



World  
Agroforestry

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REPORT  
**2019**





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**Cover photo:** Agricultural landscapes, Kenya/Kelvin Trautman

Written by Jonathan P. Cornelius

**CarbonNeutral<sup>®</sup> Organisation**  
World Agroforestry Centre (ICRAF)

This certificate verifies that:  
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Certificate number	Quantity
CarbonNeutral Organisation	21922019
Name of organisation (ISO Registered Carbon (IS-CCM))	Quantity of market-based instruments
World Agroforestry Centre (ICRAF)	9,335
Subject (ISO Registered Carbon (IS-CCM) - CarbonNeutral <sup>®</sup> Organisation)	

**Project information**  
Project number: 4.1.18.4700  
Sector: Forestry, Wood and Paper (F20) - CC02  
Entity Name: ICRAF - Nairobi (F20) - CC02  
Approved by: Nairobi (F20) - CC02  
Approved by: Nairobi (F20) - CC02

**Signature**  
Stephen J. Kilian  
CEO, Carbon Neutral Partners

**9,335 tonnes CO<sub>2</sub>e**

**CARBON NEUTRAL PARTNERS**

## **Our vision**

An equitable world where all people have viable livelihoods supported by healthy and productive landscapes.

## **Our mission**

To harness the multiple benefits trees provide for agriculture, livelihoods, resilience and the future of our planet, from farmers' fields through to continental scales.

## **Our partners**

World Agroforestry has always implemented much of its work in partnership with a range of public, private and international bodies. Our partnerships are based on a clear recognition of the value that is added through working jointly with partners and sharing strengths to achieve specific outcomes. We partner with universities, advanced research institutions, national agricultural research organizations, private sector organizations, and government and international organizations.

## MESSAGE FROM THE CHAIR OF THE BOARD OF TRUSTEES



The year 2019 started with a major milestone: World Agroforestry (ICRAF) and the Center for International Forestry Research (CIFOR) began to officially merge. An integrated leadership team and a common board of trustees were formed; I have the honour of chairing the latter. Throughout 2019, the centres began integrating their research divisions while continuing their respective projects and pursuing our commitments to our partners and donors. These cooperative efforts led to the launch of Resilient Landscapes, an innovative new venture to radically transform tree-based supply chains by serving as the nexus between science and businesses, finance, governments and civil society.

CIFOR-ICRAF is uniquely equipped to deliver transformative science, thanks to the diverse skills of more than 700 staff and long-established partnerships worldwide. Such partnerships—including more than 140 public and private entities—are critical to ICRAF's research. In 2019, both grant and bilateral grant income increased, and short-term solvency and long-term financial stability remained above CGIAR benchmarks.

ICRAF's work culminated in many achievements in 2019, highlighted in this report. These successes show the diverse ways in which ICRAF is responding to the complex problems facing people and the planet in the 21<sup>st</sup> century—through ground-breaking technological and conceptual innovation, committed partnerships, and outcomes and impacts that transform lives and build healthy and sustainable landscapes. And as CIFOR-ICRAF moves forward with a unified strategy, it will build on the legacy of both centres to generate evidence and innovative solutions to the most pressing challenges facing the world's landscapes and forests.

**M Claire O Connor**

*Chair of the Board of Trustees*

## MESSAGE FROM THE DIRECTOR-GENERAL



Reflecting on 2019 from the perspective of 2020 brings ICRAF's priorities and recent achievements into sharper focus. On 1 January 2019, we formalized our merger with CIFOR, bringing our more than 40 years of expertise on agroforestry to the union. CIFOR-ICRAF aims to scale up our evidence-based response to the global climate, malnutrition, biodiversity and desertification crises — crises which require urgent action, as the COVID-19 pandemic has indicated clearly.

ICRAF research in 2019 continued its focus on the four key challenges set out in our *Corporate strategy 2017–2026*: persistent rural poverty and vulnerability; degraded landscapes, loss of ecosystem function and biodiversity; unsustainable production practices, particularly of tree commodities; and climate change and other threats to food, energy and socio-political security. Key highlights include: the first reliable global estimates of soil erosion; higher incomes for Ugandan coffee growers; informing high-level UN recommendations that put agroecology at the centrestage in the international agricultural and development agenda; and transformative innovations and training under the Drylands Development Programme that helped 220,000 African farmers — 108,000 of them women — out of their reliance on subsistence farming and emergency aid. Throughout 2019, we also worked intensively with CIFOR to begin integrating the two centres' operations.

