



Advisory
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CGIAR Research Program 2020 Reviews: Forests, Trees and Agroforestry (FTA)

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Reviews: Forests, Trees and
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CAS Disclaimer

By design, the CGIAR Results Dashboard was a key source of data for the 2020 CRP Reviews. During the pilot phase of the CRP Reviews, issues with interoperability and resulting data quality between the management information systems (CLARISA and the Dashboard) and extracts from CRP systems (MARLO and MEL) were discovered. For harmonization, CAS engaged with the MARLO team and the CRP MEL focal points to conduct data cleaning and pre-analysis for CRP review teams. This exercise revealed the limitations of CGIAR's reporting/repository systems for evaluation purposes; these limitations were mostly due to changing reporting requirements and discrepancies in whether CRPs adopted MARLO or MEL systems. Moreover, in the case of peer-reviewed journal articles, the protocol used by the CRP review teams to identify relevant publications differed from the guidance applied by CRPs (the CRP review teams' bibliometric analysis used only publications indexed by International Scientific Indexing [ISI], available through Web of Science). Therefore, CAS acknowledges discrepancies between the CGIAR Results Dashboard, and the data provided to the Review teams for their analysis, which should not be seen as a factor having influenced the analysis by the CRP review teams.

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Table of Acronyms

A4NH	Agriculture for Nutrition and Health CRP
ASB	Partnership for the Tropical Forest Margins
Bioversity	Bioversity International
BoT	Board of Trustees
CAS	CGIAR Advisory Services
CAS Secretariat	CGIAR Advisory Services Shared Secretariat
CATIE	Tropical Agricultural Research and Higher Education Center
CCAFS	Climate Change, Agriculture and Food Security CRP
CIAT	International Center for Tropical Agriculture
CIFOR	Center for International Forestry Research
CIRAD	Agricultural Research Center for International Development
CoA	cluster of activity
COVID-19	Disease caused by the coronavirus SARS-CoV-2
CoP	Conference of Parties
CRP	CGIAR Research Program
FAO	Food and Agriculture Organization of the United Nations
FISH	Sustainable Aquaculture and Fisheries
FP	flagship program (also “flagship” in the report)
FTA	Forests, Trees and Agroforestry CRP
FTA I	first phase of FTA
FTA II	second phase of FTA
FTE	full-time equivalent
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GLDC	Grain Legumes and Dryland CRP
ICRAF	World Agroforestry Center
IDO	Intermediate Development Outcome
IEA	CGIAR Independent Evaluation Arrangement
INBAR	International Bamboo and Rattan Organisation
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
ISC	Independent Steering Committee
ISI	International Scientific Indexing
ISPC	Independent Science and Partnership Council
MARLO	Managing Agricultural Research for Learning and Outcomes
M&E	monitoring and evaluation
MCP	multiple-country authorship
MEL	monitoring, evaluation, and learning
MELIA	monitoring, evaluation, learning, and impact assessment
MSU	Management Support Unit
MT	Management Team
NARS	national agricultural research system
NGO	nongovernmental organization
OICR	Outcome Impact Case Report
OP	operational priority
PIM	Policies, Institutions and Markets CRP
PMU	Program Management Unit
POWB	plan of work and budget
QoS	quality of science
RBM	results-based management
REDD	Reducing Emissions from Deforestation and Forest Degradation
RTB	Roots, Tubers and Bananas CRP
SCP	single-country authorship
SDG	Sustainable Development Goal
SLO	System-Level Outcome
SRF	Strategy and Results Framework
ToC	theory of change
ToR	terms of reference
TBI	Tropenbos International

UNFCCC	United Nations Framework Convention on Climate Change
W1/W2	Window 1 and Window 2
W3	Window 3
WHEAT	Wheat CRP
WLE	Water, Land and Ecosystems CRP

Executive Summary

Background and Context

The Forests, Trees and Agroforestry CGIAR Research Program (FTA) aims to support sustainable development by improving production systems, ensuring food security and nutrition, enhancing people's livelihoods, and addressing climate change. The FTA is led by the Center for International Forestry Research (CIFOR) in partnership with the World Agroforestry Center (ICRAF), Bioversity International, the Tropical Agricultural Research and Higher Education Center (CATIE), the Agricultural Research Center for International Development (CIRAD), the International Bamboo and Rattan Organisation (INBAR), and Tropenbos International. The first phase of FTA was implemented from July 2011 to June 2014, and extended through 2016; the second phase started in 2017 to continue through 2021. Research activities are coordinated within five flagship programs (FPs): FP1–Tree Genetic Resources; FP2–Livelihood Systems; FP3–Sustainable Value Chains and Investments FP4–Landscape Dynamics, Productivity and Resilience; and FP 5–Climate Change Mitigation and Adaptation. The flagship programs implement research activities through 25 priority areas.

Purpose and Scope of the CRP 2020 Review

This review is one of 12 independent reviews conducted in 2020 by the CGIAR Advisory Services Shared Secretariat. The purpose of this review is to assess the extent to which FTA is delivering quality of science and demonstrating effectiveness in relation to its theory of change (ToC). The review focuses on FTA activities and results that were reported from 2017, when the program started its second phase, until end of 2019.

Review Questions

1. To what extent does the CRP deliver quality of science, based on its work from 2017 through 2019?
2. What outputs and outcomes have been achieved, and what is the importance of those identified results?
3. To what extent is the CRP positioned to be effective in the future, seen from the perspectives of scientists and of the end users of agricultural research (such as policymakers, practitioners, or market actors)?

An additional review question suggested by FTA was: How has the program dealt with prioritization in an environment of limited W1/W2 funding?

Approach and Methodology

This review followed a predetermined and standardized 11-week process. Primary qualitative data were collected by conducting 32 interviews and two targeted email surveys, including a detailed self-assessment of progress made toward targets and along ToCs of the program. The review team also conducted two deep dives on Outcome Impact Case Reports (OICRs) and participated in the scientific online conference FTA organized in September 2020. Quantitative data were obtained from bibliometric and Altmetric analyses, the CGIAR Dashboard, and MARLO (Managing Agricultural Research for Learning Outcomes). The review analyzed FTA program documents for the period 2017–19. These documents include annual reports, planning and budgeting reports, evaluations, reviews, studies, meeting minutes, and a range of publications and reports external to FTA. Principal limitations for this review were related to capacity and time constraints and limited evidence for program-level effectiveness.

Key Findings and Conclusions

Quality of Science

Quality of research inputs. A pool of researchers, financial resources, and host-country research privileges provided the needed FTA scientific input. FTA research was supported by 126 researchers with diverse disciplines and nationalities. The number of female full-time equivalent (FTE) staff varied across FTA managing partners with the lowest being 25% and the highest being 53%. More than 90% of FTA

research funds came from Window 3 (W3)/bilateral funding while less than 10% came from Windows 1 and 2 (W1/W2) funding. The limited W1/W2, however, played an important role in helping FTA researchers mobilize additional bilateral funds and develop scientific concepts, tools, and innovations. The presence of FTA managing partner offices in different host countries also came with privileges that facilitated FTA research activities.

Quality of research process. Good partnerships, implementation of research ethics, and mentoring of early-career researchers characterized the FTA research process. Partnerships with internal and external partners provided value to the FTA program and led to joint research activities, events, and production of research outputs. While FTA used CGIAR policies, principles, and best practices on management of intellectual assets, this review was unable, owing to limited data, to appreciate the extent of its implementation. Regarding the mentoring and training of early-career researchers, each of the FTA managing partners signs and implements the individual contracts and annual workplans of each of the early-career researchers.

Quality of research outputs. The quality, volume, and diversity of FTA publications in phase II was impressive despite the challenges with reducing FTA funding. A total of 1,625 books, book chapters, journal articles, papers, briefs, fact sheets, flyers, posters, and brochures were published, with about 70% in open access sources. A majority of the publications were journal articles in the fields of agroforestry, forestry, climate change, ecosystem services, landscape management, livelihood improvement, value chains, and germplasm management. FTA publications came from multicountry collaborations among authors of different nationalities and were published in high- and low-impact-factor journals. To communicate outputs, FTA showed strong evidence of using multiple communication channels such as Twitter, blogs, and Facebook to disseminate scientific products to end users.

The work of FTA from 2017 to 2019 demonstrates in general a high quality of science in its research inputs, process and outputs that has culminated into the communication and dissemination of different research products to scientific, decision making and development implementation end users.

Effectiveness

Achievement of planned outputs and outcomes. FTA showed strong implementation performance in phase II and is likely to make significant progress toward most planned end-of-program targets. While FTA will reach and even exceed several of those targets, progress toward the bulk of targets at that level will remain below original intentions because of reduced W1/W2 funding, the shortened program lifetime, and difficulties in raising W3/bilateral funding for selected issues such as Sentinel Landscapes.

Demonstrated importance of outcomes. Both OICRs selected for deep dives described significant contributions to national policy and innovation processes that were validated by the review team. In Nepal, ICRAF's involvement shaped the policy content and likely accelerated the policy development process by several years. In Vietnam, CIFOR was the principal driver for the monitoring and evaluation (M&E) tool for Payment for Forest Environmental Services (PFES) that is currently being rolled out. In both cases, contributions to large-scale environmental and developmental impacts can be expected in several years but naturally hinge on external factors such as implementation financing.

Governance and management. Compared with phase I, FTA further increased its programmatic governance and management performance in phase II. The responsibilities of the Independent Steering Committee (ISC) were clarified and strengthened, and it provided effective and hands-on oversight to FTA. The Management Team (MT) was active and effective, brought FTA managing partners closer together, and found an efficient way to program W1/W2 resources across institutional boundaries. The review team confirmed a strong need for a proactive approach toward managing W1/W2 resources, which had been notoriously unreliable in terms of volume and timing throughout FTA's existence. FTA's three-tier activity-based management system introduced for allocating W1/W2 funding was found to be relevant, appropriate, and effective. FTA's governance and management arrangements and processes can be considered good practice for research for development (R4D) programs such as FTA.

Progress along ToCs. FTA's ToCs were improved vis-à-vis phase I but can be further strengthened and used. FTA's progress along its ToCs was found to be mostly in line with expectations. This is remarkable considering that the program received only about half of its expected W1/W2 funding and is expected to sunset a year early. There is also evidence of FTA's collaboration with other CRPs and CGIAR Centers and platforms, which, however, suffered from staff capacity and resource constraints.

Cross-cutting issues. FTA's academic education and short-term training have remained in line with phase I, but dedicated investment of W1/W2 resources for capacity development dwindled to low levels in phase II. Next to the Climate Change, Agriculture and Food Security CRP (CCAFS), FTA's FP5

represents the second principal program-level targeting of climate change mitigation and adaptation issues in CGIAR. In contrast to gender/youth and capacity development, FTA staff considers climate change know-how to already be mainstreamed. Among CRPs, FTA is considered a good example of integrating gender into R4D. All managing CGIAR FTA partners have steadily increased the share of women in their research staff to more than 50%. Youth is managed as part of the gender priority and has remained a cross-cutting issue without much dedicated institutional or financial support. There are indications that cross-cutting issues may be systematically underreported at FTA.

Future Orientation

From 2021 to 2030, FTA research should be closely aligned to the sustainable development goals (SDGs). Key areas of FTA focus could include climate change, food security, improved livelihood and economic opportunities, multipurpose landscape management and inequality. The most important impact pathways for FTA should continue to be its influence on government and on international policy processes. At the CGIAR level, priority areas of focus should include improving tenure rights and access to natural resources as well as strengthening or creating locally appropriate financial instruments to finance different landscape activities.

Recommendations

Recommendations addressed to FTA:

1. FTA should ensure that current overall high scientific productivity and implementation performance continue until the end of 2021 by taking measures to keep program-level staff and program partners informed, motivated, and involved.
2. FTA should continue to make scientific contributions to emerging and important global issues at the levels of policy and project design as well as development implementation. These issues include gender, food security, agroecology, climate change, climate finance, value chains, and biodiversity conservation.
3. FTA should engage in more targeted communication and dissemination of research findings to different audiences, especially in developing countries. FTA should go beyond global communications via Twitter, blogs, and news outlets to more focused dissemination in different relevant regional and national platforms and networks.
4. FTA should find ways to conserve and protect the significant value-added it has built beyond 2021, within or outside One CGIAR. This value includes the key staff currently financed from W1/W2 resources, FTA governance and management arrangements and related lessons learned, and the important personal and institutional relationships between FTA partners and their staff.
5. FTA should ensure timely synthesis and continued availability of its legacy in terms of knowledge and tools from phases I and II.
6. FTA should continue the ongoing end-of-program impact estimation work in a pragmatic and end-product-oriented manner that ensures that relevant findings will be available and can be effectively communicated before the program ends in 2021.

Recommendations addressed to the CGIAR System:

7. The CGIAR System should support FTA partners in finding ways to conserve and protect the significant value-added FTA has built as a program. Without a global program addressing the critical R4D needs currently covered by FTA, CGIAR would lack a critical portion of its R4D portfolio.
8. Going forward, the System-level governance and management of CGIAR should fully embrace the reality that the bulk of CGIAR projects are bilaterally financed, and therefore programs (like FTA) have only limited control over those bilateral projects mapped to them. For those projects, primary accountability lies with the bilateral donor and not with the program or CGIAR. Based on this understanding, future untied CGIAR funding should be strategically invested (1) to strengthen programmatic collaboration between and beyond CGIAR Centers, and (2) to leverage, influence, and complement bilateral project work.
9. The CGIAR System should reduce the reporting burden and transaction cost for CRPs in 2021 to the extent possible. Going forward, carefully balance benefits and costs associated with System-level planning and reporting, and develop a lean and efficient results-informed management system that satisfies the most important information needs of CGIAR donors and other stakeholders but avoids an excessive reporting burden on CGIAR scientists and managers and on CGIAR System-level staff.
10. When developing ToCs for future CGIAR programs, the CGIAR System should use a two-step approach to improve planning and reporting. First, it should develop "system ToCs" that describe the systems CGIAR programs aim to influence but without attempting to describe that influence or its effects. In a

second step, it should develop “desired-change ToCs” that explain where and how CGIAR programs aim to exert influence on the underlying systems.

1 Background to the CRP 2020 Review

1.1 Purpose and Target Audience of the Review

This review is one of 12 independent reviews conducted in 2020 by the CGIAR Advisory Services Shared Secretariat (CAS Secretariat) on behalf of the CGIAR System. The present review addresses the CGIAR Research Program (CRP) on Forests, Trees and Agroforestry (FTA).

In line with the terms of reference for the independent CRP reviews (CAS Secretariat 2020a,b), the primary purpose of this review is to assess the extent to which FTA is delivering quality of science and demonstrating effectiveness in relation to its theory of change. The review has three objectives:

1. To fulfill CGIAR's accountability requirements vis-à-vis FTA donors;
2. To assess the effectiveness and evolution of FTA's work to date in its second phase; and
3. To provide an opportunity for learning at the program and the CGIAR System level.

Reflecting these objectives, the primary audience of the review is the CGIAR System Council and FTA. The review is expected to identify findings, conclusions, and recommendations for refining FTA's 2021 plan of work and budget (POWB) to the extent feasible in the remaining program year and to draw lessons to inform future CGIAR research modalities more generally.

1.2 Overview of the CRP and Its Context in Research for Development

FTA's research for development program aims at supporting sustainable development by improving production systems, ensuring food security and nutrition, enhancing people's livelihoods, and addressing climate change. The management of FTA is led by the Center for International Forestry Research (CIFOR) in partnership with the World Agroforestry Center (ICRAF), Bioversity International, the Tropical Agricultural Research and Higher Education Center (CATIE), the Agricultural Research Center for International Development (CIRAD), the International Bamboo and Rattan Organisation (INBAR), and Tropenbos International (TBI).

The first phase of FTA (FTA I) was implemented from July 2011 to June 2014 (CGIAR IEA 2014), with an extension through the end of 2016; the second phase (FTA II) started in 2017 and will continue until the end of 2021 (CAS Secretariat 2020a). FTA I was guided by three CGIAR strategic objectives: food for people, environment for people, and policies for people. FTA II has been guided by three hypotheses related to governance, livelihoods, and trade-offs (FTA, 2011; FTA, 2017a).

FTA II's overarching goal is to "mitigate the impacts of the current suboptimal management of forests, trees and agroforestry resources, bringing evidence and science-based technologies and policy improvement at all levels" (FTA 2017a page 8). At the time of this review, FTA has more than 140 projects in about 60 countries and covers five research themes known as flagship programs (FPs) (FTA, 2017b; FTA, 2020):

- FP 1: Tree Genetic Resources to Bridge Production Gaps and Promote Resilience;
- FP 2: Livelihood Systems;
- FP 3: Sustainable Value Chains and Investments;
- FP 4: Landscape Dynamics, Productivity, and Resilience;
- FP 5: Climate Change Mitigation and Adaptation.

