimized and reversed | 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 | Options for climate smart silvopastoral systems development across different contexts in Central America | 2 | Specific report as deliverable in FTA POWB | 0 | 0 | 1 | 2 | L | |
| FP3 | 1.3.1 Diversified enterprise opportunities<br><br>b.1.1 Gender equitable control of productive assets and resources | Public and private actors adopt effective governance arrangements, mechanisms and tools for ensuring sustainable and inclusive commodity supply in at least 3 major producer countries | Completed knowledge products and engagements on innovative solutions for addressing implementation gaps to improving sustainability and social outcomes through changes in incentive structures, supply chain management, and business processes | 2 | Knowledge products publicly available through institutional websites<br><br>Stakeholder engagement reports | 1 | 1 | 1 | 2 | M | Vested political interests in maintaining the status quo |
| FP3 | 1.2.2 Reduce market barriers<br><br>b.1.1 Gender equitable control of | 5 business platforms and 20 businesses and service providers develop and implement business models that are more inclusive, economically viable and environmentally sustainable | Completed knowledge products and engagements on overcoming institutional and operational barriers and obstacles faced | 2 | Knowledge products publicly available through institutional websites | 1 | 1 | 1 | 1 | M | Stakeholder (platforms') lack of willingness to acknowled |

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| | productive assets and resources | | by businesses in integrating smallholders into their operations and respective value chains in at least four high-value tree crops | | Stakeholder engagement reports | | | | | | ge adverse impacts beyond those easily measurable through internal M&E |
| FP3 | 1.2.2 Reduce market barriers<br><br>b.1.1 Gender equitable control of productive assets and resources | 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 | Completed analysis of the potential to more explicitly integrate ESG finance to smallholders and SMEs finance with cases and recommendations for moving forward in at least three countries with emphasis on timber and tree-crop sectors | 1 | Knowledge products publicly available through institutional websites<br>Stakeholder engagement reports | 1 | 1 | 1 | 1 | M | Continued concern by financiers about risks associated with smallholder financing |
| FP4 | 3.1.1 Land, water and forest degradation minimized and reversed | (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- | Framework for portfolio approach to sentinel landscapes developed and validated. This is based on Phase I work on sentinel | 3 | Lessons learnt and synthesis report for sentinel landscapes phase I.<br><br>Framework document. | 1 | 0 | 2 | 1 | L | - |

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| | C.1.3 Conducive agricultural policy environment | 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. | landscapes | | | | | | | | |
| FP4 | 3.1.1 Land, water and forest degradation minimized and reversed | 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. | Valuation studies that relate human and social capital benefits across scales to changes in forest and tree cover as indicators of ecosystem services in local context, as contributions to national and international debate (incl. IPBES) | 1 | Online availability of studies, on FT&A ecosystem services at multiple scales.<br><br>Reference to FTA results in global synthesis documents such as IPBES and IPCC | 2 | 1 | 1 | 2 | L | |
| FP4 | 2.1.1 Increased availability of diverse nutrient-rich foods<br><br>2.1.2 Increased access to diverse nutrient-rich foods | Diverse diets from tree cover in mosaic landscapes recognized and enhanced as contributions to balanced diets through Increase of availability, and access to, | In at least 5 landscapes: Increased on- farm production of a diversity of fruits, nuts, vegetables and legumes, and increased amount of collected wild resources including wild fruits, vegetables, | 1 | 1) National SDG statistics at subnational scale for countries targeted by FTA, with explicit comparators/counterfactuals 2) Website availability of reports, typologies, databases and | 1 | 0 | 1 | 1 | L | |

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| | b.1.1 Gender equitable control of productive assets and resources | nutrient-rich wild and cultivated food products from these landscapes (10 sentinel landscapes 10 M people). | bush meat, mushrooms, insects and fish from forests | | diagnostic 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) | | | | | | |
| FP4 | b.1.1 Gender equitable control of productive assets and resources<br><br>b.1.3 Improved capacity of women and young people to participate in decision-making | 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 hectares of shared landscapes under more | Compilation of lessons learned at landscape scale across the learning landscape networks for reporting on Aichi targets to Convention on Biodiversity, United Nations Convention on Climate Change etc. | 2 | 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 | 0 | 1 | 1 | L | |

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| | 3.3.1 Increased resilience of agro-ecosystems and communities, especially those including smallholders | productive and equitable management. | | | | | | | | | |
| FP5 | A.1.4 Enhanced capacity to deal with climate extremes | Efficient, effective and equitable climate national and international mitigation policies and funding, aligned with development objectives (3E+ goals). | Analysis of and roadmap for reduced forest fire practice and policies (Indonesia) made available and used by authorities | 1 | Deliverables of 2019 | 1 | 0 | 1 | 2 | L | |
| FP5 | A.1.1 Reduced net GHG emissions from agriculture, forests and other forms of land use | Risk-assessed ecosystem-based adaptation (EbA) policy and practice in place including joint mitigation and adaptation approaches. | Ecosystem-based adaptation (EbA) options that raise adaptive capacity of social groups identified and applied in case studies | 1 | Deliverables of 2019 | 1 | 0 | 1 | 2 | L | |
| FP5 | A.1.1 Reduced net GHG emissions from agriculture, forests | Food and bioenergy production policy and practice integrated more visibly in the intervention areas. | Spatially explicit assessments of potential of bioenergy production on | 1 | Deliverables of 2019 | 1 | 0 | 1 | 2 | L | |

