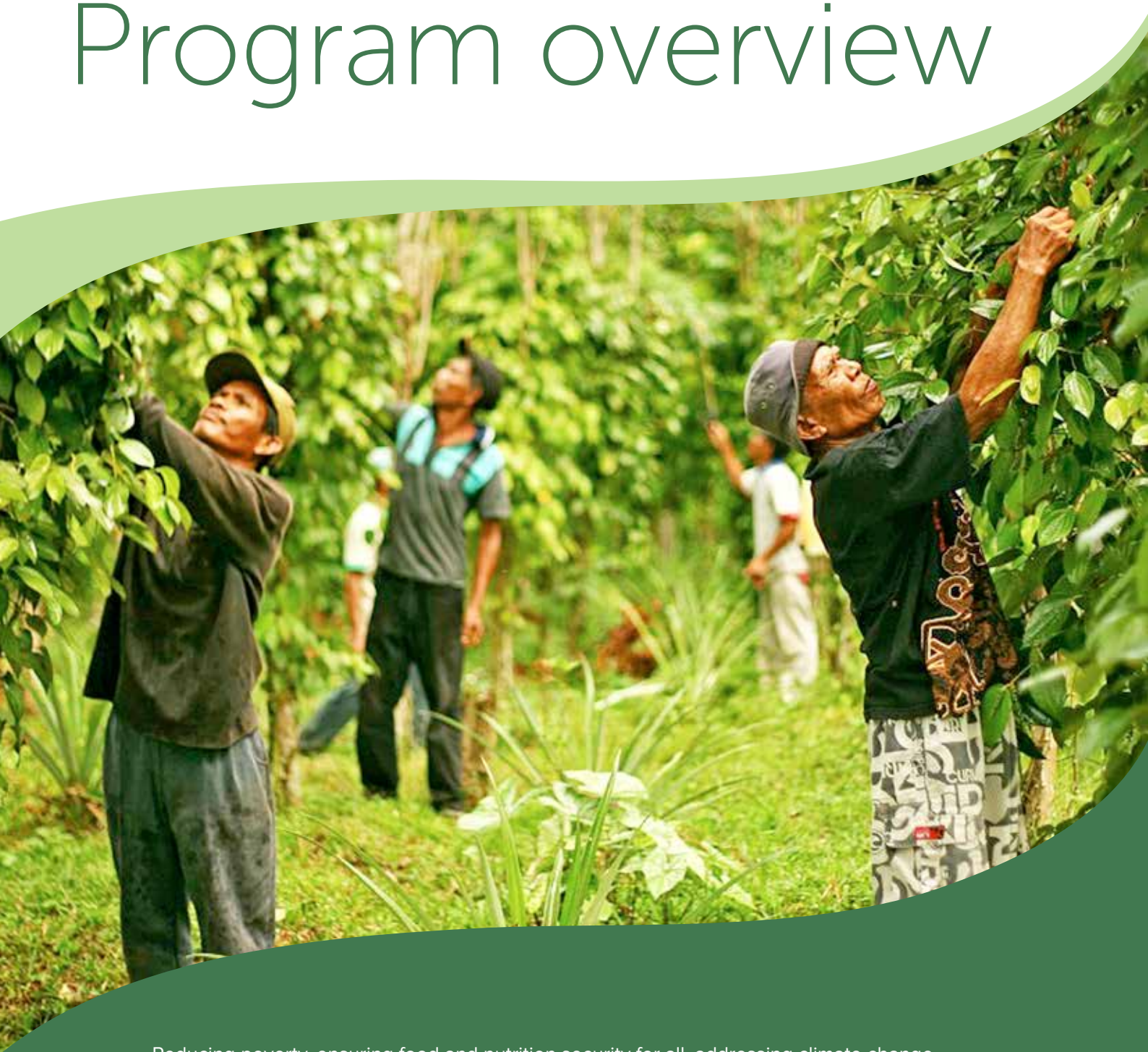
CGIAR

RESEARCH PROGRAM ON
Forests, Trees and Agroforestry

Program overview



Reducing poverty, ensuring food and nutrition security for all, addressing climate change, protecting natural resources and ecosystem services, and achieving sustainable production and consumption are among the greatest challenges of our time, from the local level to a global scale. The CGIAR Research Program on Forests, Trees and Agroforestry (FTA), led by the Center for International Forestry Research (CIFOR), is the world's largest research for development partnership recognizing that forests, trees and agroforestry are central to solving these challenges.