The five FPs lead 25 FTA operational priority activities in the areas of restoration; plantations and tree crop commodities; enhanced nutrition and food security; biodiversity, safeguarding, and conservation; nationally determined contributions; bioenergy and biomaterials; blue carbon and peatlands; climate change adaptation; landscape governance; gender; silvopastoral systems; market-based agroforestry-forestry; farm-forest policy interface; agroecology; livelihood trajectory modeling and assessment; inclusive finance and business models; innovating finance for sustainable landscapes; public and private commitments to zero deforestation; orphan tree crops; effectiveness of approaches to sustainable supply; quality of FTA research for development; sentinel landscapes; foresight; seed and seedling delivery systems; and smallholder tree-crop commodities.

Aligned to those of CGIAR, cross-cutting dimensions of FTA include gender, youth and other aspects of social inclusion (the principle of leaving no one behind articulated by the Sustainable Development Goals [SDGs]), capacity development, and climate change.

1.3 Scope of the Review and Review Questions

The review focuses on FTA activities and results that were reported from 2017, when the program started its second phase, until the end of 2019. It includes results to which activities from before and during FTA's first phase may have contributed. The review is guided by three overarching review questions (see Table 1).

In line with the terms of reference (ToR) for this review, FTA CRP provided an additional review question (How has the program dealt with prioritization in an environment of limited W1/W2 funding?): it was addressed as part of the 2nd overarching review question (see specific review question 2.3 in Table 1).

1.4 Approach, Methods, and Limitations

1.4.1 Approach

This review followed a predetermined and standardized 11-week process. It was guided by the ToR for CRP reviews (Annex 1) and a detailed review guidance document (CAS Secretariat, 2020 a,b,c). The three overarching review questions were broken down into eight specific review questions that are addressed in different parts of this review report (Table 1).

Table 1. Specific review questions and where they are addressed in this report

Overarching review questions	Specific review questions	Corresponding sections
1. To what extent does the CRP deliver quality of science, based on its work from 2017 through 2019?	1.1. To what extent does the CRP benefit from sufficient high-quality inputs (with reference to the research environment and project designs)?	2.1.1 (findings) 2.1.4 (conclusions)
	1.2. To what extent do the CRP management processes ensure the quality of science, including credibility, legitimacy, relevance to next-stage users, and potential effectiveness, of the research and operations?	2.1.2 (findings) 2.1.4 (conclusions)
	1.3. In what ways are the research outputs, such as germplasm, knowledge tools, and publications, of high quality?	2.1.3 (findings) 2.1.4 (conclusions)
2. What outputs and outcomes have been achieved, and what is the importance of those identified results?	2.1. To what extent were planned outputs and outcomes achieved by 2019?	2.2.1 (findings) 2.2.6 (conclusions)
	2.2. What is the importance of achieved outcomes, with reference to CGIAR intermediate development outcomes (IDOs) and sub-IDOs, cross-cutting issues (capacity development, climate change, gender, and youth), and partners' objectives, with consideration for predictability of funding and legacy time frame for the CRP?	2.2.2 (findings) 2.2.6 (conclusions) Cross-cutting issues are addressed in section 2.3
	2.3. How have the program's management and governance supported the CRP's effectiveness in research?	2.2.3 (findings) 2.2.6 (conclusions)
	Additional FTA-specific review question: How has the program dealt with prioritization in an environment of limited W1/W2 funding?	The additional FTA-specific review question is addressed in section 2.2.3.3
	2.4. To what extent have the CRP and its flagship programs made progress along their theories of change?	2.2.4 (findings) 2.2.6 (conclusions)

Overarching review questions	Specific review questions	Corresponding sections
3. To what extent is the CRP positioned to be effective in the future, seen from the perspectives of scientists and of the end users of agricultural research (such as policymakers, practitioners or market actors)?	3.1. What programmatic evidence exists for future effectiveness within the life of the program (through 2021), considering the comparative advantages of the CRP and its flagship programs and drawing on the CRP's and its flagship programs' progression according to their theories of change?	2.4 (future orientation) 2.1.4, 2.2.6, 2.3.5 (conclusions) 3 (recommendations) 4 (lessons learned)

Source: CAS Secretariat 2020 and CRP review team analysis.

Primary information sources for the review were online interviews, documents surveys, and databases. The review team also participated in an online conference.

FTA conference. At the beginning of the review process, the review team took advantage of the FTA 2020 Science Conference "Forest, Trees, and Agroforestry Science for Transformational Change," which took place from 14 to 25 September 2020, and attended several sessions.

Interviews. The review team conducted 32 interviews with 27 people, choosing from suggestions made by the program. Several key FTA staff were interviewed repeatedly, including in group interviews. Only 7 interviewees (26%) were women. Twelve were not FTA staff; they were, for example, Independent Steering Committee (ISC) members, representatives of partner and boundary organizations, and external experts. Interviewees are listed in Annex 2.

Documents. An extensive desk-based review was conducted on a range of documents and online resources, including annual reports, POWBs, evaluations, reviews, studies, meeting minutes and supporting documents from FTA's ISC and Management Team (MT), and a range of publications and reports external to FTA. Documents are referenced directly in the text and listed in Annex 3.

Surveys. The review team decided to conduct two targeted email surveys. A self-assessment of FTA's effectiveness was conducted with the program director and the five flagship leaders based on individualized templates (Annex 4). The self-assessments were added when it became apparent that available evidence from other sources would not suffice for an aggregated, program-level assessment of effectiveness. In addition, the review team followed up interviews with four brief forward-looking questions (Annex 5).

Databases. The CAS Secretariat pre-analyzed bibliometric, Altmetric, and results-data extracted from MARLO as a basis for this review. In addition, the review team used the CGIAR online Results Dashboard and used guest access to MARLO to obtain additional information on Outcome Impact Case Reports (OICRs), milestones, innovations, and policies FTA had contributed to, as well as on cross-cutting issues. The review team also analyzed FTA's traffic light reports for 2017–20, the listings of W3/bilateral projects mapped to FTA 2017–20, and financial information extracted from FTA's annual reports and POWBs.

Deep dives. In consultation with FTA and the CAS Secretariat, the review team selected two OICRs for more in-depth study. The analysis followed a standard template for CRP reviews (Annex 7) and included additional interviews. For one of the deep dives (Vietnam PFES M&E, Annex 7), the review team did not conduct interviews with external stakeholders because a simultaneous FTA-led case study was already interviewing all relevant stakeholders. The draft findings of that study were shared with the review team and informed that deep dive.

1.4.2 Methods

The assessment of quality of science (QoS) followed TOR and CAS review guidance, to separately assess research inputs, research processes, and research outputs (CGIAR IEA, 2015, Annex 2). In order to reflect the broader Quality of Research for Development (QoR4D) framework, the review also assessed the scientific credibility of research outputs and the legitimacy of research processes as part of the QoS analysis. In line with review guidance (CAS Secretariat, 2020a,b,c), the two other QoR4D criteria were not included in the QoS analysis.

Regarding effectiveness, the review made use of extensive triangulation across different information sources and analysis methods (see also section 1.4.3). Targets were collected and reviewed, including in terms of their continued applicability. Information about FTA activities and contributions to results were drawn from interviews, FTA reports, other studies and evaluations, OICR reports and statistics, deep dives on two OICRs, FTA self-assessments of progress along ToCs and toward phase II targets, analysis of quantitative performance data from FTA traffic light reports and MARLO, and the assessment of the effectiveness of FTA'S governance and management arrangements and procedures.

1.4.3 Limitations and Mitigation Measures

This CRP review was limited in terms of scope and available evidence.

Limited review capacity and time: The review had limited capacity and time, restricting the depth and breadth of analysis. Noting the number, size, and variety of activities and results associated with FTA, the review relied mostly on secondary information about quality of science and effectiveness gathered from interviews, documents, and data analysis. This represents a natural limitation inherent in the review design that cannot be avoided.

Limited relevance of original phase II targets. FTA's phase II targets assumed an implementation period until 2022—instead of 2021—and a significantly higher share of W1/W2 funding. For transparency, review team chose to assess progress against the original targets and to highlight these external constraints, together with other constraints, when assessing effectiveness. The review assessed expected results at year-end 2022 (even if the program is expected to end a year before) because the change processes to which FTA has contributed are likely to continue even in the absence of new FTA activity in 2022.

Limited focus on the source of evidence for the quality of science. The FTA assessment of the quality of science collected its evidence primarily from a pre-analyzed data of journal articles from the Web of Science (WoS). This allowed for a harmonized and standardized approach to review all CGIAR research programs. However, the use of WoS limits the exploration of other useful citation sources such as Google Scholar. In this review we attempted to triangulate some of the results from the WoS with citations from Google Scholar.

Limited evidence on program-level effectiveness toward phase II targets. A comprehensive and complete assessment of the contribution FTA has made—and is expected to make until 2022—toward these targets is difficult because available evidence on outcomes is usually on a project-by-project basis, does not systematically cover all targets, and involves different metrics. Apart from a handful of outcome evaluations FTA has conducted, there also exists little solid evidence on causal contribution claims.

This is also the case with CGIAR Dashboard data that were pre-analyzed by the CAS Secretariat for use in this review. MARLO data show some but not all outputs and outcomes and therefore reflect choices and selection in terms of what is reported as well as effectiveness information. While the information is useful for illustrating specific achievements, it does not provide evidence for lack of effectiveness, nor does it represent a valid measure of FTA's effectiveness as a program. In other words, a lack of evidence in MARLO is not evidence for a lack of results. In a similar vein, comparisons with other CRPs cannot be used to benchmark effectiveness or performance between these programs.

In addition, the assessment of progress toward phase II targets is rendered difficult because of the large number of different targets and several frameworks introduced in phase II that differ from the structure along which FTA phase II targets had been set—e.g., the 25 operational priorities introduced in 2018/19 and the five challenges used as a basis for FTA's ongoing impact estimation work (section 1.2).

The review team managed this limitation by broadening the evidence base for triangulation through two additional information sources and assessment methods:

- A self-assessment exercise was conducted with FTA leadership to provide an aggregated and comprehensive assessment of FTA's progress toward its phase II targets (section 2.2.1) and along its ToCs (section 2.2.4). Self-assessed progress was validated by the review team based on supporting evidence provided by FTA as part of the self-assessment (see Annex 4) and by comparing selected claims with evidence from interviews and the desk review.
- The review team also used FTA's traffic light reports (section 2.2.1), which track implementation progress of W1/W2-funded activities on a more granular level than other available data sources.

Non-quantifiable causal contributions. While many phase II targets have quantitative elements, it is generally not possible to quantify FTA's contribution. This is because some targeted outputs and all

targeted outcomes and impacts lie beyond FTA's sphere of control. FTA activities *contribute* to them, but they cannot be *attributed* to FTA in the sense of FTA activities having *produced* them partially or fully. This implies that the degree to which quantitative targets have been "reached" by FTA cannot be assessed in quantitative terms.

Rather, a qualitative and a quantitative assessment needs to be combined. First, the importance of FTA's contribution to an observed intermediate change such as a policy or an innovation must be assessed. This is usually possible only in qualitative terms. Second, the magnitude and/or reach of associated change when innovations or policies are adopted can be estimated. Conducting one assessment without the other does not provide meaningful information about the effectiveness with which FTA contributed to such high-level changes. The review reflects this logic and assessed the degree to which FTA contributed to phase II targets through a combination of qualitative contribution claims and quantitative reach figures.

1.5 Management and Quality Assurance

CAS provided oversight for this review through several initial introductory meetings, regular communications, check-ins, and collection of quality assurance checklists regarding progress. Preliminary findings, a draft report, and a final report were shared with both CAS and the FTA team for feedback and factual corrections. Quality was further assured by using a transparent and clearly defined approach and method with explicit recognition of the limitations as presented in section 1.4.

The entire process was managed through close communication and interaction between the review team, the CAS Secretariat, and the FTA team. At the level of the review team, clear roles and responsibilities were discussed, agreed upon, and executed within specified timelines. Kalame Fobissie focused primarily on quality of science, and Markus Palenberg focused primarily on effectiveness. They worked as a team to ensure complementarity and coherence of the review. Through email exchanges and several virtual interactive meetings, the review team was able to communicate frequently to facilitate collaboration and effective teamwork with the objective of delivering on time and in good quality.

2 Findings

2.1 Quality of Science

2.1.1 Quality of Research Inputs

The most important resources are the staff and financial resources available to FTA during phase II coupled with the host countries' research infrastructure.

Research Staff

Research staff are all those, employed by one of the eight partners, who have a role in delivering the annual work plan of FTA or contributing to FTA activities. For the purpose of this review, we categorize FTA research staff into senior research full-time equivalent (FTE) staff and early-career research FTE staff. The senior research FTE staff include researchers leading FTA flagships and priorities, principal investigators and scientists, scientists, senior scientists, senior fellows, and associates, while the early-career research FTE staff include postdoctoral researchers, junior scientists, research assistants, and officers.

FTA has on average about 289 FTE research staff. CIFOR and ICRAF have the largest numbers of FTE staff, representing 80% of the total FTE staff, while the remaining 20% comes from the other managing partners of FTA (Table 2). About 81% of the FTE staff fall within the senior research category. This demonstrates the presence of a large pool of highly qualified researchers who can conceptualize, design, and successfully implement the FTA research program across many countries.

The research staff is diverse in terms of nationalities, which cover all continents, and scientific disciplines, which include a range of fields relevant to addressing the different priorities of FTA. The disciplines include forestry, agroforestry, agronomy, engineering, finance, modeling, biochemistry, economics, environment, geography, ecology, biology, development, gender, anthropology, sociology, and policy. The diversity in skill sets and disciplines show that FTA has put in place a team of researchers to address the multidisciplinary and transdisciplinary nature of FTA research questions and problems in the different flagships and priorities.

FTA has a wide range of gender representation across different managing partners. Table 2 shows that the representation of female research staff ranges from 25% in INBAR to 53% in both CIFOR and Bioversity. In terms of research staff leading the flagships and priorities, 33% are females. Additional information is found in Annex 8.3. The presence of female researchers across all the managing partners' institutions demonstrates FTA's commitment to integrating gender in their work force.

Table 2. Total FTE research staff of FTA by category and gender, 2019

Partner	Total research FTE	Senior research FTE	Early research FTE	Male	Female	% Female
CIFOR	118	93	25	55	63	53%
ICRAF	112	98	14	68	44	39%
Bioversity	19	9	10	9	10	53%
CIRAD	19	17	2	13	6	32%
CATIE	11	10	1	8	3	27%
Tropenbos	6	4	2	4	2	33%
INBAR	4	4	0	3	1	25%
Total	289	235	54	160	129	

Source: FTA Management Team and Report team analysis.

Financial Resources

In its phase II proposal, FTA had an overall funding envelope of close to half a billion US dollars (US\$483 million) for its six-year phase from 2017 to 2022 (FTA 2017a). This review focuses on the period 2017–19. During this period a total of US\$228 million was expected based on the proposal, and US\$225 million based on FTA’s annual POWBs. Actual FTA expenditure in 2017–19 was US\$217 million—5% below proposal projections and almost reaching POWBs. The FTA phase II proposal called for most funding (85%) to be raised bilaterally; the remaining 15% represented commitments from CGIAR’s central funding windows 1 and 2 (W1/W2). These projections compare with actual expenditures in this period as follows:

- W3/bilateral expenditure was US\$180 million and remained 7% below proposal projections;
- W1/W2 expenditure was US\$22 million and remained 35% below proposal projections; and
- Center funds of US\$15 million (6% of the proposal budget) were invested to limit these shortfalls.

Table 3 summarizes projected and realized funding on for FTA flagships. In 2017–19 Flagship resources represented 98% of FTA’s projected budget and 97% of actual expenditure; the remainder was allocated to FTA governance, management, and coordination of cross-cutting issues. Additional information about annual POWB budgets is not used here because POWB reporting templates changed within in this period.

Table 3. Total 2017–19 proposed budget, actual expenditure, and share of W1/W2, by flagship

Flagship	Proposed budget US\$ million (% of W1/W2)	Actual expenditure US\$ million (% of W1/W2)
FP1	36.5 (16%)	43.3 (7%)
FP2	52.1 (11%)	54.1 (4%)
FP3	38.8 (15%)	41.8 (9%)
FP4	55.2 (11%)	29.9 (10%)
FP5	40.3 (14%)	40.6 (7%)
Flagship total	222.9 (13%)	209.8 (7%)

Source: FTA annual reports for 2017–19, and report team analysis

Across all five flagships and in line with earlier observations, actual expenditures remained 7% below projected budgets. Except for FP4, FTA flagships exceeded their W3/bilateral funding targets. FP4 fell significantly short, reflecting how W3/bilateral projects were mapped to flagships and difficulties in raising W3/bilateral funding for specific topics such as Sentinel Landscapes. All flagships received and expended considerably less W1/W2 funds than expected, reducing the average W1/W2 share from an expected 13% to an actual 7%.