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| | and other forms of land use | | degraded land available and used in climate-smart land allocation to biofuel production | | | | | | | | |
| FP5 | A.1.1 Reduced net GHG emissions from agriculture, forests and other forms of land use | Performance assessment of mitigation and adaptation policy and practice widely implemented following good evaluation practice. | Innovative methods available to measure non-carbon benefits and identify causal change and used by countries | 1 | Deliverables of 2019 | 1 | 0 | 1 | 2 | L | |

## Table 2B: Planned Evaluations/Reviews, Impact Assessments and Learning Exercises

| **CRP** | **FP (if not overall CRP)** | **Status (drop down menu: ongoing, new)** | **Planned studies/learning exercises in the coming year** ***(examples only)*** | **Geographic scope** **(specify country or region if relevant)** | **Who is commissioning this study** |
|---|---|---|---|---|---|
| *FTA* | *FP1* | *new* | *Ex-post evaluation of the contribution of FTA agrobiodiversity research to forest restoration approaches* | *Burkina Faso* | *Bioversity* |
| *FTA* | *FP2* | *new* | *Ex-post outcome evaluation of FTA forest restoration project in Ethiopia* | Ethiopia | *ICRAF* |
| *FTA* | *CapDev* | *new* | *Forest Fellowship Evaluation* | Indonesia | *CIFOR* |

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| *FTA* | *FP3* | *new* | *Evaluation of CIFOR's contribution to sustainable oilpalm governance in Indonesia* | Indonesia | *CIFOR* |
| *FTA* | *FP1, 4* | | *Valuing diversity for resilient forest landscape restoration* | Gloabl | *Bioversity* |
| *FTA* | *FP3* | *new* | *Evaluation of the social and environmental performance of at least 12 smallholder inclusive business models* | Peru, Ghana, Tanzania, Indonesia | *CIFOR* |
| *FTA* | *FP3* | *new* | *Evaluation of the social and environmental performance of at least 6 jurisdictional approaches to zero deforestation* | Peru, Colombia, Ghana, Indonesia, Malaysia and Brazil | *CIFOR* |
| *FTA* | *FP2* | *ongoing* | *Evaluating the effectiveness of alternative approaches for scaling up improved shrub fodder feeding practices among small-holder farmers in Uganda* | Global | *ICRAF* |
| *FTA* | *FP2* | *ongoing* | *End of program outcome evaluation of Support to the Development of Agroforestry Concessions in Peru* | Peru | *ICRAF* |
| *FTA* | *FP2* | *ongoing* | *End of program outcome evaluation of Securing Tenure Rights for Forest-Dependent Communities: a global comparative study of design and implementation of tenure reform* | Peru, Uganda, Indonesia | *CIFOR* |
| *FTA* | *Gender* | *ongoing* | *A realist review of how and under what circumstances gender has been integrated into research programs* | Global | *FTA* |
| *FTA* | *FP2* | *ongoing* | *A prospective impact evaluation based on a difference-in-difference design for the work of The Drylands Development Project (DryDev)* | Global | *ICRAF* |
| *FTA* | *FP1, 4* | *ongoing* | *Outcome evaluation of N*utrition-sensitive forest restoration to enhance adaptive capacity of rural communities in Burkina Faso | Burkina Faso | *Bioversity* |

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| *FTA* | *FP4* | *ongoing* | *Outcome evaluation of L*aying the foundations for climate-smart restoration: a toolkit for Peru's tropical dry forest | Peru | *Bioversity* |
| *FTA* | *FP1* | *ongoing* | *Outcome evaluation of Diversifying* fine or flavour cacao production systems in Peru for enhanced productivity, resilience and income generation | Peru | *Bioversity* |
| *FTA* | *FP1* | *ongoing* | Impact Evaluation of the CoCo Excellence programme | Global | *Bioversity* |
| *FTA* | *FP2* | *ongoing* | Reversing Land Degradation in Africa by Scaling-up EverGreen Agriculture [1] (Regreening Africa) | 8 African countries | ICRAF |