Looking ahead, it is clear that while COVID-19 has changed the world's perspective on everything from global health, to the economy, to existing inequalities, it has also reaffirmed our mission to use the world's best science to eradicate hunger, reduce poverty, provide affordable and clean energy, protect life on land, and combat climate change. These are integral parts of our joint CIFOR-ICRAF Strategy 2020–2030 and of our commitment to make landscapes more resilient for people and the planet.

**Anthony Simons**  
*Director-general*



Landscape in Lincang, China/ICRAF

# CONTENTS

ADDRESSING KEY CHALLENGES THROUGH KNOWLEDGE PRODUCTS AND KNOWLEDGE SERVICES .....	2
Poverty and vulnerability .....	3
Landscape degradation, loss of ecosystem function and biodiversity.....	6
Unsustainable commodity production.....	9
Climate change and other threats to food, energy and sociopolitical security .....	11
OUR PUBLICATIONS .....	13
OUR PARTNERS .....	17
OUR FINANCES .....	21
OUR INVESTORS.....	23
OUR GOVERNANCE: THE BOARD OF TRUSTEES.....	26
OUR STAFF.....	27
ABBREVIATIONS AND ACRONYMS.....	32



Farmer in Lincang, China/ICRAF



## ADDRESSING KEY CHALLENGES THROUGH KNOWLEDGE PRODUCTS AND KNOWLEDGE SERVICES

As we approach the third decade of the 21<sup>st</sup> century, the scourge of poverty still affects billions of people. At the same time, environmental degradation reinforces poverty and disrupts the natural systems on which all life depends.

People now recognize that trees and forests are part of the solution to these complex problems: they help combat climate change, biodiversity loss and land degradation, while enhancing rural livelihoods. The role of World Agroforestry is to unlock this potential, as expressed in our mission:

*To harness the multiple benefits that trees provide for agriculture, livelihoods, resilience and the future of our planet, from farmers' fields through to continental scales.*

World Agroforestry works by addressing four key challenges, as set out in our *Corporate Strategy (2017-2026)*:

- persistent rural poverty and vulnerability
- degraded landscapes, loss of ecosystem function and biodiversity
- unsustainable production practices, particularly of tree commodities
- climate change and other threats to food, energy and socio-political security.

In this report, we illustrate how we addressed these interconnected key challenges in 2019. In each case, we highlight key knowledge products, knowledge services, outcomes and impacts.

The development of actionable solutions for complex problems is not a simple matter: it requires grounded knowledge, the right expertise, careful problem analysis, cross-disciplinary work and partnerships of mutual trust. World Agroforestry's value offer is the delivery of such solutions through our balanced approach of generating knowledge and applying our institutional capital of accumulated knowledge.

The work described here provides multiple examples of what our solutions look like in practice, and of the impact they had on lives, landscapes and planet in 2019.





Landscape in Adi Gudom, Ethiopia (B. Cika/ICRAF)

## Poverty and vulnerability

As 2019 closed, almost 0.7 billion people were living in extreme poverty: around nine per cent of the world's population. They struggle to feed themselves and see little chance of improving their lives. Many billions of other rural dwellers, although less acutely deprived, are still vulnerable: they live with the knowledge that a climate emergency, harvest failure, social conflict or a health crisis could destroy their livelihoods, wipe out savings and reduce them to a life of destitution. It is the poor who are most affected by climate change and other shocks, and poverty limits their ability to 'bounce back'.

World Agroforestry's vision of an equitable world where all people have viable livelihoods supported by healthy and productive landscapes cannot be

achieved without eliminating rural poverty and vulnerability. Directly or indirectly, our entire agenda addresses these most fundamental and persistent development challenges—as we also reveal in later sections of this report.

In this section, we highlight examples of our work in 2019 that directly addressed poverty and vulnerability. We tested practices aimed at improving food security and crop protection, developed approaches to improve human nutrition, and worked on strategies to increase income, among other priorities. We also generated concepts, evidence, publications, tools and other knowledge products that will continue to inform our interventions and those of others over the coming years.

## Knowledge products, knowledge services

**Tools that accelerate impact:** The [ERA tool](#)<sup>1</sup> for selecting resilient agricultural practices was launched during the Fifth Global Science Conference on Climate-Smart Agriculture. Its user-friendly interface allows comparison of the performance of different practices in specific contexts or even prediction of results in places where they have never been tried.