Host-Country Research Infrastructure and Support

The FTA managing partners’ host countries provide, support, or facilitate the acquisition or establishment of research infrastructure in the form of facilities, resources, services, and privileges that are useful input for the research staff. Some of the research infrastructure used in both phases I and II of FTA are based on well-established legacy program history and host-country agreements signed many years or decades ago. Table 4 shows that all the partners are well established and present in many countries to conduct research. The partners have host-country agreements that have led to the establishment of headquarters, regional, country, or project offices. The host-country agreements signed by CIFOR in Indonesia in 1993 and by ICRAF in Kenya in 1996 provide privileges that have supported research in these countries to date. These privileges include facilitation of the visa and traveling documents of research staff; access to land and administrative premises; the right to freely assemble for research purposes; recognition of the right to conduct research in different landscapes and communities; tax exemption during importation and exportation of research materials, equipment, vehicles, and machinery; and immunity from jurisdictions and legal processes. FTA research staff therefore build on existing host-country research facilities and support systems to conduct research.

Table 4. Host countries of FTA managing partners

Partner	Headquarters	Regional and country offices/presence
CIFOR	Indonesia	Kenya, Cameroon, Peru, Germany
ICRAF	Kenya	Ethiopia, Mozambique, Tanzania, Malawi, Uganda, Rwanda, Zambia, Zimbabwe, China, Sierra Leone, Nigeria, Mali, Democratic Republic of Congo (DRC), Cameroon, Côte d'Ivoire, Sri Lanka, Bangladesh, India, Vietnam, Thailand, Philippines, Indonesia, Peru, Costa Rica, Brazil
Bioversity-CIAT	Italy	Peru, India, Nepal, China, Malaysia, Benin, Burkina Faso, Cambodia, Ghana, Indonesia, Laos, Myanmar, Philippines, Thailand, Vietnam
CIRAD	France	Cameroon, Burkina Faso, Central African Republic, Republic of Congo, Côte d'Ivoire, Indonesia, Malaysia, Vietnam, Brazil, Colombia, Costa Rica, French Guiana, Peru
CATIE	Costa Rica	Bolivia, Brazil, Ecuador, Mexico, Dominican Republic
Tropenbos	Netherlands	Bolivia, Colombia, Suriname, Democratic Republic of Congo (DRC), Ghana, Liberia, Nigeria, Uganda, Indonesia, Philippines, Vietnam
INBAR	China	Ghana, Ethiopia, India, Ecuador

Source: FTA management partner websites and review team analysis.

Note: Some of the information may be out of date as some of the organizations have undergone changes leading to the closing down, opening up, or downscaling of their regional, country, or project offices and operations.

2.1.2 Quality of Process

Partnerships

Our findings indicate that the quality of the FTA scientific process has led to the creation of four kinds of partnerships: an FTA management partnership, an FTA CRP partnership, upstream research partnerships, and downstream research partnerships. FTA has seven managing partners in charge of its research program, up from five in phase I. The managing partners now consist of three CGIAR Centers (CIFOR, ICRAF, and Bioversity-CIAT) and four non-CGIAR centers (CIRAD, CATIE, INBAR, and Tropenbos). CIFOR, the lead FTA center, plays a central role in the overall strategic and programmatic management and coordination of FTA activities. Prior to the CIFOR-ICRAF merger in January 2019, the fiduciary responsibility for the use of FTA resources was held by CIFOR's Board of Trustees (BoT). Since the merger, it has been handled by the CIFOR-ICRAF common BoT but with CIFOR still holding the legal Financial Framework Agreement with CGIAR and being accountable for signing the downstream program partnership agreements and the overall financial reporting.

Some interviewees argue that good partnerships seem to be the main value of FTA; the merger of ICRAF and CIFOR is a case in point. Even though the two centers remain separate legal entities, they have a common BoT that makes decisions for their collective good. FTA phases I and II provided the platform for the two centers to build a partnership that has moved from their initial differences to a common vision and operations in terms of their research agenda. The level of mutual trust between the two centers has never been this high and has been driven largely internally by FTA research staff, who have increasingly worked together over the years with a strong commitment to using the findings of FTA research to help solve development problems on the ground.

CIFOR and ICRAF work together across all the FPs (Annex 8.2). CIRAD makes contributions to FP2, FP3, and FP5. CATIE is involved in FP2, FP3, FP4, and FP5. INBAR's contribution is linked to mostly FP1, FP3, and FP5. Bioversity works closely with FP1, while Tropenbos's major contribution goes to FP3. Sometimes the program involves different flagships to co-organize events, such as during the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (CoP) meetings (FP4, FP5), the Committee on World Food Security (FP4, FP2), and the Global Landscapes Forum (FP1, FP3, FP4, FP5). Beyond meetings, there is cross-flagship collaboration between FP4 and FP5. About 30% of FP4's landscape work on climate change is mapped to FP5 through projects and is also coordinated with FP5 in the POWB and reported through FP5. By working together on or with the same flagship and priority, FTA managing partners strengthen their research relationships. Moreover, the FTA prioritization process provided the managing partners with opportunities to share their views and created the basis for a solid collaboration with clear mutual interests and joint work plans. The introduction of the operational

priorities has led to some shifts in the boundaries of FTA managing partners' roles and involvement in specific FP and priorities. In some situations, some flagships have large W3/bilateral projects or have received W1/W2 resources to work on thematic and priority areas led by other flagships. To understand the rationale for these situations, one needs to dive into the work plans for the operational priorities and the internal processes of ICRAF and CIFOR. Beyond FTA managing partners, the different flagships also enter into partnerships with other CGIAR Research Programs. For example, FP1, FP2, and FP5 collaborate with CCAFS on climate change issues; FP4 and FP1 are collaborating with Water, Land and Ecosystems (WLE) and with Policies, Institutions and Markets (PIM) on land restoration and policy issues, respectively. The gender component of FTA worked with several CRPs and was equally mainstreamed into all FTA flagships. In most cases the FTA partnerships are at the level of projects and individual research staff. In other instances, the partnerships are more formal, like the partnership between FP4 and WLE on specific restoration activities. FTA partnerships equally involve several upstream and downstream research partners. Upstream research partners develop or provide further understanding of existing or new research while downstream research partners work with the users of research outputs by focusing on delivery, outreach and engagement, capacity development, and policy design processes. Annex 8.2 presents examples of such partners by flagship and gender. We decided to include gender among the different cross-cutting themes because FTA reports on partnerships regarding its gender activities. Our analysis also finds that FTA annual reporting on partnership was actually missing several existing useful partners, especially some of the universities that have co-supervised a PhD or jointly conducted research and published articles. One area where FTA upstream partnerships have proven to be successful is in the publication of scientific papers and documents, through collaboration with and contributions by authors from different organizations, especially universities and national agricultural research systems (NARSs). Depending on where an article or document is to be published, the authors and coauthors need to respect and follow a clear process of validation of the quality of the publication. If a scientific article or book is to be published in Institute for Scientific Information (ISI) journals, it is required to go through a well-established professional peer-review process before acceptance. In this case, FTA and its partners have no control over the process. However, FTA managing partners make recommendations on where to submit scientific articles. CGIAR Centers do not recommend publication in predatory journals, and CGIAR publications increasingly target open-access journals for wider readership, in accordance with CGIAR policy. CGIAR partners' publication policies on quality control, ethics, and review process demand internal and external expert reviews of working papers, policy briefs, and other institutional documents. In cases where there is a joint publication led by NARSs, FTA has little or no direct control over where they are published.

FTA downstream partnerships are context specific, sometimes locally based, and usually directly engaged with the end users of FTA publications, knowledge tools, innovations, and technologies. The end users include a range of actors from international fora, national governments, local communities, the private sector, environmental and development organizations, and civil society organizations. A few FTA examples are worth mentioning. FP1 entered into a public-private partnership with one of the leading shea nuts buyers (AAK) to ensure the sustainability of the value chain and improve livelihoods across the Sahel. FP2 led an FTA partnership with the Association of South East Asian Nations (ASEAN) to develop ASEAN agroforestry policy. FP3 is a member of the Global Platform for Sustainable Natural Rubber (GPSNR), which aims to develop an international sustainability standard for natural rubber. FP4 led an FTA partnership with the Government of Gambia to implement a Green Climate Fund (GCF) project on large-scale, ecosystem-based adaptation in community forestry. FP5 used the Governors' Climate and Forests Task Force platform to work with 28 subnational jurisdictions across the world to assess land-use sustainability. Regarding gender, FTA collaborated with the United Nations Convention on Biological Diversity (UNCBD) and UN Women to mainstream gender into the post-2020 Global Biodiversity Framework.

Policies on Research Ethics

The implementation of the FTA program complies with research ethics. CIFOR, the lead FTA center, implements a research ethics review policy that is consistent with international norms and policy, especially for research involving human subjects. Scientists from CIFOR are also required to undertake online training on intellectual assets (IAs). Moreover, the FTA phase II proposal clearly specifies key CGIAR principles to guide the implementation of IA-related activities throughout FTA program implementation. The principles include the development and diffusion of FTA research as international public goods, partnerships for effective delivery and deployment of research products, sound management of IA and intellectual property rights, and maximization of global accessibility and impact of FTA IA. This implies that all FTA CGIAR and non-CGIAR partners, including program participants and subgrantees, are expected to respect and apply CGIAR policies and principles on research ethics when conducting FTA research. ICRAF's research on germplasm improvement, for instance, is required to work

in accordance with CGIAR IA management principles and International Plant Treaty standards. In addition to the CIFOR requirements on research ethics, most of the other FTA managing partners have similar research ethics policies and practices.

Policies for Mentoring and Training Early Career Researchers

FTA early-career researchers constitute about 19% of total FTA staff (Table 2). They are mainly postdoctoral researchers, junior scientists, research assistants, and research officers, who play a role in FTA data collection, analysis, and writing and publishing of scientific papers, as demonstrated in many FTA publications. FTA early-career researchers each work closely with and under the mentorship of a senior researcher who is either a director, principal investigator, senior scientist, flagship/priority leader, or senior research fellow or associate. FTA's policy on mentoring and training junior research staff is evident in the signed individual contracts for each member of its junior staff, which clearly state their supervisor or mentor in almost all cases. The mentorship and training of early-career researchers are guided by annual work plans validated by their mentors.

Mentorship provides a pathway for early-career researchers to perform well, grow professionally within the FTA program, and move from one level of responsibility or career to another. Given the short timeline for the FTA review from 2017 to 2019, it was difficult to find clear evidence on how FTA early-career researchers have moved progressively from one position to another within the program. On the contrary, interviewees mentioned cases in which some early-career researchers had to leave FTA owing to limited funding to keep them.

2.1.3 Quality of Outputs

Scientific Publications

The assessment of scientific publications gives a good indication of the quality of science conducted by FTA. The publication records of FTA phase II show impressive results. According to FTA annual reports coupled with additional FTA bibliometric data and the FTA online publication platform, a total of 524, 470, and 631 publications and research products were reported for 2017, 2018, and 2019, respectively. The publications included books, book chapters, journal articles, papers, briefs, fact sheets, flyers, posters, and brochures. About 74, 77, and 79% were published as open access for the respective three years. About 48, 47, and 50% of all publications were journal articles from ISI and non-ISI sources for the respective three years. The different types of publications are illustrated in Figure 1.

A qualitative assessment of a sample of contribution claims in the annual reports indicates that FTA publications are mainly of high quality and in appropriate publication venues. The contribution claims demonstrate a broader applicable knowledge that is relevant to the objectives of FTA. A majority of FTA publications are authored and coauthored by FTA researchers who use a combination of appropriate qualitative and quantitative methods to contribute to improving social and environmental conditions around the world. CIFOR and ICRAF, which received the highest research inputs in terms of the size of their research staff and financial resources, produce the largest volume of publications. While the annual reports claim that FTA contributed to nine SDGs, FTA publication contributions were directly linked to only five SDGs (1–end poverty, 2–end hunger, 5–gender equality, 10–reduced inequality, and 13–climate action). However, the different FTA publications (articles, books, policy briefs, etc.) were used to inform a range of global, regional, national, and subnational decision-making, policy design, and implementation processes.

At the global level, some FTA publications are used to generate international public goods (IPGs) that can influence policy generation and policy implementation. Examples include books and special journal publications on global comparative analyses of Reducing Emissions from Deforestation and Forest Degradation (REDD+), sustainable standards and certification of commercially exported tree-based agricultural commodities, gender and forest, gender and climate change adaptation, gender equality in agricultural and environmental innovation, importance of forest food, tropical peatlands management, enhanced management of forest genetic resources, forests and poverty, innovative agroecological approaches, jurisdictional land-use sustainability, and co-investment in ecosystem services. Moreover, FTA publications and findings are cited or used in intergovernmental fora and panels on climate change (Intergovernmental Panel on Climate Change [IPCC], Global Commission on Adaptation [GCA], United Nations Framework Convention on Climate Change [UNFCCC]), food security (High Level Panel of Experts on Food Security and Nutrition [HLPE-CFS]), biodiversity conservation and ecosystem services (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES], United Nations Convention on Biological Diversity [UNCBD]), gender, and land degradation and restoration (United Nations Convention to Combat Desertification [UNCCD]).

At the regional, national, and subnational levels, the policy briefs published by FTA seem to be used to inform or contribute to decision-making and policy process design. FTA annual reports show that policy briefs were produced on agroforestry and forestry practices to inform the nationally determined contribution (NDC) process, the REDD+ process, agroforestry policy and strategy design, rights-based approach to REDD+, gender equity and social inclusion in joint forest management, gender equality in landscape restoration, gender and the SDGs, and performance-based financing of community forestry, among others. Bibliometric analysis shows that FTA reported 697 total ISI publications to the CGIAR Dashboard from 2017 to 2019. To stay in line with the methodological guidance for this review, only 675 ISI peer-reviewed articles were considered for the bibliometric analysis because they can be found in the Web of Science (WoS) database. According to the bibliometric analysis, these 675 articles are published in 253 different journals covering different disciplines and targeting a wide range of regional and global audiences across different development sectors. Table 5 presents FTA's top 15 journal outlets, their impact factors, and journal citation report (JCR) ranking for the period of 2017 to 2019. It shows that FTA has published most in the fields of agronomy, forestry, environmental science/studies, economics, green and sustainability science, ecology, geography, biodiversity conservation, development studies, and multidisciplinary sciences. Out of the 15 top FTA journals, 9 were in the first quartile (Q1) of their field while 6 were in the second quartile (Q2). FTA published most in two journals, *Agroforestry Systems* and *Forests*, and each of them recorded 23 publications. In terms of impact factor, the journal *Global Environmental Change* had the highest 2019 impact factor (10.466) while the journal *Experimental Agriculture* recorded the lowest impact factor (1.396). We note, however, that in most cases the journal impact factor might not be the best predictor of citation scores for individual papers (Finardi, 2013).

The bibliometric analysis shows that FTA articles have authors based in 55 countries across all continents. Table 6 shows the top 20 countries of authors of FTA articles, the number of articles, and the number of authors involved in single (SCP) and multiple (MCP) country authorship. Indonesia, China, the United States, and Kenya have by far the most articles, with authors based in institutions in these countries. The case of Indonesia and Kenya can be explained as a reflection of the presence of FTA managing partner institutions (CIFOR and ICRAF), while China and the United States might have a significant country or regional program or be home to corresponding authors. For example, J. Xu, who was FTA's most prolific published author from 2017 to 2019, works for ICRAF's East and Central Asian Regional Office, located in China. In general, few articles are published by authors all located in just one country. Rather, the vast majority of articles are published by authors working together across countries, demonstrating the high level of international scientific collaboration and partnership within the FTA program.

Another dimension of the quality of FTA output is research productivity. Table 8 shows the FTA authors with the most published articles from 2017 to 2019. The majority of authors are staff and associates from CIFOR, ICRAF, CIRAD, and Bioversity. Researchers from all flagships are represented among the most productive, reflecting the well-established legacy programs behind these flagships. It is worth noting that 3 females are among the 15 most productive FTA researchers in terms of publications. J. Xu has by far the highest number of publications from 2017 to 2019, while K. D. Hyde, with more than 61,000 Google Scholar citations, has by far the highest h-index (93), which measures both the productivity and citation impact of published articles. There are also some other notable FTA star scientists worth mentioning. FP1 scientist R. Kindt has the largest number of total cites on Google Scholar among CGIAR scientists. His R-package software for matching plant names against the world's flora has been downloaded more than 2.6 million times, and he is cited more than 41,000 times on Google Scholar. Another example is FP5/FP4 scientist D. Sheil, who has the highest score (71.91) of FTA scientists on ResearchGate.