## Table 2C: Planned major new collaborations (CGIAR internal, or with non-CGIAR collaborators)

| Name of CRP or non-CGIAR collaborator | Brief description of collaboration (give and take among CRPs/PTFs/non-CGIAR collaborator) and value added (e.g. scientific or efficiency benefits) |
|---|---|
| PIM | Planned collaboration with PIM Flagship 3 on smallholder barriers to adoption of sustainability standards. |
| PIM | Study of scaling up methods for agroforestry concessions schemes. Adds to PIM's portfolio of studies on dissemination approaches and enables FTA researchers to interact more formally with other scientists working on similar issues. |
| WLE, PIM | New collaboration of FTA with WLE and PIM on Restoration, bringing together various streams of work on soil, water and forest restoration. The three CRPs defined future collaboration on land restoration during the cross-CRP workshop organized in Nairobi in August 2018. |
| WLE | Working together in the context of research and outreach on gender and restoration. Initiated comparative (cross-country) research on social and equity impacts of different types of restoration approaches |
| PIM | PIM became a new partner for FTA Gender cross-cutting theme (CCT).FTA together with PIM and also WLE is developing Special Issue on gender and restoration together |
| A4NH | New collaboration planned with A4NH CRP in the framework of FTA's priority 3 called "Enhanced nutrition and food security" |
| RICE | Following a successful session at the 17th International Rice Congress collaboration on integrating trees in rice production systems. |

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| For All Coalition: For the Promotion of Gender Equality and Human Rights in the Environment Agreements | FTA is a member of this coalition launched by Costa Rica at UNGA in September 2018. FTA will provide evidence to inform the coalition work and initiatives. The coalition brings together civil society organizations, UN entities, and other stakeholders to guide the integration of a gender perspective in relevant decisions, actions, outcome documents of the UNFCCC, UNCCD, CBD and Ramsar Convention and their implementation. |
| Government of Sri Lanka | New Collaboration with Government of Sri Lanka on Readiness for Green Climate Funds. FP2 and FP4 staff at ICRAF will provide technical support for the development of proposals on Ecosystem-Based Adaptation in Central Highlands of Sri Lanka |
| State Government of Andhra Pradesh through RySS (Rythu Sadhikara Samstha) | New collaboration on evaluating impact and understanding underpinning science of widely promoted agroecological practices (Zero Budget Natural Farming). |

## Table 3: Planned Budget

| | Bilat/W3 | 2019 W1+2 | Centers' Own Funds | total POWB |
|---|---|---|---|---|
| FP1 | 8,768,280 | 1,352,170 | 0 | 10,120,450 |
| FP2 | 13,998,306 | 1,569,483 | 0 | 15,567,789 |
| FP3 | 9,248,141 | 1,558,985 | 0 | 10,807,126 |
| FP4 | 12,511,606 | 1,382,615 | 0 | 13,894,221 |
| FP5 | 12,670,133 | 1,307,028 | 0 | 13,977,161 |
| Programme Management and Integration | 700,000 | 2,229,719 | 0 | 2,929,719 |
| **TOTAL** | **57,896,467** | **9,400,000** | **0** | **67,296,467** |

**NB 1 : 2019 funds to non CGIAR partners**: FTA Foresees to allocate in 2019 USD 1,273,200 of W1+2 to the 4 non CGIAR program participants of FTA (CIRAD, CATIE, Tropenbos, INBAR). In addition to this, the 4 CGIAR Centers in FTA do make use of a substantial amount of W1+2 allocated to them to mobilize national level expertise, universities, local partners in the research to development continuum.

**NB 2: Program management and integration** covers the items: Program Management Unit (PMU) and integrative activities (e.g. support to workshops between Flagships or with other CRPs on a selected set of priorities), Communication and outreach, Capacity development cluster, Data management, and MELIA (Monitoring, Evaluation, Learning and Impact assessment). A Gender specific W1-2 budget of USD 755k is mainstreamed into the five FPs.

## Annex 1 List of FTA's operational priorities

The 22 operational priorities[2] 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**: silvopastoral systems, market-based agroforestry-forestry, farm-forest policy interface, agroecology, plantations and tree crop commodities (11, 12, 13, 14, 2) 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 **sustainable management of natural resources**: land and forest restoration, biodiversity, safeguarding and conservation of genetic resources, orphan crops, landscape governance (1, 4, 19, 9); and fully **address climate change** and implementation of the NDCs both adaptation and mitigation, including zero deforestation, bioenergy and biomaterials, and blue carbon and peatlands (5, 6, 7, 8, 18). Two operational priorities **ensure the quality of FTA research for development** (21) and monitor a set of sentinel landscapes (22).

**List of operational priorities** (the ordering does not imply any prioritization within the list).

1. **Restoration** of forests and landscapes, to carry out research on different aspects (from genetic resources, to management modes and policy and governance options) and to integrate findings and emerging lessons into the main policy platforms and governance processes.
2. **Plantations and tree crop commodities**, 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**[3]**,** 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.
11. **Silvopastoral systems**, for production, fodder, shade, soil fertility and biodiversity. Retaining trees on pastures can halt and reverse degradation following deforestation.

[2] Numbers in parenthesis refer to the operational priorities in the list, with no significance of the order.

[3] Nationally Determined Contributions of the Paris Agreement on Climate Change

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?