△ Women fill potting bags with soil near Mau Forest, Kenya. Photo by P. Shepherd/CIFOR

Challenges and opportunities for forests, trees and agroforestry

An estimated 1.6 billion people depend on forests and trees, including trees on farms, for their livelihoods. Among them are poor and marginalized groups, while indigenous peoples are proportionally more dependent on the goods and services that forests and trees provide. Forests, trees and agroforestry are a fundamental part of ecological balance on earth. They produce food, fibers, energy, water and ecosystem services, and are required to maintain biodiversity and adapt to and mitigate climate change.

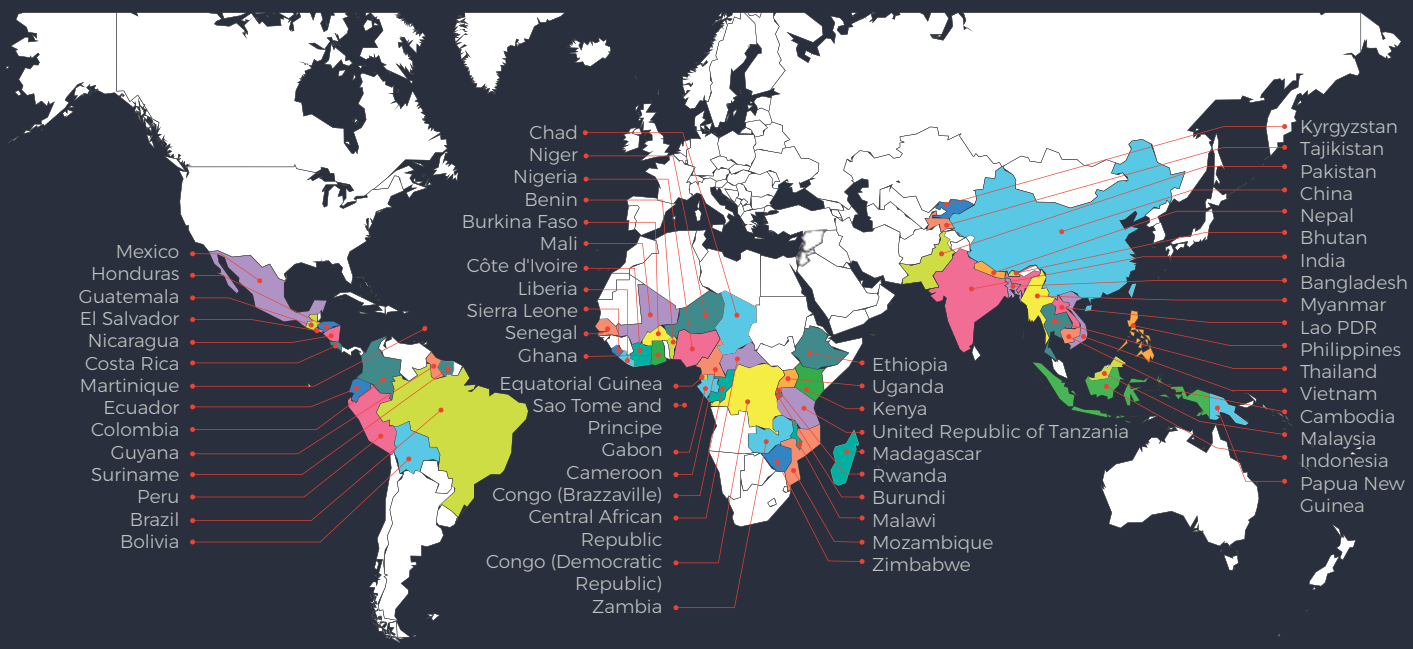
Much of the progress in overcoming poverty and hunger has been at the expense of natural resources. Forests and trees have been hit particularly hard, including being destroyed for agriculture and other land uses. In many places, agriculture has become more intensive and reliant on artificial resources, disconnected from its natural resource base. If these trends are not reversed, the future of agriculture, nature and humanity itself will be put into question.

Forests and trees are central to the implementation of the Paris Agreement on climate change and the achievement of the Sustainable Development Goals (SDGs) for which they offer several pathways. But things are not straightforward. To unlock the potential of forests, trees and agroforestry, there is a need for improved management, transformed governance and new institutional arrangement, involving public and private actors, aiming for improved production systems; securing people's livelihoods, resilience and food security, including for women, and young and marginalized people; and promoting the equitable distribution of benefits.