Regarding the relevance of FTA scientific publications to next-stage users, the bibliometric analysis looked at the frequencies of the keywords used in all the 675 articles. The most frequently FTA-used author keywords are climate change, REDD, Indonesia, deforestation, agroforestry, ecosystem services, forest, livelihood, and conservation, among others (Annex 8.7). On the other hand, Keywords-plus is automatically generated by Web of Science based on words that frequently appear in the titles of an article's references. Keywords-plus highlights the importance of conservation, management, forest, biodiversity, and climate change in FTA's research focus.

This bibliometric analysis summarizes research content, productivity, and impact. Progress on how FTA research leads toward innovations is examined in section 2.2.2 and Annex 7, which draws on the review of selected OICRs.

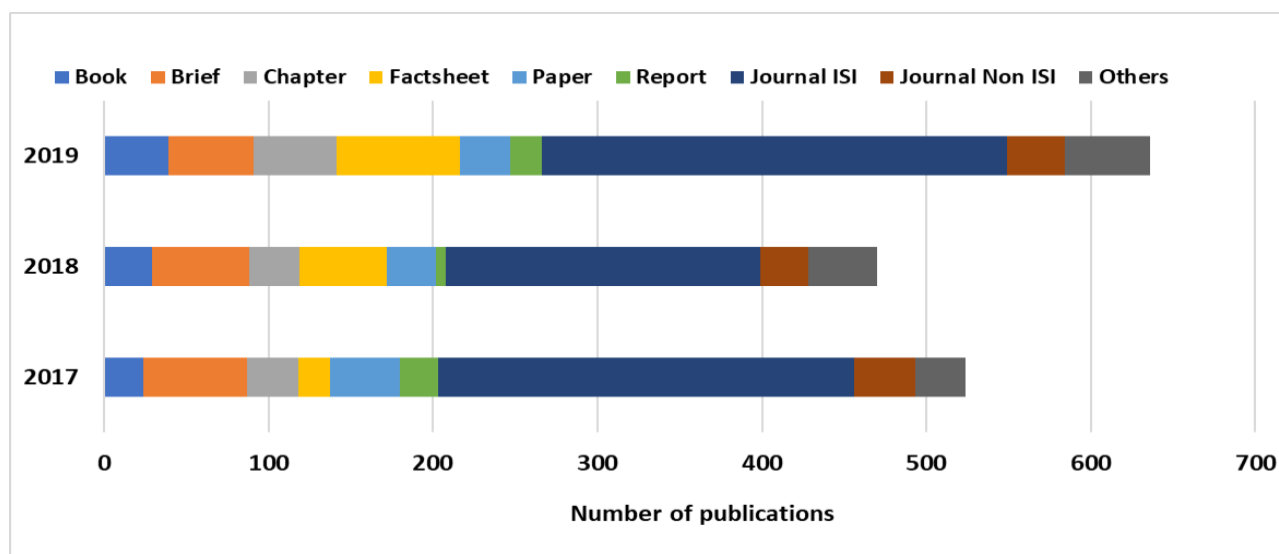
Communication of Scientific Output to End Users

FTA has dedicated communication experts supported by scientists who use FTA scientific outputs to produce and disseminate various communication products to different end users. The most used communication channels include news outlets, policy design platforms and processes, blogs, Twitter,

Facebook, and Mendeley. The Altmetric analysis based on the CGIAR database shows that FTA publications gained an overall 17,078 attention score from 2017 to 2019, have been tweeted over 11,665 times, covered more than 1,189 times in various blogs and news outlets, were read by over 36,995 readers on Mendeley, and were mentioned at least 83 times in official policy documents.

The reported results from WoS ISI journals do not provide a comprehensive picture of all relevant scientific findings to be communicated to the targeted audiences and end users. We therefore use Figure 1 to show the wide range of FTA communication products that are shared with different audiences and target groups. However, the available data do not enable our analysis to track the location and category of end users. In terms of access to communication products, including scientific journals, FTA increasingly focuses on open access journals—a good step in making sure that end users all over the world can use FTA’s research output. The figure on open access under Annex 8.1 further illustrates the percentages of open and closed access to FTA publications.

Figure 1. Types of FTA publications, 2017–19



Source: FTA annual reports and online publication database 2017–19; review team analysis.

Note: Other types include conference papers, brochures, flyers, infographics, posters, and theses.

Table 5: Top journal publication outlets for FTA publications, 2017–19

Journal	Number of articles	Impact factor, 2019	Rank within JCR category	JCR category	Quartile in category
<i>Agroforestry Systems</i>	23	1.973	28 of 91; 22 of 68	Agronomy; forestry	2; 2
<i>Forests</i>	23	2.221	17 of 68	Forestry	1
<i>Environmental Research Letters</i>	18	6.096	27 of 265; 6 of 93	Environmental sciences; meteorology and atmospheric sciences	1; 1
<i>PLOS One</i>	18	2.74	27 of 71	Multidisciplinary sciences	2
<i>Land Use Policy</i>	15	3.682	28 of 123	Environmental studies	1
<i>Forest Ecology and Management</i>	14	3.17	5 of 68	Forestry	1
<i>Global Environmental Change–Human and Policy Dimensions</i>	13	10.466	4 of 265; 3 of 123; 1 of 84	Environmental sciences; environmental studies; geography	1; 1; 1

Journal	Number of articles	Impact factor, 2019	Rank within JCR category	JCR category	Quartile in category
<i>Ecology and Society</i>	12	3.89	32 of 168; 27 of 123	Ecology; environmental studies	1; 1
<i>Forest Policy and Economics</i>	12	3.139	56 of 371; 39 of 123; 6 of 68	Economics; environmental studies; forestry	1; 2; 1
<i>International Forestry Review</i>	12	1.718	29 of 68	Forestry	2
<i>Mitigation and Adaptation Strategies for Global Change</i>	11	3.23	94 of 265	Environmental sciences	2
<i>Sustainability</i>	11	2.576	120 of 265; 53 of 123; 26 of 41	Environmental sciences; environmental studies; green and sustainable science and technology	2; 2; 3;
<i>Experimental Agriculture</i>	10	1.396	43 of 91	Agronomy	2
<i>Conservation Letters</i>	9	6.766	2 of 59	Biodiversity conservation	1
<i>World Development</i>	9	3.869	6 of 41; 33 of 371	Development studies; economics	1; 1

Source: Dashboard data pre-analyzed by CAS.

Table 6: Top country locations of corresponding authors of FTA journal articles published in 2017–19 (based on first author's affiliation)

Country	Number of articles	Percentage	SCP	MCP	MCP ratio
Indonesia	71	11%	16	55	78%
China	66	10%	8	58	88%
USA	61	9%	3	58	95%
Kenya	47	7%	7	40	85%
Germany	40	6%	2	38	95%
United Kingdom	38	6%	1	37	97%
Netherlands	36	5%	0	36	100%
Australia	30	5%	0	30	100%
France	28	4%	2	26	93%
Peru	26	4%	3	23	89%
Cameroon	17	3%	1	16	94%
Belgium	15	2%	0	15	100%
Denmark	14	2%	1	13	93%
Finland	14	2%	0	14	100%
Canada	12	2%	1	11	92%
Ethiopia	9	1%	4	5	56%

Country	Number of articles	Percentage	SCP	MCP	MCP ratio
Italy	9	1%	0	9	100%
Switzerland	9	1%	0	9	100%
Uganda	8	1%	1	7	88%
Brazil	7	1%	1	6	86%

Source: Dashboard data pre-analyzed by CAS.

Notes: SCP indicates that only one country is represented in authorship. MCP indicates multiple country locations for authors. MCP ratio indicates the proportion of total articles with authors from multiple countries.

2.1.4 Conclusions on the Quality of Science

2.1.4.1 Quality of Research Inputs

This review looked at research staff, financial resources, and host-country research infrastructure and support as critical aspects of the quality of FTA scientific input. Regarding research staff, FTA draws on a large number of research staff and associates/fellows (126) from several disciplines and nationalities spread across all continents, with a majority spending less than half of their time in FTA. The number of female FTEs varied across flagships, with the share ranging from 18% to 57%.

Access to and availability of financial resources remain a key FTA scientific input. Overall, from 2017 to 2019, more than 90% of FTA research funds came from W3/bilateral sources while less than 10% came from W1/W2. Even though the W1/W2 funding is small, all the flagships and managing partners attested to the useful role it plays in supporting the development of scientific concepts, tools, and innovations as well as the mobilization of W3/bilateral funds.

FTA phase II builds on phase I and the long-term presence of FTA managing partners in different countries where they have their headquarters and regional and country offices. The privileges provided by all these host countries facilitate FTA research activities on the ground.

2.1.4.2 Quality of Research Process

CRP review of the quality of the scientific process focused on partnerships, policies on research ethics, and mentoring and training of early-career researchers. A strong partnership between the FTA managing partners seems to be one of the main values of the FTA program. This is exemplified by the strong scientific collaboration across FPs and priorities among the seven partners in general and between CIFOR and ICRAF in particular. Several formal and informal partnerships also exist between FTA and other CRPs in the form of joint research activities and events. Furthermore, upstream research partnerships focus on FTA-relevant research with universities and research institutions, while downstream research partners are interested in policy design and delivery, capacity development, outreach, and community engagement.

CIFOR, the lead FTA institution, has a research ethics review policy. Moreover, FTA has clear CGIAR policies, principles, and best practices on intellectual assets (IAs) that all scientists involved in FTA activities should follow and respect. Owing to limited data, this review was unable to determine how successfully FTA research ethics were implemented.

FTA is active in mentoring and training early-career researchers such as postdoctoral researchers, research officers, and research assistants. For all FTA managing partners, details about the nature of the mentorship and training are indicated in the individual contracts and annual work plans of the early-career researchers.

2.1.4.3 Quality of Research Output

In terms of the quality of FTA scientific outputs, the review team's qualitative and quantitative findings give FTA an "A" grade (8/10), concluding that from 2017 to 2019 FTA produced the highest-quality journal publications. FTA publications have a wide range of characteristics, including multicountry collaboration, authors of diverse nationalities, publication in high- and low-impact-factor journals and first-quartile publications, strong records in journal categories and in journals such as *Agroforestry Systems* and *Forests*, and strong use of keywords that define some of the research focus of FTA. A majority of the publications were journal articles in the field of agroforestry, forestry, climate change adaptation and mitigation, ecosystem services, landscape management, livelihood improvement, value

chains, and germplasm management. While the focus of this review is on quality of output, it is equally important to highlight the volume of high-quality publications produced by FTA. Bibliometric analysis of 697 publications shows that FTA has some of the most productive scientists in the CGIAR System despite the challenges linked to reducing FTA funding.

Regarding the communication of outputs to end users, there is strong evidence that FTA is using multiple communication channels, including new and emerging technologies such as Twitter, blogs, and Facebook, to disseminate scientific and communication products to end users. The products include books, book chapters, journal articles, papers, briefs, fact sheets, flyers, posters, and brochures. To facilitate access, FTA has published at least 70% of all its products in open-access sources (see Annex 8.1). Findings in this area are limited, however, by the unclear identification and tracking of the categories or types of end users.

2.2 Effectiveness

FTA's effectiveness is assessed in four complementary ways: (1) by reviewing the achievement of planned outputs and outcomes (section 2.2.1), (2) by reviewing two deep dives on outcome cases (2.2.2), (3) by assessing the effectiveness and efficiency of FTA's governance and management arrangements (2.2.3), and (4) by documenting progress along the program's theories of change (2.2.4).

2.2.1 Achievement of Planned Outputs and Outcomes

In its phase II proposal, FTA has set itself targets at several levels (listed in Annexes 5.6):

- At the **program level**, FTA's IDO and sub-IDO targets remain qualitative and describe *types of change* without providing a sense of the *magnitude of change*. End-of-program and SLO-level targets have qualitative as well as quantitative elements. The planned contributions to 8 of CGIAR's 10 SLO-level targets are especially ambitious. For example, the FTA target of contributing to lifting 17 million people out of poverty by 2022 represents more than half of the target for the entire CGIAR (30 million people). In terms of coverage, FTA plans contributions to 8 of the 17 SDGs and, through the CGIAR Strategy and Results Framework, to 12 of CGIAR's 14 IDOs and to 31 of 46 sub-IDOs.¹
- At the level of **flagships**, targets vary in number; their level in terms of outputs, outcomes, or impacts; and the degree to which they are quantified. All flagships defined several semi-quantitative targets at the FP level, and most also defined deliverables on the output level for each of their constituting clusters of activity (CoAs).

In 2019 the ISC organized an impact assessment workshop to which all FTA flagships contributed by outlining their approach to estimating impact in a series of papers. Some flagships, such as FP3 in 2020, have used this work as a basis for adapting their targets and their ToC to reflect the shortened program lifetime and the reduced W1/W2 funding compared with original phase II projections. For transparency, the review team assessed progress toward the original targets, acknowledging and explaining why some may have not been reached for reasons beyond FTA's control.

FTA annual reports and publications provide an impressive account of FTA activities and results. In 2017 selected important activities and results were reported across FTA's four main production systems (natural forests, plantations, pastures, and cropping systems with trees) and related to a range of tree-crop commodities (e.g., timber, oil palm, rubber, coffee, cocoa, coconut, wood fuel, and fruits). Most reported results were on the level of outputs, reflecting an overall "upstream" orientation of work in the first year of FTA's six-year phase II (which was later reduced to five years). FTA's work in 2017 is difficult to summarize; the section on key results in the 2017 annual report alone covers 13 pages of listed achievements. What can be said is that reported activities and results (outputs) covered all flagships, CoAs, and cross-cutting topics.²

In 2018 FTA implemented significant work on technical innovations and tools, on value chains, and toward institutional and policy processes. This work still reflects an upstream focus in the second year of FTA phase II. Highlights were the sequencing and publication of five orphan tree crop reference genomes, the expansion of conservation strategies for tree genetic resources, nutrition upscaling strategies in East Africa, demonstration of returns on investment of agroforestry options customized to local circumstances, analytic work and tools for assessing the effects of environmental policies and standards, analytic

¹ The CGIAR SRF defines 14 IDOs (10 IDOs related to SLOs and 4 cross-cutting IDOs) and 46 sub-IDOs (30 sub-IDOs related to IDOs and 16 cross-cutting sub-IDOs related to cross-cutting sub-IDOs) (CGIAR, 2016, 15 and 23).

² Climate change was not reported as a cross-cutting topic in the 2017 annual report.

frameworks for smallholder access to finance and innovative investment schemes for community forest enterprises, technical inputs to the Global Partnership on Forest Landscape Restoration (GPFLR), publication of a landmark book on REDD+, an atlas for key Central American species, ecophysical modeling of coffee's response to climate change, and pilot work on biomass production.

In 2019 FTA supported important decision-making processes. FTA made contributions to the High Level Panel of Experts (HLPE) report on agroecology, the Global Commission on Adaptation (GCA) report, the state of the world's forest genetic resources, the work of the IPBES, gender work with UNCBD and UNFCCC, work on climate change with the Food and Agriculture Organization of the United Nations (FAO) and with the GCF, dialogue on NDCs in the Asia-Pacific Forestry Week, the palm oil dialogue in Jakarta, and the adoption of the agroforestry policy in Nepal (reviewed in section 2.2.2.2). FTA further led work on Indicator 14 of the global core set of indicators of the United Nations Forum on Forests (UNFF), collaborated with the International Rubber Study Group (IRSG), and informed the discussions of the Committee on World Food Security (CFS) on plantations. In collaboration with other CRPs (PIM and WLE), FTA synthesized the work conducted on restoration in CGIAR and initiated the development of a database of costs and benefits of restoration projects with FAO.