“Tens of billions of dollars will be invested in the next couple of years alone to help make agriculture more resilient to climate change. We plan to use ERA to help us support efficient and effective design of those investments”.

**Rima Al-Azar, FAO**

**Go-to publications:** Major publications included two open-access books edited by ICRAF scientists. [The climate-smart agriculture papers](#), already with almost 300,000 downloads, brings together state-of-the-art research on how to accelerate development and adoption of climate-smart farming systems in eastern and southern Africa. [Multifunctional land uses in Africa](#) showcases case studies by young African scientists of farming systems that offer solutions to poverty, vulnerability and environmental degradation. Both publications are source-books for groundbreaking innovation.

**Transformative concepts:** Farming communities can use ICRAF’s [fruit tree portfolio](#) approach to select a group of food species—their portfolio—to ensure year-round availability of vital nutrients. Twelve such portfolios were developed with communities in Ethiopia, Kenya and Uganda. The new [Tree foods database](#) underpins the approach by facilitating access to nutritional information on 132 foods from 99 species, including 68 tree species<sup>2</sup>.

**Game-changing evidence:** ICRAF scientists participated in a [study](#)<sup>3</sup> which established that agroforestry usually results in ‘win-win’ solutions for livelihoods and the environment: alleviating poverty and growing wealth without eroding natural capital. In an analysis of 1106 observations from 126 studies in sub-Saharan Africa, they found that agroforestry practices almost doubled crop yield, improved soil fertility by 20 per cent, were five times better at controlling run-off, were nine times better at controlling soil erosion, and allowed three times more infiltration of water.

## Outcomes and impacts

**Food supplies safeguarded:** Agroecological practices for controlling the fall army worm, identified in a [meticulous ICRAF review](#)<sup>4</sup>, are now being incorporated into FAO’s guidelines for control of this devastating pest that destroys maize and other staple crops.

**Uptake of sustainable agroforestry practices:** [Seven profitable agroforestry options](#) for sustainable production on steep sloping land in Viet Nam,

<sup>1</sup> Funded by CCAFS, the EU, IFAD, FAO, USDA-FAS and CIFOR; see list of abbreviations and acronyms on p. 32.

<sup>2</sup> Funded by the EC and IFAD.

<sup>3</sup> Funded by the Alexander von Humboldt Foundation and the Swedish University of Agricultural Sciences.

<sup>4</sup> Funded by NORAD and FTA.

developed by ICRAF and collaborating farmers, are now being adopted by farmers in three provinces, where [six exemplary landscapes](#) are also acting as conduits for evidence-based policy formulation<sup>5</sup>.

**Hundreds of thousands helped to emerge from extreme poverty:** The ICRAF-led *Drylands Development Programme (DryDev)* culminated its activities in Burkina Faso, Ethiopia, Kenya, Mali and Niger, after helping 220,000 farmers—108,000 of whom were women—emerge from reliance on subsistence farming and emergency aid

with transformative innovations and training. Beneficiaries were able to secure increases in food production and water security. In addition, scaling stakeholders have already adopted DryDev's integrated, science-based, co-learning approach.

**Dairy productivity raised:** In Uganda, 1,300 smallholder farmers reached by ACIAR's *Developing Value-Chain Innovation Platforms for Food Security* project have incorporated calliandra and other fodder species into their farms, thus doubling their milk yields.



Cocoa farmers in South and Southwest Sulawesi, Indonesia (Yusuf Ahmad/ICRAF)

<sup>5</sup> Funded by ACIAR.

## Landscape degradation, loss of ecosystem function and biodiversity

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) reports that land degradation has already reduced the productivity of 23 per cent of world agricultural land, while human actions have severely altered 75 per cent of the terrestrial environment. The rate of species extinction is tens to hundreds of times higher than the long-term average rate. The effects of land degradation and biodiversity loss on ecosystem services—such as provision of food and water, pollination and climate regulation—are simultaneously the cause and symptom of several of the global challenges of the 21st century.

Smallholder farmers are directly affected by these alarming developments: they cope each day with declining soil fertility, pest and disease infestation and water scarcity. World Agroforestry's response addresses both degradation and its causes, because we know that the challenge is comprehensively addressed only if degraded areas are under restoration and drivers of degradation and biodiversity loss have been controlled.