FTA research aims to better understand the roles of forests, trees and agroforestry, the solutions to enhance them — from technical options, management and governance to policy — in order to enable actors to unlock the potential and maximize the benefits that forests, as well as trees in landscapes and agricultural systems, can bring.

Where do we work?

FTA has a presence in **60** countries in 2018



What does FTA work on?

Agricultural research today must address a more complex set of objectives. FTA is the only CGIAR research program that works on all aspects of the value and benefits of trees and forests for agricultural landscapes and sustainability as linked to agricultural development.

FTA addresses challenges from landscapes to livelihoods by developing, providing and promoting evidence-based solutions for farmers, foresters, practitioners, value-chain actors and policy makers.

FTA complements the other CGIAR agri-food programs focused on specific crops and commodities, and contributes to CGIAR's integrative programs for policies, institutions and markets, nutrition and health, ecosystem services and climate change.

FTA works across **five main research domains (which are known as flagship programs):**

1. Tree genetic resources to bridge production gaps and promote resilience
2. Enhancing how trees and forests contribute to smallholder livelihoods
3. Sustainable value chains and investments to support forest conservation and equitable development
4. Landscape dynamics, productivity and resilience
5. Forests, trees and agroforestry for climate change adaptation and mitigation

FTA also comprises **cross-cutting areas of work:**

- Gender equality and social inclusion
- Monitoring, evaluation, learning and impact assessment (MELIA)

Operational priorities

FTA's activities focus on 22 operational priorities that are led by the different flagship programs and that are articulated as follows.

The ultimate **outcomes at household level** of enhanced nutrition and food security and improved livelihoods, including gender (operational priorities 3, 15 and 10) are supported by **action in farming systems** – silvopastoral systems, market-based agroforestry-forestry, the farm-forest policy interface, agroecology, plantations and tree crop commodities (11, 12, 13, 14 and 2) – and by **coordinated action along value chains**, namely inclusive finance and business models, innovating finance for sustainable landscapes, public and private commitments to zero deforestation, and effectiveness of approaches to sustainable supply such as certification and FLEGT (16, 17, 18 and 20).

They rely on **sustainable management of natural resources** – land and forest restoration, biodiversity, safeguarding and conservation of genetic resources, orphan crops, landscape governance (1, 4, 19 and 9) – and fully **address climate change** and implementation of the Nationally Determined Contributions of the Paris Agreement on Climate Change (NDCs), both adaptation and mitigation, including zero deforestation, bioenergy and blue carbon and peatlands (5, 6, 7, 8 and 18). Two operational priorities **ensure the quality of FTA research for development** (21) and monitor a set of sentinel landscapes (22).

The ordering does not imply any prioritization within the list.

1. **Restoration** of forests and landscapes: Carrying out research on different aspects (from genetic resources to management modes and policy and governance options) and integrating findings and emerging lessons into main policy platforms and governance processes.

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

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

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

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

6. **NDCs:** Supporting countries in meeting their NDC objectives through improved use of forests and tree-based resources.

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

8. **Blue carbon and peatlands**: Providing knowledge on ecohydrology and ecosystem services, on carbon stocks dynamics, and on productivity to devise specific restoration options.

Fruits are seen for sale at a market in Minwoho, Cameroon. Photo by O. Girard/CIFOR

9 **Climate change adaptation**: Forest, tree and agroforestry resources are key to adaptation of forest-dependent communities and agricultural systems to climate change, and themselves have to adapt.

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

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

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

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

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

15 **Agroecology**, emphasizing integrated agroecological approaches that include trees in agroecosystems for improving smallholder livelihoods.

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

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

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

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

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

21 **Quality of FTA research for development** (R4D), aiming at devising better research, learning from experiments, and improving the overall performance of FTA as a research-for-development program.

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

Selected impact stories from Phase 1

Fallow forestry's inclusion in policy improves rural incomes in Peru

In Peruvian Amazon villages, many farmers manage the fast-growing species known as *bolaina*, which seeds itself into crop fields going to fallow. They produce significant amounts of lumber on their farms, or agricultural fallows, that are sent to Lima for prefabricated houses.

How to regulate the timber produced by these smallholders raised questions such as whether the areas were plantations and whether regulatory and institutional frameworks were supportive of on-farm timber production. FTA researchers argued that the fallow forestry system was a type of plantation and should be included in Peru's forest policy, so that smallholder farmers could increase income from sustainable forest systems and the country could increase legal timber production.