Because reported progress information did not allow an aggregated assessment (see section 1.4.3), the review team asked FTA leadership to also **self-assess overall progress toward phase II targets** to allow further triangulation. The review team found these self-assessments credible and even somewhat conservative (at the program level). FTA provided evidence in support of these assessments that is summarized in Annex 5. The review team verified selected claims based on information from annual reports, studies, and interviews. From this exercise, the following observations emerged:

- On the **program level**, FTA expects to make significant contributions to most SLO targets but does not expect to reach the full target figures because of the reduced program lifetime, reduced W1/W2 funding, and implementation challenges that were mostly related to difficulties in securing sufficient W3/bilateral funding for specific topics. FTA estimated that by year-end 2020 significant contributions had been made to all four end-of-program outcomes; it expects to contribute significantly to 2022 target outcomes but not fully reach them. Regarding FTA's 31 qualitative sub-IDO targets, FTA expects to fully meet expectations for 23 (74%) of these contributions, to fall short for 2 (6%), and to exceed expectations for 6 (19%). Of the 10 sub-IDOs FTA prioritized in terms of budget, contributions to 7 are expected to meet expectations, 2 are expected to exceed expectations, and 1 (enhanced institutional capacity of partner research organizations) is expected to remain below expectations.
- On an **FP level**, FP1 expects to significantly contribute to or fully reach all higher-level targets it has set itself for phase II. On a more fine-grained level, FP1 estimates that 15 of 16 targets at that level will be significantly or fully reached. FP2 expects to make full contributions to its high-level targets in 3 of 5 instances, to exceed 1 target, and to significantly contribute to another. It should be noted, however, that some target statements are "smart" in the sense that they do not require actual development outcomes, such as when stating that opportunities are "offered" to smallholders. A more fine-grained self-assessment was not conducted for FP2 because CoA-level targets were not established for that flagship. FP3 expects to fully reach 2 outcome-level targets by 2022 and to significantly contribute to another. No contribution has been made (or is expected) to another outcome target that was removed when FP3 revised its ToC and target setting last year. By 2022 FP3 expects to make an initial contribution to 2 impact-level targets listed in the phase II proposal, both of which have also been removed from FP3's revised targets. On the CoA level, FP3 expects to fully reach 10 of 14 targets, exceed 2, and contribute significantly and somewhat to the remaining 2, respectively. FP4 expects to fully reach the targeted contributions to 3 of its 4 high-level targets and estimates that a significant contribution to the remaining (nutrition-related) target will be made. At the CoA level, FP4 expects full contributions to 15 of 24 targets, significant contributions to 6, and only some contributions to the remaining 3. Lower-than-expected contributions are mostly related to one CoA (landscape observatories: forests, trees, farm, and settlement dynamics) and reflects limited W1/W2 funding in support of FTA's Sentinel Landscapes. FP5 estimates to be on track to making a significant contribution or fully reaching 2 of its 3 high-level targets. However, reaching the 2 remaining high-level targets related to climate change adaptation is unlikely because W3/bilateral funding required for the planned large-scale programs did not materialize. On the CoA level, FP5 expects to fully meet 13 of 28 targets, exceed 4, contribute significantly to 5, and make only some contributions to 6. Areas of most progress are related to climate change policy research (mitigation), and weaker areas to adaptation- and bioenergy-related work.

The review team also made use of quantitative performance information for triangulating evidence on effectiveness. Two sources were used: FTA traffic light reports and MARLO dashboard data.

FTA traffic light reports. In the review period, FTA compiled annual traffic light reports for all activities and deliverables funded by W1/W2. These internal FTA reports are mainly a management tool but also demonstrate the degree to which W1/W2-funded FTA activities for each year were implemented and delivered the planned outputs.

The review team analyzed the 2019 traffic report in detail. When last updated, 87%³ of W1/W2-funded work planned for 2019 had been fully completed, 5% was close to completion, 6% was significantly delayed, and 2% had been canceled. Traffic light reports are regularly updated, and completion numbers increase over time. The cited figures reflect the status of activities planned for 2019 when reviewed in November 2020.

Like all traffic light reports, the 2019 report records links to documented evidence for “completed” deliverables. Based on a random sample of 10 deliverables associated with completed activities, the team found the supporting evidence convincing in 8 instances. In one instance, the deliverable had been changed for good reasons; in another instance the status should probably have been marked as “close to completion.” The 13 deliverables reported as “close to completion” were mostly publications in the final stages of review or submission. Most deliverables marked “significantly delayed” were likely to be ultimately produced without extra cost, apart from one case requiring minor additional funding (because of a combination of staff changes and insufficient quality of a draft final report). “Significantly delayed” deliverables (also 13) were likely to still materialize, apart from two instances with still unclear projections. All deliverables marked “somewhat or significantly delayed” were actively being followed up by FTA management and, depending on when traffic light reports were updated, usually moved toward completion. The three cases of canceled deliverables represented fund reallocations to future FTA work—in two cases within similar lines of work and in one because the proposed project had not been selected by the third party involved.

MARLO dashboard data was pre-analyzed by the CAS Secretariat and then considered for this review:

- FTA reported 70 **milestones**⁴ in CGIAR’s MARLO system for 2017–19. Most were reported completed (59 milestones or 84%), 12 were extended (17%), and one was canceled. All FPs reported milestones, ranging from 19 for FP4 to 10 for FP5. The number of extended milestones varied across FPs from 1 (FP2) to 4 (FP5). Across 2017–19, most milestones were reported in 2017, followed by 21 in 2019, and 19 in 2018. Among 38 milestones with a risk rating (no such rating was required in 2017), 30 had low risk and 4 had medium risk. Unsurprisingly, a higher share (half) of the milestones with medium risk were extended, compared with 18% of those with a low risk rating. Compared with other CRPs, FTA is in the mid-field regarding the number of reported milestones. FTA’s milestone completion rate of 84% is slightly above the CGIAR-wide rate of 75% for 2017–19.
- FTA reported 54 **innovations**⁵: 16, 21, and 17 in 2017, 2018, and 2019, respectively. Flagships shared several innovations, and three FPs participated in more than half of all reported innovations—namely FP4 (63%), FP1 (57%), and FP5 (52%). FP3 and FP2 participated in 31 and 28% of all reported FTA innovations, respectively. The bulk of reported innovations (42 of 54) fell into the category “research and communication methodologies and tools,” reflecting FTA’s main target audiences (see section 2.1.3), followed by “social science” (6), “production systems and management practices” (5), and “biophysical research” (1). Innovations were spread over all four innovation stages: 12 in stage 1, 9 in stage 2, 27 in stage 3, and 6 in stage 4. While the review team did not systematically investigate when activities contributing to these innovations began, it is likely that work toward stage 4 innovations (that are being used by next users) had begun before FTA started its second phase. If not, achieving stage 4 innovations would represent impressively fast progress. Naturally, this analysis does not answer the question of whether innovations continue to be used after the projects contributing to them are over.

³ Traffic light reports express progress in terms of the share of W1/W2 funding (rather than on a deliverable-by-deliverable basis).

⁴ Milestones are time-bound targets that reflect progress toward a planned result (CGIAR, 2020).

⁵ Innovations are new or significantly improved outputs or groups of outputs, including management practices, knowledge, or technologies (CGIAR, 2020). Innovations can have four stages: discovery/proof of concept (stage 1), successful piloting (stage 2), available/ready for uptake (stage 3), and uptake by next user (stage 4).

- In 2017–19 FTA reported contributions to 48 **policies**⁶—considerably fewer than the 87 policies found in the Altmetric analysis (see section 2.1.3). Of the 48 policies reported in MARLO, 41 were at stage 1 and the remainder were at stage 2. This result likely reflects the selection of cases with recent activities for OICRs, which was confirmed in interviews. Most (40) represented actual policies or strategies. Other types were curricula (3), legal instruments (3), and budgets and investments (2).

As outlined earlier, this data offers only limited insight because of incomplete coverage and the lack of linkages to other FTA results (see section 1.4.3).

2.2.2 Demonstrated Importance of Selected Outcomes

In 2017–19 FTA reported 16 Outcome Impact Case Reports (OICRs) in CGIAR’s MARLO system. Following a standard template, OICRs briefly explain the outcome and FTA’s contribution to it, provide supporting evidence, link the case with the CGIAR Strategy and Results Framework (SRF) and with innovations and policies reported in MARLO, and indicate the degree to which cross-cutting topics were targeted. In addition, FTA submitted 11 outcome cases for the 50th-anniversary publications of CGIAR.

The 12 OICRs reported in 2018 and 2019⁷ were evenly split between maturity levels 1 and 2, describing changes in discourse and behavior (level 1) or in policies and practice (level 2). The absence of more mature OICRs (level 3 describes impact at scale) is due to the focus on cases to which FTA recently made significant contributions. Level 3 cases, such as the work leading up to the launch of India’s national agroforestry policy in 2014, were likely excluded from OICR reporting because they were driven mostly by legacy work from before and during FTA’s first phase.⁸

In consultation with FTA and the CAS Secretariat, two OICRs were chosen for closer “deep dive” review. Related findings are summarized in the next two sections and in Annex 7.

2.2.2.1 Deep Dive: Agroforestry Policy in Nepal

Work toward a national agroforestry policy began in 2014, when Nepal’s Agriculture Development Strategy recognized agroforestry as a vital component of agriculture. In the same year, first discussions took place between the then Ministry of Agriculture and Cooperative and the then Ministry of Forest and Soil Conservation. In 2015 a national workshop on agroforestry brought together 150 stakeholders and resulted in the “Kathmandu Declaration on Agroforestry,” which showcased the need for a national agroforestry policy. Discussions and information exchange subsequently intensified, including participation in a regional agroforestry conference in New Delhi. In 2016 a seven-member Inter Ministerial Coordination Committee (IMCC) was established to oversee the policy development process. In 2016 and 2017, a Climate Technology Centre and Network (CTCN) program supported development of the policy. Several consultation workshops were held between 2016 and 2018 with more than 500 diverse stakeholders,⁹ and in 2017, a study tour was conducted for IMCC members to India, the first country with a national agroforestry policy (launched in 2014). Nepal’s policy was drafted by the IMCC in 2018 and approved in June 2019, after extensive review by involved ministries and the Cabinet (Government of Nepal, 2020).

Beginning in 2014 and during both phases of FTA, ICRAF played an important role in this policy development process. As an institution, ICRAF took part in and supported the initial discussions in 2014 and organized the workshop on agroforestry and the Kathmandu Declaration on Agroforestry, the 2015 regional agroforestry conference in New Delhi, the stakeholder consultation processes in 2016–18, the 2017 IMCC study tour to India, and the application and implementation of the 2017–18 CTCN program. The following statements from the secretary of the Ministry of Forests and Environment reflect overall perceptions from interviews and desk research on ICRAF’s contribution:

⁶ Policies consist of actual policies but also legal instruments, investments, or curricula modified in design or implementation, informed by CGIAR research (CGIAR, 2020). Level 1 policies represent research taken up by next users. Policies are level 2 if they are enacted and level 3 if they impact people and/or the natural environment.

⁷ In 2017 OICRs did not report on maturity.

⁸ According to interviews, ICRAF’s direct involvement with India’s agroforestry development process was estimated to have begun several years before FTA was established in 2011.

⁹ Stakeholders represented policymakers and senior officials from nodal ministries, national and international nongovernmental organizations (NGOs), civil society, academics and researchers, service providers, financial and insurance institutions, farmers (agriculture, livestock, non-timber forest products), farmers’ associations (private/community forests, peasants), foresters, wood industries, businesspeople, planners and experts, finance and legal experts, and representatives of local governments (Government of Nepal, 2020).

ICRAF remained the backbone of the policy development process from starting to end. In fact, the whole idea and necessity of a national policy was catalyzed and coordinated by ICRAF.

Without ICRAF, the realization of the need and importance of such a policy for Nepal would have not happened so soon. Probably this success would have come late to Nepal.

On the level of individuals, the director of ICRAF's South Asia Regional Office played a central and pivotal role. From the establishment of the IMCC in 2016, he was the only nongovernmental member of this coordinating and policy-drafting body. Reflecting perceptions from other interviews and documents, the secretary of the Ministry of Forests and Environment said:

The role of the director of ICRAF's South Asia Regional Office was instrumental, particularly his continued logical and convincing discussions with two ministers and high-level officials of both key ministries. He was trusted by all the stakeholders as a non-partisan partner focusing only on the cause of the country.

Nepal's agroforestry policy has significant potential to contribute to environmental and developmental impacts in the country. Interviews indicate that the Nepalese government has formulated programs and budgets on agroforestry activities in all seven provinces, and the government's annual policies and programs have prioritized agroforestry. While the amount of funding is too low to generate much impact, it is viewed as an important sign that the country owns and prioritizes this topic even in times of stretched public finance. This commitment is also viewed as an important precondition for attracting more significant funding from international donors. In terms of reach, the policy covers all land in Nepal suitable for agroforestry. A recent study found that close to 70% of the total land area of Nepal of 147,181 km² was likely suitable for trees but was not reached by current tree cover. More than 90% of Nepal's irrigated agricultural area had no trees but was to a large extent likely suitable for trees.

Going forward, Nepal's policy development work is contributing to similar processes in other countries in the region, such as Bangladesh, the Maldives, and Vietnam, where discussions are already underway.

ICRAF's contributions to the policy address all four cross-cutting issues in a significant way (section 2.4), a finding that is not reflected in the OICR report, which marks all cross-cutting issues as not targeted.

2.2.2.2 Deep Dive: M&E for Vietnam's National Payment for Forest Environmental Services (PFES) System

The development of the PFES M&E tool has been embedded in CIFOR's engagement in Vietnam since 2006 and in the ongoing Global Comparative Study on REDD+ (GCS REDD+) launched in 2009. The tool responds to the need for evidence and transparency on the progress and impact of PFES policies, including on the distribution of PFES-related benefit payments. It was piloted in some provinces and is part of a national guideline.

According to interviews and reviewed documents, CIFOR has been the primary scientific driver behind the development of the PFES M&E tool. This contribution was enabled by CIFOR's track record in Vietnam dating back to 2006 and by the close professional working relationships between the key individuals involved on both sides. An important "soft" contribution was the careful generation of demand for transparent and evidence-informed M&E with government stakeholders. Given that PFES is an object of pride and has impacts on the careers of civil servants, there was initially some resistance to exposing potential inefficiencies through thorough and transparent M&E, especially on sensitive issues such as the distribution of benefits. In this context, CIFOR's engagement with Vietnam's state television and with journalists and its other outreach activities played an important awareness-raising role.

The effects of the M&E tool on the effectiveness of Vietnam's PFES policies and related environment and development impacts have not yet materialized but were also not expected at this stage. These effects are expected to accrue over the next couple of years, when the tool is expected to be widely used and M&E data have been collected for some time. Potentially, the M&E tool can inform future PFES policies and benefit sharing, with the potential to increase overall PFES effectiveness and ultimately contribute to nationwide environmental and livelihood-related benefits. Given the importance of PFES in Vietnam—the first South Asian country to adopt the concept—even small improvements to PFES policy and implementation could translate into significant impacts. Since 2008 PFES has provided significant funding for forest protection and development throughout the country. A 2018 publication estimated that PFES payments accounted for 22% of government spending on the forestry sector and have helped to protect 55% of the total forest area in the country. PFES payments in Vietnam during 2011–20 have almost equaled the total state budget investments (VND 17,580 billion) over the same period, and the PFES-covered land area had grown to 6.8 million ha by 2020.

As with the previous deep dive OICR, CIFOR's contributions and the M&E tool address all four cross-cutting issues in a significant way, a finding that is not reflected in the OICR report, which marks all cross-cutting issues as not targeted.

2.2.3 CRP Governance and Management

This section reviews FTA governance and management arrangements with respect to their likely effects on program effectiveness. In addition, FTA's approach to prioritization is reviewed, reflecting the extra review question suggested by FTA (see section 1.3).

2.2.3.1 Governance

FTA is governed by the Independent Steering Committee (ISC), which was established in 2015 and replaced the earlier FTA Steering Committee. This change followed a CGIAR-wide evaluation of CRP governance and management and a decision by the then CGIAR Fund Council and Consortium, and was also in line with a recommendation of FTA's phase I evaluation (CGIAR IEA, 2014, recommendation 10). While the FTA Steering Committee consisted of seven institutional representatives, the ISC exhibits a sound balance between independent decision-making and institutional representation in its membership:

- Five members are independent and selected for their individual expertise. They do not contribute to or participate in FTA's activities in any way.
- Three members represent FTA partner institutions to ensure that these institutions and their constituencies can provide formal input and perspectives into the development of FTA's policies and overall management issues.
- The FTA director is a non-voting, ex officio member, bringing the perspective of the Management Team and of all scientists in the CRP to the ISC.

FTA is not a legal entity but a program operated by CGIAR Centers. Therefore, the ISC operates under the authority of the governance bodies of these centers. Until 2018 the ISC reported to the Board of Trustees of CIFOR (as the FTA lead center) and, from 2019 onward, to the Common Board of Trustees of CIFOR and ICRAF, after these two centers merged.

During the review period 2017–19, the ISC met nine times—seven times virtually and two times in person. Attendance improved from partial to full attendance during the last meetings (see Annex 9.1). ISC meeting minutes indicate in-depth discussions and decision-making taking place along the body's four principal responsibilities: strategic programmatic oversight, monitoring of FTA's delivery (including performance assessments), overseeing and strengthening of partnerships, and review of fund allocation (Annex 9.2). Overall, the ISC covered the typical core functions of global partnership programs (World Bank, 2007) in an effective and efficient manner.

There was strong agreement among interviewed FTA and partner staff that the ISC had benefited the program. It was commonly viewed as an effective and efficient governance body, providing direction and support from a programmatic and scientific rather than a Center and institutional perspective. The programmatic nature of FTA was strengthened, and the program was decreasingly viewed through a single institutional lens. Developments in the CGIAR System in 2019—mainly the merger of CIFOR and ICRAF but also the alliance between Bioversity International and CIAT—also contributed to this view.

The ISC works under clear and concise terms of reference and rules of procedure (FTA, 2017c) and a separate conflict of interest policy (FTA, 2016), reflecting the implementation of recommendations of FTA's phase I evaluation. Decision-making in the ISC is by consensus, which the review team considers appropriate and a general good practice for global partnership programs. The review team finds it especially commendable that ISC meeting minutes and documents are publicly available on the FTA website,¹⁰ which increases transparency and helps make the CRP accountable not just to FTA funders but to all FTA stakeholders.

In addition to programmatic oversight, the ISC organized several workshops to find ways forward regarding specific programmatic challenges. In 2017 a workshop was held on prioritization, laying the foundation for the introduction of operational priorities in 2018 and 2019 and the accompanying activity-based three-tier planning processes (see section 2.2.3.3). Following a science workshop on Sentinel Landscapes in late 2017, the ISC organized a special workshop on the subject in 2018 to address the

¹⁰ ISC Documents and Meeting Minutes, FTA (CGIAR Research Program on Forests, Trees and Agroforestry), <https://www.foreststreesagroforestry.org/isc-documents-and-meeting-minutes/>, visited on November 30, 2020.

continued challenges this concept faced in terms of funding and integration with other FTA activities. This gave rise to the current, more modest, approach of collocation of research and of place-based research. In 2019 a workshop was held on impact assessment, tackling among other things the pressing question of how FTA could best demonstrate its results after the program's expected 2021 sunset. These workshops demonstrate the ISC's motivation and ability to proactively engage with issues of high relevance for FTA as a program in a results-oriented and productive manner.

Overall, interviewees involved in the ISC as members or observers largely agreed that it has been an effective and efficient decision-making and advisory body, especially since roles and responsibilities vis-à-vis the lead center BoT were clarified in 2017 and after a thorough self-evaluation exercise.

2.2.3.2 Management

FTA is managed by a program director who reports to the ISC for all programmatic purposes and to the lead center director general (DG) for all administrative matters. The program director is supported by a Management Support Unit (MSU) consisting of a program manager, a senior technical advisor, and the Monitoring, Evaluation, Learning, and Impact Assessment (MELIA) coordinator. Each flagship is managed by an FP leader. Three flagship leaders are ICRAF staff, and the remaining two work with CIFOR. FPs are subdivided into CoAs—between 3 and 5 per flagship, totaling 19 across all five FPs. Cross-cutting issues are coordinated by the coordinator of gender equality and social inclusion (gender), the MELIA coordinator, and the coordinator of capacity development. The coordinator position for capacity development is currently vacant. FTA does not have separate coordinator positions for youth and climate change. Youth is covered by the gender coordinator, while climate change is the central theme of FP5, coordinated by the FP5 leader. FTA operational priorities (introduced in 2018) are coordinated by Operational Focal Points (OFPs). For most priorities (17 of 25), FP leaders act as focal points. The remaining operational priorities are coordinated by other senior scientists (5), the gender and MELIA coordinators (1 each), and the program director (1).

The FTA director leads a Management Team (MT) that coordinates operation of the program. The MT is collectively responsible for defining the program's strategy and objectives and ensuring that the objectives are met, under the oversight of the ISC (FTA, 2019a). In March 2019 the MT updated its ToR to better describe its functions—namely, (1) defining strategic orientations, (2) planning and reporting of programs, (3) managing program performance and quality of research, and (4) catalyzing internal and external partnerships. The MT is composed of the program director, the five FP leaders, and institutional representatives from each FTA managing partner not leading any FP—currently Bioversity International, CATIE, CIRAD, INBAR, and TBI. FTA's three cross-cutting coordinators are not formal members of the MT but, according to the MT meeting minutes in the review period, have frequently attended MT meetings.

The MT has been an active and effective management body, meeting 19 times in the review period (6 times in 2017, 6 times in 2018, and 7 times in 2019). Based on interviews and a review of the MT's substantive meeting minutes, it has played a central role in informing, planning, and coordinating FTA activities between all FTA managing partner organizations. Interviewed MT representatives from CATIE, CIRAD, Bioversity International, and TBI¹¹ indicated that the MT gave these partner institutions a voice in the program and strengthened the sense of working together in a partnership.

2.2.3.3 Risk Management of CGIAR W1/W2 Funds (Addressing an Additional Review Question Suggested by FTA)

In 2017–19 annual W1/W2 expenditures were only about half of what had been planned for the first three years of phase II (see section 2.1.1), and funding at times arrived later than expected. For example, at the time this report was written in November 2020, FTA had just received the last tranche of tier 2 and no tier 3 W1/W2 funding (funding tiers are explained below). According to interviews, the lack of reliability in terms of fully meeting committed W1/W2 volumes and significant payout delays represented important challenges for prioritizing and planning FTA activities that depended on W1/W2 funds, especially the work with partner institutions relying on pre-committed income. These issues seem pervasive and were already noted in the first phase of FTA (CGIAR IEA, 2014). In phase II FTA responded to these challenges with two measures: by introducing and organizing its work along operational priorities, and by introducing a three-tier, activity-based planning scheme for W1/W2-funded activities.

Operational priorities. From 2017 onward, FTA management and the ISC introduced “operational priorities” to help FTA better prioritize and manage its project portfolio. FTA management and the ISC

¹¹ A representative of INBAR could not be reached by the review team.

developed operational priorities collectively based on analysis of key knowledge gaps, major development demands, and the comparative advantage of FTA and its partners. They reflected the intent to maximize the effectiveness and impact of FTA's work (FTA, 2017d). The present set of 25 priorities was introduced in 2019; an earlier set of 22 priorities was used for the 2018 POWB.

Operational priorities introduced a single program-level framework for allocating W1/W2 funds across FPs and cross-cutting issues. From a programmatic perspective, this approach offers the advantage of cutting across the Center and research team structures mirrored in FPs and CoAs. Interviewed FTA staff felt that FPs—to some degree—represented silos and that operational priorities were a means to strengthen collaboration across Centers and units. At the same time, the 25 priorities added another layer of complexity to the program structure. Furthermore, when they were used as a basis for planning W1/W2 activities and results, no direct advantage could be taken of existing theories of change and other resources that had been formulated along FPs and CoAs.

With the evidence at hand, little can be said about the net effects the introduction of operational priorities had—or can have—on actual prioritization, such as by shifting the focus of FTA activities toward more relevant issues and/or issues with more potential for impact. It is likely, however, that the thorough and systematic preparation process has been a useful reevaluation of existing and planned work.

Three-tier budgeting framework for W1/W2 funds. In 2017, following advice of the then CGIAR System Management Board and in anticipation of potential W1/W2 funding shortfalls and payout delays, FTA developed an approach to contingency planning for the use of W1/W2 funds. The first contingency plan involved four different W1/W2 funding scenarios and introduced three funding tiers to which all planned W1/W2-funded FTA activities were subsequently assigned. Funding tiers represented assumed increasing risk: tier 1 represented W1/W2 funding expected even in a drastic shortfall scenario, tier 2 additional funding very likely expected,¹² and tier 3 additional funding up to the full amount of committed W1/W2 resources. Since then FTA has continued applying the three-tiered approach for allocating W1/W2 resources, and activities related to the different tiers were started in a phased approach, moving from lower to higher tiers over time and canceling tier 3 activities when these funds were no longer expected.

Based on interviews and the review of FTA's traffic light reports (section 2.2.1), the review team finds this approach appropriate and effective. It allows proactive and forward-looking management of W1/W2-funded activities and ensures that the activities considered most important in each FP are prioritized over others. The approach also adds to FTA's reliability vis-à-vis its partners by committing funds only when they are assured, thereby avoiding harmful situations in which FTA would be unable to fulfill its funding commitments toward partners. In this sense, FTA has found an effective and efficient way to manage the risks associated with shortfalls and delays in W1/W2 funding.

2.2.4 Progress along ToCs

Quality of ToCs. For its second phase, FTA developed comprehensive ToCs at the program and FP level and provided significant detail on causal linkages and assumptions, risk, and required partnerships. This represents an improvement over phase I, when, for example, FTA did not have a program-level ToC (CGIAR IEA, 2014).

All six ToC diagrams (Annex 5) follow a left-to-right, activity-to-outcome logframe logic that, according to interviewed FTA staff involved with developing them, was less a choice of the program than a perceived expectation for successful phase II CRP proposals. Only FP2 deviated somewhat from this logic when submitting its revised ToC in 2017. The review found that this underlying logic can easily lead to the misconception that FTA's research for development (R4D) and research in development (RinD) activities are the primary driver for the development outcomes and impacts they intend to contribute to. This misconception can lead to unrealistic expectations in terms of attributable results at that level. The phase II proposal—and interviewed FTA staff—attempt to mitigate this misconception by means of additional diagrams and frameworks, and by additional explanations of feedback loops and the nonlinear and multidirectional ways in which FTA activities relate to higher-level objectives.

FTA's ToCs focus on demonstrating linkages to objectives in FTA's sphere of interest—i.e., beyond processes and results FTA can reasonably control or significantly influence. While ToCs have been improved compared with the program's first phase, this situation still leads to less focus on explaining causal pathways within FTA's control and influence. For example, the underlying dynamics of policy and innovation processes that came out clearly in the two deep dives (section 2.2.3) are not covered.

¹² For example, a 2017 ISC note on contingency planning linked tier 2 funding to safeguard projections by the then System Management Office (SMO) and referred to corresponding advice by the then System Management Board (SMB).

Instead, present ToCs directly proceed to explaining how FTA activities and inputs link with changes further down the line. ToCs also do not account for how influence and reputation have accrued over time through decades of high-quality work and non-partisan engagement or for how change processes can be utterly unpredictable, as showcased by an example provided by CATIE for this review, after the subject came up in an interview (Annex 10).

One senior FTA staff member interviewed for this review suggested that two types of interacting ToCs would be needed to address these issues: a “system ToC” that described how the innovation systems FTA intends to influence operate in the absence of the program, and a “desired change ToC” that explains where and how FTA aims to influence that system toward increased development impact.

Continued relevance of ToCs. On the program level, the ToC remained intact and the only change has been with respect to how research activities and inputs within the ToC have been positioned through FTA’s priority setting processes (section 2.2.3.3). Most FPs require only minor updates to their ToCs. FP1 noted that the introduction of operational priorities had led to some re-partitioning between partners of the work encompassed by the ToC. FP3 retained its ToC but adapted its end-of-program outcomes to adjust to changes in FTA’s funding and program lifetime. FP4’s ToC required only minor qualitative updates, but FP4 leadership noted that quantitative targets should be adapted to better reflect phase II realities. FP5 remarked that the only change would be to merge the national policymakers and practitioners’ groups (because in reality there usually was not real distinction between them) and that the FP was otherwise still working exactly along the lines described by the ToC.

In contrast, FP2’s ToC was completely revised after that FP was initially not approved. Compared with the originally submitted version, the revised ToC more clearly depicted two principal pathways to impact and their mutual interactions: a place-based RinD pathway with direct FTA involvement all the way, and a more traditional pathway based on FTA influence on innovations and policies and their subsequent adoption and use. In addition, higher-level end-of program outcomes were removed from the revised ToC diagram. While noting these changes, the review team does not find the two versions to be of significant different overall quality.

Use of ToCs. The 2014 evaluation of FTA remarked that phase I frameworks and ToCs had been developed primarily because they were required for obtaining W1/W2 funding and less because they were required and subsequently used as a results-based management tool. There are indications—such as the introduction of 25 operational priorities as the primary organizing and management principle—that FTA’s ToCs are still not part and parcel of how FTA prioritizes, guides, and manages its work.

Regarding the use of ToCs for programming FTA activities, for example by identifying underrepresented areas of research or stakeholder engagement along ToC impact pathways, it should be noted that the low share of W1/W2 funding severely limits the program’s capacity to do so. The average W1/W2 share of 7% across flagship 2017–19 expenditures does not allow FTA much control over its project portfolio—and hence over assuring that all ToC activities and pathways are sufficiently populated—because W3/bilateral grants usually reflect specific donor priorities rather than investments in FTA as a program.

Self-assessed progress along ToCs. As described in section 1.4, the review team coordinated a self-assessment exercise with FTA leadership to provide a comprehensive view of progress along phase II ToCs. When triangulating with evidence from interviews and reports, the review team found the self-assessed progress credible and at times even somewhat conservative.

On the FTA program level, planned activities described in the ToC are being implemented in line with expectations. Activities related to prioritization are already fully implemented whereas foresight activities are planned for 2021. Most progress has been made regarding immediate outcomes on the level of targeted stakeholder engagement and along the initial stages of the research-to-development pathways of FTA’s ToC: of 23 intended changes in this area of the ToC, 19 were observed as expected, and the remaining 4 are expected to happen in line with expectations. Change on the level of FTA’s four end-of-program outcomes has started to materialize but is expected to remain below original plans because of reduced W1/W2 funding, the shortened program lifetime, and challenges in raising W3/bilateral funding for several specific topics such as Sentinel Landscapes. Another reason (related to how phase II targets were set) is an underestimation of the timescales for adoption of policies and innovations to which FTA contributed. In most instances, planned changes are still expected to happen but possibly only several years after FTA has ended.

On the flagship level, for FP1, progress along the entire ToC was perceived to proceed according to expectations, in line with the positive assessment of progress toward targets (see section 2.2.1). FP2 also self-assessed progress along almost all ToC elements as being in line with expectations. A significant portion of activities and intended changes have already met expectations in 2020. The flagship notes

important upcoming bilaterally financed work planned for the coming years—i.e., beyond 2021, when W1/W2 funding to the program is expected to end. Examples are significant expected progress on farmer decision-making along the RinD branch of the ToC in Africa, implementation of a gender-transformative approach, and development of Options to Context (OxC) methods and tools. The original change target related to certification schemes will not be reached because of a course-correction toward more participatory guarantee systems motivated by earlier research. FP3 reported activities and changes on the level of targeted engagement and first-level outcomes in line with expectations. Higher-level changes had only started to happen and were expected to intensify until 2022, apart from one end-of-program outcome (related to increased Environment-Social-Governance (ESG) conformity of lending) that had been dropped when the ToC was revised in 2019/20. FP4 knowledge production was considered largely in line with expectations already in 2020, with remaining elements expected until 2022. The same holds for boundary partner-level outcomes and the uptake of tools, methods, and approaches in landscape approaches to which FP4 has contributed. The only exception is FP4's engagement with education and training, where progress has been slow and not yet in line with expectations. In this instance, direct training and education via internships and postgraduate training had met expectations, but direct engagement with educational institutions to enable use of FTA research results lagged because of insufficient W1/W2 funding. FP5 self-assessed its progress along its ToC as in line with expectations, from activities to intended changes in policy and practice, with progress on most elements already living up to expectations by 2020. Progress regarding behavior change of national policymakers remained below expectations, which may be related to the fact that the distinction between policymakers and practitioners (for whom progress is in line with expectations) was found to be not entirely relevant, as described earlier. FP5's contributions to end-of-program outcomes are in line with expectations regarding mitigation and performance assessment but remain below expectations for outcomes related to adaptation and bioenergy because of difficulties in raising sufficient W3/bilateral funding for these lines of work.

Planned and implemented interactions with other flagships and CRPs. FTA's phase II proposal described how the program had collaborated and interfaced with other CRPs—namely CCAFS, WLE, A4NH, and PIM—in phase I, and how it planned these collaborations to go forward in phase II. Several ToCs at the flagship level include interactions with other FTA flagships and with other CRPs as well, usually by means of separate diagrams and narratives.

In interviews, several instances of collaboration between different FTA flagships were described, and FTA's approach to prioritization and W1/W2 risk management has helped increase collaboration between FPs compared with phase I of the program (see section 2.2.3.3). One example was intense collaboration between FP4 and FP5 on landscapes, making it difficult at times to decide to which flagship to map related projects. Nevertheless, interviewed FTA staff felt that, overall, significantly more inter-FP collaboration could have been achieved with more W1/W2 funding and more available time and resources for FP and CoA leaders to plan and coordinate such work.