FTA's research eventually led to a change in the legal definition of agroforestry in Peru, allowing farmers to sell timber legally from their fallow plots, positively affecting 2 million people and 4.5 million hectares in the Peruvian Amazon.

Read more at forestsnews.cifor.org/fta/31139

Son tra gives Vietnamese farmers second bite of the apple

Son tra is an indigenous wild fruit tree species that grows naturally in forests around the Himalayas.

In 2013, researchers from the World Agroforestry Centre (ICRAF) teamed up with the National Institute of Medicinal Materials in Hanoi, Vietnam, and identified in *son tra* fruit essential bioactive substances of polyphenols (key human dietary antioxidants) and triterpene acids, which have anti-inflammatory and antitumor properties.

FTA helped domesticate the tree and expand the market for *son tra*, developing and commercializing novel products to overcome difficulties in consuming it fresh, allowing prices to be maintained, while supply increases because more farmers are growing the fruit. For farmers growing *son tra* alongside other crops, this has led to increased farm livelihoods and resilience to crop price shocks.

Read more at blog.worldagroforestry.org/6625

Guidance for regulating timber markets in Cameroon

For decades, Cameroon's forest policy focused on large-scale forest concessions mainly oriented toward Western markets.

Neither the volume of timber sales in the local market nor national consumption of sawn wood was recorded in official statistics. The value chain is characterized by informal practices, from felling trees to selling sawn wood. The problem is that laws do not exist to regulate these informal practices. Calling these forest users 'illegal' would infer that they are willing to break the law when, in fact, these laws do not exist.

FTA's intervention influenced the drafting and implementation of a new policy manual on the national timber market. The project reviewed existing scientific literature and technical documents, putting the regulation of the local market at the top of the agenda, resulting in a large debate among stakeholders. As a member of the official task force on the domestic timber market, the Center for International Forestry Research (CIFOR) provided insights on integrating the national timber market into the ongoing review of the forest law. It is a welcome first step to bring tens of thousands of smallholders from the shadows into the light.

Read more at forestsnews.cifor.org/fta/47684

△ A grower assesses *bolaina* in an agroforestry system in Peru. Photo by J. Carlos Huayllapuma/ CIFOR

Impacts and global goals

FTA organizes research spanning the whole spectrum of the theory of change, along impact pathways, from upstream research devised in an inclusive way with stakeholders and beneficiaries, to the enabling environment (institutions, policies, governance), and scaling-up with partners. FTA research focuses on the needs of key users and beneficiaries. It develops methods to ensure that the conduct and outcomes of research are gender sensitive and that capacity exists to use outputs.

The research design embeds MELIA approaches. Continuous learning and self-reflection are promoted as part of the research. FTA develops research methods with strong partnership approaches in order to improve effectiveness in achieving outcomes and impacts.

FTA and the SDGs

Through several pathways, FTA's research contributes to 14 of the SDGs.

- SDG 1 through increased livelihood opportunities
- SDG 2 through increased access to diverse nutrient-rich foods
- SDG 3 through improved environments and better nutrition
- SDG 4 via increased capacity for innovation in partner development organizations and in poor and vulnerable communities
- SDG 5 via gender-equitable control of productive assets and resources
- SDG 6 through the role of forests and trees in the water cycle
- SDG 7 through modern bioenergy and biofuels
- SDG 8 through the development of green jobs and more inclusive value chains
- SDG 10 through safeguarding resources and providing opportunities to the most vulnerable populations
- SDG 12 through sustainable and fair timber and non-timber forest products, as well as encouraging the use of renewable materials
- SDG 13 through contributions to adaptation at landscape scale, and mitigation
- SDG 15 through preservation and restoration of ecosystems and biodiversity
- SDG 16 by contributing to strong institutions and better, more inclusive, natural resources governance
- SDG 17 by building strong research and development partnerships

△ Homes are seen among dense trees in West Kalimantan, Indonesia. Photo by N. Sujana/CIFOR

Cover: Farmers tend to a pepper garden in Southeast Sulawesi, Indonesia. Photo by Y. Ahmad/ICRAF

The CGIAR Research Program on Forests, Trees and Agroforestry (FTA) is the world's largest research for development program to enhance the role of forests, trees and agroforestry in sustainable development and food security and to address climate change. CIFOR leads FTA in partnership with Bioversity International, CATIE, CIRAD, ICRAF, INBAR and TBI.

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