Interviews also revealed examples of collaborative work with other CRPs and with CGIAR Centers and platforms. Reported examples of such collaborations were work in the context of the African Orphan Crops Consortium (AOCC) with IITA; collaborative research on seed system policies for vegetatively propagated crops with PIM and RTB; a stock-taking exercise of work conducted on restoration in FTA, PIM, and WLE and their associated centers; work within FTA's nutrition priority with A4NH; and collaboration with CCAFS on the Two-Degree Initiative for Food and Agriculture (2DI). Several reported collaborations concerned gender, such as research funded by CGIAR's "Collaborative Platform on Gender Research" with WLE on the feminization of agriculture, analysis of gendered aspirations in the drylands of southeastern Kenya with GLDC, and WLE's participation in the FTA-led Gender Constituency of the Global Landscapes Forum (FTA, 2020a, Table 8).

2.2.5 Ongoing and Planned Impact Estimation Work at FTA

In early 2019 FTA published its impact estimation strategy (FTA, 2019b) and has since begun implementing it with the goal of providing an evidence-based estimate of FTA's contributions toward the phase II SLO targets the program had committed itself to in its phase II proposal. The strategy relies on a theory-based approach to collate, put into perspective, and extrapolate from existing evidence to identify the most relevant methodological response to tackling the evidence-related challenges regarding measuring impact described earlier in this report, which are also recognized in the strategy and in the first two draft assessments shared with the review team. The strategy introduces five principal challenges FTA contributes to addressing:

1. Accelerating rates of deforestation and forest degradation
2. High prevalence of degraded land and ecosystem services
3. Unsustainable land use practices widespread
4. Persistent rural poverty with increasing levels of vulnerability
5. Rising demand and need for nutritious food for both current and future generations.

The review team finds the strategy comprehensive and methodologically sound but somewhat too "heavy" to ensure its successful implementation by the end of 2021. Fortunately, actual implementation appears to be more pragmatic and is end-product oriented. Theories of change are being developed for each of these challenges, available evidence is being collected and linked to these TOCs, and selected remaining evidence gaps are being filled with additional M&E activities, including some fieldwork. One remaining caveat of the approach is that the five challenges represent a new categorization of FTA's work that, while usefully oriented to demand and results, only indirectly builds on the approaches and TOCs developed in the flagships, CoAs, and operational priorities.

The work has progressed furthest for challenges 1 and 5, and early draft papers on preliminary findings and challenges going forward were shared with the review team. Based on the review of the work to date and interviews with staff involved with the impact estimation work, the review team does not expect that FTA's contributions to the SLO targets can be straightforwardly "measured," nor is that the intention of the ongoing work. Rather, impact will be estimated and extrapolated from a review of all contributing FTA activities and the available array of fragmented and scattered evidence on outcomes and impacts.

2.2.6 Conclusions on Effectiveness

2.2.6.1 Achievement of Planned Outputs and Outcomes (Conclusions)

Analysis and triangulation of available evidence show that FTA has exhibited strong implementation performance in phase II and is likely to make significant contributions to most planned end-of-program targets. While several targets have been reached and even exceeded, the bulk of expected contributions at that level will remain below original intentions because of reduced W1/W2 funding, the shortened program lifetime, and difficulties in raising W3/bilateral funding for selected issues. While not assessed by the review team, the Covid-19 pandemic is also likely to impact FTA's contributions in 2020 and 2021. Furthermore, FTA has only limited control over W3/bilateral projects mapped to the program that constitute the lion's share (93%) of FTA flagship-level funding for 2017–19, and some phase II targets may simply have been overly ambitious.

2.2.6.2 Demonstrated Importance of Outcomes (Conclusions)

Both OICRs describe significant contributions to national policy and innovation processes that were validated by the review team. In Nepal, ICRAF's involvement shaped the policy content and likely accelerated the policy development process by several years. In Vietnam, CIFOR was the principal driver for the PFES M&E tool that is currently being rolled out. In both cases, contributions to large-scale environmental and developmental impacts can be expected in several years but naturally hinge on external factors such as implementation financing.

Contributing activities were manifold and stretched over several years, even predating the establishment of FTA in 2011. Success has depended critically on the ability of a limited number of key individuals to build and maintain trust-based collaborative relationships, requiring time, motivation, and skills that stretch beyond science to include diplomacy, networking, and facilitation.

Rather than FTA, the CGIAR Centers CIFOR and ICRAF were recognized as partners by the national stakeholders. This corresponded to earlier findings that many boundary partners were aware only of participating institutions but not of FTA as a program (CGIAR IEA, 2014). Given the imminent sunset of FTA and questions about the sustainability of ongoing bilateral support, the review team does not consider the program's limited visibility and branding to represent a problem.

Regarding reporting, neither OICR convincingly demonstrated the importance of the causal contributions made. For evidence on critical causal contributions, the direct feedback of in-country stakeholders was more enlightening than the descriptions of activities and potential future impacts found in the OICRs. In both OICRs, cross-cutting issues were systematically underreported.

2.2.6.3 Conclusions (Governance and Management)

Compared with phase I, FTA increased its programmatic governance and management performance. The responsibilities of the ISC were clarified and strengthened—including vis-à-vis the lead center—and it provided effective and hands-on oversight to FTA. The MT was active and effective, brought FTA managing partners closer together, and found an efficient way to program W1/W2 resources across institutional boundaries. Overall, FTA's governance and management arrangements have strengthened FTA as a collaborative global program, and the current setup represents a good practice example for CRPs.

Naturally, the ISC and the MT govern and manage mostly W1/W2-funded activities, and their control over W3/bilaterally funded projects mapped to FTA is limited. Since W1/W2 constitutes only 7% of overall flagship expenditures in the evaluation period, FTA governance and management were rightly focused on enabling FTA as a program by making the whole larger than the sum of its bilaterally funded projects. Based on experience, FTA staff estimated that falling below a threshold of 10–15% of W1/W2 funds at the program level would risk fragmenting the program into its constituent parts (over the evaluation period the total share of W1/W2 for flagships and other program activities was 10%).

The review team confirmed a strong need for a proactive approach toward managing W1/W2 resources, which were persistently unreliable in terms of volume and timing throughout FTA's existence. The introduction of 25 operational priorities helped better manage across institutional boundaries and may have sharpened FTA's focus. At the same time, it added complexity and limited the use of existing phase II planning resources such as the flagship ToCs and CoA-level work programs. The three-tier, activity-based management system introduced for allocating W1/W2 funding was found to be relevant, appropriate, and effective and can be considered good practice for future R4D programs as long as this funding source remains unstable.

2.2.6.4 Progress along ToCs (Conclusions)

FTA's ToCs on the program and flagship level are of good quality, but FTA can further improve them by better explaining how its activities link up with the policy and innovation systems the program aims to influence. The current underlying left-to-right, activity-to-outcome results chain logic carries the risk of suggesting a false assumption that FTA's R4D activities are the primary drivers for environmental and development outcomes and impacts.

FTA's ToCs have remained relevant since they were updated in 2016 (2017 for FP2). Most FPs, however, consider it necessary to adapt the quantitative outcome-level targets reflected in some ToCs for reasons related to funding and the reduced program lifetime, the long timescales until FTA activities contribute to outcome-level changes, and, for some topics, difficulties in securing sufficient W3/bilateral support.

The long timescales required to achieve impact in a funding environment that seeks ambitious short-term contributions to development outcomes and impacts represent a conundrum for R4D programs like FTA. In interviews, FTA staff estimated that 10 or more years could easily pass until the development and environmental outcomes to which program activities contributed would materialize. These timescales are in line with observations made in the two deep dives (section 2.2.2). A remark frequently made during interviews with FTA staff was that "trees grow slowly," and indeed even for fast-growing tree species a couple of years pass between planting and the first agroforestry benefits. At the same time, when applying for phase I funding in 2011 and for phase II funding in 2016, FTA was instructed to demonstrate its contributions to the SRF goals and targets, reflecting mass-scale environmental and development impacts.

There is little evidence that FTA's ToCs, which are mandatory elements of all CRP phase II proposals, have been used much after helping to secure FTA's W1/W2 funding. One factor limiting the use of ToCs in

CRPs is a low share of W1/W2 funding. FTA is driven largely by W3/bilaterally funded projects and programs. While these projects are mapped to FTA, the program has little control over them and hence little freedom to tactically focus work on critical areas in its ToCs. FTA’s progress along its ToCs was found to be mostly in line with expectations. This is remarkable considering that the program received only about half of its expected W1/W2 funding and is expected to sunset a year early.

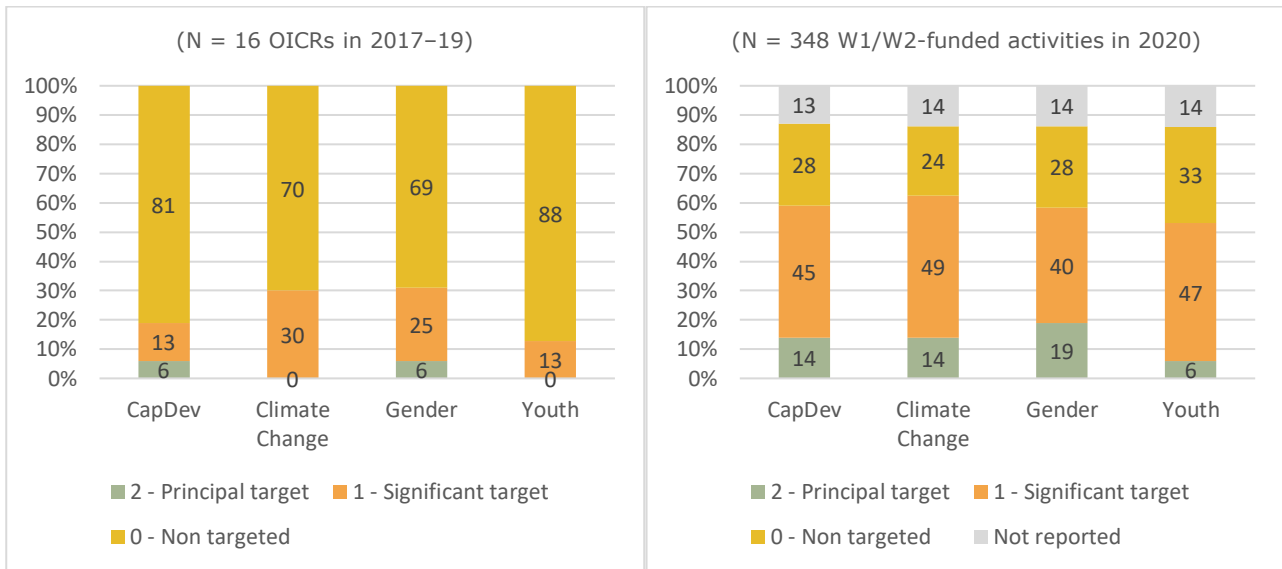
There is also evidence of FTA’s collaboration with other CRPs and CGIAR Centers and platforms. Collaboration between FTA’s flagships has benefited from how FTA prioritized and managed W1/W2 funds in phase II but suffered from constraints in staff capacity and resources.

2.3 Cross-Cutting Issues

The targeting of cross-cutting issues in W1/W2-funded FTA activities and OICRs is summarized in Figure 2. In 2020 these activities reported targeting cross-cutting issues in more than half of all cases. OICRs, however, reported significantly less targeting, confirming systematic underreporting described in interviews and two OICR deep dives in section 2.2.2. A recent evaluation of gender integration at FTA also found that “some [FTA] research was mis-classified as ‘Not gender relevant’” (Charles Darwin University, 2019). No aggregate information on targeting of cross-cutting issues in W3/bilateral activities was available to the review team.

It should be noted that FTA works with a somewhat different set of three cross-cutting themes— (1) gender and youth, (2) MELIA, and (3) capacity development—which is also reflected in FTA’s management structure.

Figure 2. Targeting of cross-cutting issues



Source: FTA traffic light report 2020, CAS Dashboard analysis, and review team analysis.

Note: 2020 traffic light data were chosen because not all cross-cutting issues were tracked in earlier traffic light reports. Only 10 OICRs reported climate change targeting as this was not required in 2017.

2.3.1 Capacity Development

In 2017–19 FTA reported 71,000 short-term trainees and almost 700 long-term trainees, the latter including 75 PhD students in 2018 and 2019,¹³ of which 52% were women (Table 7). These figures are in line with phase I capacity development figures.¹⁴

As in phase I, short-term training numbers fluctuated significantly from year to year, and the reported number of short-term trainees in 2017 represented 66% of all short-term trainees reported in the entire

¹³ In 2017 the number of PhD students was not separately reported in MARLO but was included in the long-term training total.

¹⁴ Earlier short-term training figures were 6,751 (61% women) in 2013, 6,792 (37%) in 2014, and 49,800 (28%) in 2015. The numbers of long-term trainees in the same period were 213 (40%) in 2013, 323 (43%) in 2014, and 122 (30%) in 2015 (CGIAR IEA, 2017a).

three-year evaluation period. The review team was unable to pinpoint the specific projects associated with the large figure in 2017 beyond the fact that the bulk had originated from FP2 work involving ICRAF and INBAR. An earlier CGIAR-wide evaluation of capacity development noted that similarly high short-term training figures in FTA had been associated with the mass dissemination of training messages (CGIAR IEA, 2017a).

Table 7: Number and gender of FTA trainees

	2017	2018	2019	Total
Number of short-term trainees	47,359	10,141	14,203	71,703
Share of women	31%	45%	55%	38%
Number of long-term trainees	318	293	84	695
Share of women	39%	48%	54%	44%

Source: CGIAR Results Dashboard (<https://www.cgiar.org/food-security-impact/results-dashboard/>), visited on November 15, 2020.

Another form of capacity development at the individual level is mutual on-the-job learning between FTA collaborators and stakeholders, involving considerable investment in terms of mentoring and coaching by involved staff. While earlier evidence showed that this type of capacity development was highly important and widely used in CGIAR, it has not been systematically tracked by FTA or at the system level. This type of co-learning capacity development was, however, reflected in the only OICR (out of 16) that reported capacity development as a principal target¹⁵ and in the two deep-dive OICRs (section 2.2.2). Capacity development on the organizational and institutional level was observed as well. For example, the outcome evaluation of the SUCCESS project reported on agroforestry community networks and stakeholder coalitions to support individual-level capacity development and enable uptake and use of research methods and findings (FTA, 2019c; Figure 3).

Upon closer inspection, both OICRs chosen for deep-dive analysis revealed substantial elements of capacity development. The OICR on ICRAF's contribution to Nepal's agroforestry policy highlighted a study visit of the Inter-Ministerial Coordinating Committee (IMCC) to India, in addition to conferences, several instances of training, and informal on-the-job capacity development. In Vietnam, more than 150 stakeholders received training.

W1/W2 resources allocated directly to capacity development were minor—e.g., US\$108,000 in 2019, based on FTA's 2019 traffic light report—and were mostly dedicated to the production and dissemination of guidance materials and coordination. After the sudden passing away of ICRAF's head of capacity development in 2020, the current coordinator only has had a minor share of work time allocated to this subject. Hence, most of FTA's capacity development takes place as part of other projects, without significant central support or coordination. Furthermore, it is questionable what tangible effects the assessment of FTA capacity needs for phase II and the FTA capacity development action plan (FTA, 2020c,d), both published in 2020 in response to the recommendations of earlier evaluations, can still have on the program, given its expected sunset in 2021 and with the limited amount W1/W2 funding and staff capacity.

The significant underfunding of capacity development has been noted also at the CGIAR System level. The recommendation to conduct a System-wide evaluation of capacity development activities appears not to have been implemented and is also not reflected in CGIAR's funding priorities (CGIAR IEA, 2017a). The review team considers this a significant risk for the sustainability of the changes CGIAR aims to contribute to in developing countries. Reflecting these worries, interviewed FTA staff remarked that the substantial resources invested in sending students from developing countries to universities in the United States and other Northern countries, as for example in the context of the CIFOR-USAID Fellowship (Lestari 2019), might not be the most cost-effective way to strengthen NARSs and similar institutions. These interviewees suggested that investing resources to strengthen education systems and capacities of

¹⁵ OICR 3479: "Options by context approach to agronomic innovation profoundly changed international, government, NGO, and private sector policy and practice across 14 countries." The OICR says that "the Options by Context methodology facilitates co-learning."

NARSs in developing countries, rather than those of individual students, could add more value and be more sustainable.¹⁶

2.3.2 Climate Change

FTA's FP5 (Climate Change Mitigation and Adaptation Opportunities in Forests, Trees, and Agroforestry) is explicitly dedicated to climate change, elevating this theme to more than a cross-cutting issues for FTA. Accordingly, FTA represents the second CRP (next to CCAFS) with a dedicated focus on climate change. FP5 accounts for 19% (US\$40.6 million) of FTA's total expenditures in 2017–19. This includes US\$2.7 million (12%) of FTA's total W1/W2 funding in the same period. As detailed previously, FP5 is expected to fully deliver on most of its mitigation-related outcomes whereas the work on adaptation and bioenergy has lagged.

Non-FP5 activities targeted climate change to varying degrees. Excluding FP5 projects from Figure 2, 5% of the remaining activities had a principal climate change target, 54% targeted it significantly, 27% did not target it, and 13% did not report on the degree of targeting (N = 303).

Three of 16 OICRs reported significant climate change targeting, but the previously described possibility of systematic underreporting should be noted. Both deep-dive OICRs reported zero targeting whereas the review team considered them to significantly/principally target climate change.

FTA does not have a dedicated coordinator for climate change. According to interviews, FP5 could play such a role for FTA and has also done so to some extent. For example, interviewees estimated that close to a third of FTA's work on landscapes was strongly linked with (or mapped to) FP5. Other FPs reported fewer interactions, mostly because of constraints in W1/W2 funding and staff capacity. Across interviews, the understanding of climate change was generally considered to be part and parcel of FTA's work across all flagships to such a degree that it was not considered in need of additional central coordination.

2.3.3 Gender

Since 2018 FTA has dedicated one operational priority to gender, led by FTA's coordinator of gender equality and social inclusion. Gender focal points are assigned to each flagship and managing partner.

Gender is a mainstreamed cross-cutting issue at FTA, and both OICRs chosen for deep dives in this review had relevant gender targeting. One¹⁷ of FTA's 16 OICRs has gender as the principal (i.e., more than significant) target. Gender also received sizable W1/W2 funding in the evaluation period. In 2019 US\$566,350 was programmed under the gender priority, based on FTA's 2019 traffic light report.

Statistically, 19% of W1/W2-funded activities reported gender as a principal target and 40% as a significant target (Figure 2) in 2020. Based on detailed gender targeting data available for 2017, gender was least targeted in FP1 (not targeted in 79% of FP1's 94 outputs that year), likely owing to that flagship's large share of biophysical research without immediate gender objectives. Gender targeting was strongest in FP4, with 40 and 43% of outputs having gender as a principal or significant target, respectively. Gender targeting of FP2 was not reported because that flagship did not receive W1/W2 funds in 2017. Beyond W1/W2-funded activities, FTA reported 70 milestones in CGIAR's Results Dashboard¹⁸ in 2017–19, 91% with significant gender objectives.

FTA's gender strategy was recently assessed as overall good and above average compared with other CRPs, and without weaknesses along the nine criteria that were used.¹⁹ The 2020 evaluation of gender in CGIAR research selected FTA as a good practice case example and stated that "there are CRPs—including Forests, Trees and Agroforestry (FTA)—that already consider gender alongside other axes of social difference, such as age, ethnicity etc. in designing their research, in line with the SRF's broader focus on marginalized groups" (CGIAR IEA, 2017b, volume I, p. 12). That evaluation highlighted that the

¹⁶ A formative evaluation of one of these programs (CIFOR-USAID Fellowship program) benchmarked the average annual cost per student (US\$76,200) with similar fellowship programs but did not compare with local capacity development alternatives. The study noted, however, that all fellows had returned to Indonesia and that 20 of 22 students had obtained their master's degree and now work in sectors related to natural resource management.

¹⁷ OICR3369: "Engagement strategy has seen FTA's research and recommendations inform the gender-responsive design and implementation of global policy processes."

¹⁸ <https://www.cgiar.org/food-security-impact/results-dashboard/>, last visited in November 30, 2020.

¹⁹ Justification and rationale (good), Gender responsive goals and objectives (good), Impact pathways (good), Gender-related activities (good), M&E (average), Budget presentation (average), Management system (good), and Review of capacity (good) (CGIAR IEA, 2017b, volume I, p. 13, Figure 2).

awareness of FTA scientists of the importance of gender had grown, that the program's gender capacity had increased, and that more gender-responsive and gender-sensitive research was undertaken. The evaluation also praised the application of the Gender Equality in Research Scale (GEIRS) framework as a systematic process for ensuring gender input in the design phase of projects.

A self-commissioned evaluation of gender integration in FTA (Charles Darwin University, 2019) found steadily increasing FTA publications related to gender from 2011 to 2016, followed by a decline in 2017 and 2018 (no comprehensive information was available for 2019). The evaluation also noted that FP1 and FP3 had low levels of gender publications, a finding that was explained in interviews with flagship leaders as reflecting the degree to which some aspects of work in each flagship were simply not gender relevant. The review issued 13 recommendations for FTA that do not appear entirely realistic in view of the limited remaining lifetime of the program.

Regarding gender in the workplace, another evaluation found that the percentage of women scientists had significantly increased and was now above the 50% threshold in CIFOR and ICRAF, and significantly above that threshold in Bioversity International (CGIAR IEA, 2017b, volume II). The non-CGIAR managing partners of FTA were not assessed in that evaluation.

2.3.4 Youth

The youth theme was somewhat less prioritized and mainstreamed as a cross-cutting issue at FTA, with only 6% of W1/W2-funded activities reporting it as principal target in 2020 (Figure 2). There was significantly less relevant evidence available to the review team than for gender and capacity development.

Based on additional available data for 2017, youth was not targeted at all in 62% of W1/W2-funded outputs (N = 215) from FP1, FP3, FP4, and FP5 (FP2 did not receive any W1/W2 funds that year). Only FP4 showed significant targeting of youth, with 52% of the flagship's 95 outputs targeting youth principally, and 31% significantly. Across FTA's 16 OICRs, youth was not targeted in 14 and significantly targeted in the remaining two. As before, the possibility of systematic underreporting of cross-cutting issues in OICRs should be noted.

At FTA, youth is managed mostly as part of the gender priority. This priority aims at integrating a gender equality and social inclusion perspective—including issues of generation (youth) and the intersection of gender and factors of social differentiation that cause marginalization—across the FTA portfolio.

2.3.5 Conclusions (Cross-Cutting Issues)

FTA's academic education activities and short-term training have remained in line with phase I, but dedicated investment of W1/W2 resources for capacity development has dwindled to low levels, implying that the bulk of FTA's capacity development is delivered as part of other projects. The review team finds that capacity development is currently under-prioritized at the program level and reiterates the recommendations of the CGIAR-wide evaluation of capacity development (CGIAR, 2017a) toward more dedicated resources, the rollout of a more differentiated approach, and a focus on strengthening individual and organizational/institutional capacities directly in NARSs in developing countries.

Climate change is a cross-cutting issue for FPs 1–4. Next to CCAFS, FP5 represents the second principal program-level targeting of climate change mitigation and adaptation issues in CGIAR. In contrast to gender/youth and capacity development, FTA staff considers climate change know-how to already be mainstreamed across the program.

Gender has been driven by FTA's Gender Coordination Team and represents a widely mainstreamed cross-cutting issue. Among CRPs, FTA is considered a good practice example for integrating gender into R4D. Based on available information, it remained unclear how much more potential there exists for further intensifying the mainstreaming of gender at FTA. All managing CGIAR FTA partners have steadily increased the share of women in their research staff to more than 50%.

Youth remains a cross-cutting issue without dedicated institutional or financial support at FTA and with less evidence on activities and outcomes. This cross-cutting issue is managed as part of the gender priority.

Regarding all cross-cutting issues, two additional conclusions can be drawn.

- There may have been some level of systematic underreporting regarding the degree to which gender, youth, capacity development, and climate change have been targeted, possibly linked to a narrow focus on the degree to which these issues were relevant to the immediate activities at hand.

- Most information on cross-cutting issues available to the review team concerned W1/W2-funded activities and their results. Considering that 93% of expenditures in FPs 1–5 were W3/bilateral in 2017–19, there is a need for more information about the degree to which W3/bilateral projects mapped to FTA target gender, youth, capacity development, and climate change.

2.4 Future Orientation

FTA activities and results cut across several countries and disciplines and are linked to important development priorities from the global to the local levels. However, FTA's claims of contributing to nine SDGs seems to be underreported and are not all linked to specific SDGs. This reporting gap should be corrected to provide the complete scope of FTA's contributions to each of the nine SDGs. Until 2030 the most needed research for development requiring large partnerships like FTA will remain centered on the SDGs. Key areas of FTA focus could include climate change, food security, improved livelihood opportunities, landscape management, and inequality.

So far, the most important impact pathways for FTA as a whole have been and should continue to be its influence on government and on international policy processes. The review team has provided examples of such FTA engagements and contribution claims in sections 2.1.3 and 2.2.1. This evidence is corroborated by a survey conducted during the FTA 2020 Science Conference showing that 47% and 21% of the participants respectively selected "influencing government policy" and "influencing international policies" as the most important impact pathways for FTA; 13% and 10% of participants respectively suggested "influencing research agenda and research practice" and "influencing small-scale farmers/resource managers." Only 6% and 3% respectively suggested "influencing others" and "industry practice."

At the CGIAR level, 57% of participants in the FTA 2020 Science Conference selected lack of tenure rights and lack of access to natural resources as the main reasons why landscape finance may not result in sustainability practices and areas that CGIAR research could address in the future. Lack of locally appropriate financial instruments was also identified as the main barrier to finance for integrated landscapes that CGIAR research could address in the coming years.

The review team asked FTA interviewees the one thing that should absolutely be maintained and protected moving forward and the one thing that should absolutely change moving forward. Annex 6 presents a summary of the 16 respondents' suggestions at the FTA and CGIAR System levels.

3 Recommendations

3.1 Recommendations for FTA POWB 2021

R 1. FTA should ensure that current overall high scientific productivity and implementation performance continues until the end of 2021 by taking measures to keep program-level staff and program partners informed, motivated, and involved.

R 2. FTA should continue its scientific contributions to emerging and important global issues at the policy and project design levels as well as development implementation levels. These issues include gender, food security, agroecology, climate change, climate finance, value chains, and biodiversity conservation.

R 3. FTA should do more targeted communication and dissemination of research findings to different audiences especially in developing countries. FTA should go beyond global communications via Twitter, blogs, and news outlets to more focused dissemination in different relevant regional and national platforms and networks. Let more development practitioners, NGOs, decision-makers, and researchers from developing countries know that most of FTA's publications are open access.

R 4. FTA should find ways to conserve and protect the significant value-added it has built as a program beyond 2021, within or outside One CGIAR. This includes key staff currently financed from W1/W2 resources, FTA governance and management arrangements and related lessons learned, and the important personal and institutional relationships between FTA partners and their staff.

R 5. FTA should ensure timely synthesis and continued availability of its legacy in terms of knowledge and tools from phases I and II.

R 6. FTA should continue the ongoing end-of-program impact estimation work in a pragmatic and end-product-oriented manner that ensures that relevant findings will be available and can be effectively

communicated before the program ends in 2021. In addition to the current approach based on building estimates from the bottom up using specific but mostly project-level evidence, qualitative evaluation approaches could be useful for triangulation because of their ability to directly estimate progress made at a more aggregated level. To this end, a broad FTA boundary partner survey and qualitative self-assessments by FTA staff such as those conducted for this review could be options.

While the impetus of the impact estimation work is accountability vis-à-vis FTA's SLO-level commitments, which largely represent reach targets, it would be useful to support learning and future planning for programs like FTA by putting equal focus on estimating the degree to which FTA made a difference to the policies and innovations that channel further reach, and on lessons learned about how progress was achieved. If successful, this could contribute to a better understanding of factors that are "soft" but at the same time critical for success, such as the quality of personal and institutional relationships, which are currently neither identified nor tracked.

3.2 CGIAR System-Level Recommendations

R 7. CGIAR should support FTA partners in finding ways to conserve and protect the significant value-added FTA has built as a program. Without a global program addressing the critical R4D needs currently covered by FTA, CGIAR would lack a critical portion of its R4D portfolio.

R 8. Going forward, the System-level governance and management of CGIAR should fully embrace the reality that the bulk of CGIAR projects are bilaterally financed, with the result that programs like FTA have only limited control over the bilateral projects mapped to them because primary accountability for those projects lies with the bilateral donor and not with the program. Based on this understanding, future untied CGIAR funding should be strategically invested (1) to strengthen programmatic collaboration between and beyond CGIAR Centers and (2) to leverage, influence, and complement bilateral project work.

R 9. CGIAR should reduce the reporting burden and transaction cost for CRPs in their last year to the extent possible. Going forward, carefully balance the benefits and costs associated with System-level planning and reporting and develop a lean and efficient results-informed management system that satisfies the most important information needs of CGIAR donors and other stakeholders but avoids an excessive reporting burden on CGIAR scientists and managers and on CGIAR System-level staff.

R 10. Future CGIAR R4D programs should set targets against which effectiveness can be meaningfully assessed. CGIAR's SLOs and similar quantitative impact-level reach targets are not meaningful because they focus on the effects of innovations and policies on people and environments but lack targeting information about the degree to which R4D programs are intended to contribute to them. Meaningful R4D targets should focus on the extent to which R4D programs are expected to influence innovation and policy processes. The potential impact of these innovations and policies is far beyond the control of R4D programs and therefore not a meaningful basis for assessing their effectiveness. For example, it is true that (1) FTA made some contribution to India's agroforestry policy, launched in 2014, and that (2) the policy is likely to positively affect a significant share of India's landmass of 3.3 million km² and a significant share of its 1.4 billion people. In this way, FTA's involvement with this one policy would single-handedly surpass most SLO targets to which FTA had committed itself. Such an argument would, however, be a poor indication of FTA's effectiveness because it lacks information about the degree to which FTA influenced the policy.

R 11. The fact that R4D programs usually influence rather than drive policy and innovation processes should be better reflected in the design of future R4D programs and in their ToCs. First, the dynamics of relevant innovation systems should be described; second, this understanding should be used to identify, describe, and plan where and how R4D programs can exert the desired influence on these systems.

4 Lessons Learned

It took five to seven years for FTA (phase I and three years of phase II) to reach the present level of programmatic value-added. Highlights reflecting this are the closer collaboration between FTA partners (including the CIFOR/ICRAF merger), an independent and efficiently operating program governance, and effective prioritization and management of W1/W2 resources at the program (rather than the flagship) level. Going forward, achieving such value-added in R4D programs may be accelerated if good practices are immediately applied, but the review team estimates that slow-moving variables such as the building of trust and effective institutional linkages will still lead to a warm-up phase of several years for any new R4D program.

Good partnerships, both internal and external, remain one of the main values of FTA. These should therefore be reported by each flagship in a more succinct, comprehensive, and complete manner by the end of the program. In future R4D programs, a common format could be developed and used by all the flagships to report different types of external partners at the CGIAR level and at upstream and downstream research levels, with clear categorization such as research institutions, universities, international organizations, the private sector, and NGOs.

FTA scientists are agile and adaptive. They have maintained a high quality and volume of scientific productivity in the face of uncertainties. Internally, they continually adjust to reductions in windows 1 and 2 funding. Externally, they present FTA priorities in ways that realign with the thematic and geographic focus and priorities of bilateral donors. In some cases, these uncertainties have led to the loss of key scientists in some flagships. For other scientists, it means working overtime in stressful conditions without additional pay, while some see this situation as a call for more efficiency in delivering FTA results.

FTA partnerships are built on a complex web of past and current professional relations. While some of the current FTA partnerships with INBAR and Tropenbos were built in phase II, other managing partners have been working together since long before the creation of FTA, and this is true for many of the external upstream and downstream research partners as well. FTA partnerships have also involved long-term research collaboration with universities and research institutions around the world. A case in point is the CIFOR associates or CIFOR-CIRAD scientists. FTA partnership is also strengthened through informal scientist-to-scientist collaboration on thematic issues they are passionate about, irrespective of the institutions they work for. These partnership models are long term and will go beyond FTA or any individual project or program.

Data and information provided for the review do not give a full picture of FTA. The scientific focus of the current review is based on specific CGIAR FTA datasets, pre-analyzed data, and summarized reports that do not provide the entire picture of FTA performance. For example, the annual reports are highly summarized, leaving out some important information for this review. Another example is the focus of this review on ISI Web of Science publications, which represent one among many scientific products that are used to inform policy design and development actions on the ground. This could lead to inaccurate analysis, findings, interpretation, and as a result erroneous conclusions.

5 Annexes

Find the Annexes and Brief here:

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