Our work in 2019 illustrates the power of World Agroforestry's research-in-development approach and of the application of cutting-edge tools. Both of these unlock the potential of trees, most versatile of allies in the fight against landscape degradation and biodiversity loss.

### *Knowledge products, knowledge services*

**Tools to accelerate impact:** The [Trees on Farms project](#)<sup>6</sup>, funded by BMU-IKI, produced one of its flagship tools: a protocol for monitoring biodiversity in agricultural landscapes. Application of the [protocol](#) will allow countries to monitor their progress towards meeting international and domestic commitments to biodiversity conservation and sustainable agriculture.

**Game-changing evidence:** ICRAF scientists used cutting-edge methods to produce the [first reliable global estimates](#) of soil erosion, the extent and severity of which had never before been consistently quantified. They found that erosion affected almost half of agricultural land. The information generated provides important evidence for the prioritization of global restoration efforts<sup>7</sup>.

**Go-to publications:** ICRAF-Brazil published an [English version](#) of its flagship [manual on agroforestry for ecological restoration](#). It provides detailed guidance on diagnostics, design and management, complemented by 50 pages of distilled experience on specific agroforestry-based restoration practices<sup>8</sup>.

'A well-written book useful to farmers, foresters, land owners and policy makers,' according to Florencia Montagnini, director of Yale University's Tropical Agroforestry Program.

**Influential analyses:** ICRAF's Niels Thevs authored a [landmark UN report](#) on forest restoration in the Caucasus and Central Asia. The study identified the key drivers of forest degradation across the region, as a basis for restoration pledges by eight countries.

**Innovation that sparks innovation:** The nested communities-of-practice (NCOPs) implemented by the IFAD-financed [Taking Successes in Land Restoration to Scale](#) project provide a model of how to enhance impact. NCOPs help build relationships and co-learning with farmers by ensuring regular interaction between community facilitators and farmers, linking farmers to development partners who can scale interventions, and 'closing the learning loop' by facilitating timely sharing of data and results between farmers and researchers.

<sup>6</sup> Formal title: Harnessing the Potential of Trees-on-farms for Meeting National and Global Biodiversity Targets.

<sup>7</sup> Funded by IFAD, the Bill and Melinda Gates Foundation and FTA.

<sup>8</sup> Funded by IUCN, under a grant from FCDO's Knowfor Programme.



ICRAF's Susan Chomba speaking at the *Beating Famine* conference/ICRAF

## Outcomes and impacts

**From talk to action:** In Bamako, Mali, ICRAF co-hosted the third of the *Beating Famine* conference series, attended by more than 500 delegates from 34 countries. The theme—*Sustainable Food Security through Land Regeneration in a Changing Climate*—underscored the close link between land restoration and the most basic human needs. Immediately after the meeting, government representatives from Mali came together with farmers, pastoralists, NGOs and research institutions in an ICRAF-organized workshop to develop a roadmap to guide *regreening* in Mali, using ICRAF's **SHARED** methodology. Sékou

Sala Sissoko, a representative of the Minister of Agriculture, expressed the importance of establishing supportive policy processes and developing a roadmap for scaling-up.

**Farmers reap rewards of the research-in-development approach:** Across Africa, tens of thousands of farmers, collaborating with ICRAF-led projects such as [Regreening Africa](#)<sup>9</sup>, [DryDev](#), [Trees for Food Security](#)<sup>10</sup> and [Taking Successes in Land Restoration to Scale](#)<sup>9</sup>, took part in planned comparisons of agronomic options for restoring their land and increasing productivity. For example, in Kenya, farmers restored 1000 ha with planting basins, increasing maize yields up to threefold, while legume yields were up fourfold; 75 per cent of collaborating farmers wanted to increase the number of basins on their farms.

**Better-informed planning processes:** The DriveNet tool, designed by the ICRAF-Peru team, allows local actors to systematically evaluate the causes of deforestation and land use change—and, from there, to build locally grounded low-emission development strategies<sup>11</sup>. Tested in 2019 with involvement of 850 stakeholders, DriveNet is now being used by a regional consortium of NGOs in the formulation of sub-national jurisdictions' strategies to reduce deforestation and land use change in seven regions, covering the entire Peruvian Amazon.

Similarly, in Viet Nam, the LUMENS tool, developed by the ICRAF team in Southeast Asia, was adopted in support of the development of the Green Growth Action Plan in Lam Dong province.

<sup>9</sup> Funded by the European Union.

<sup>10</sup> Funded by ACIAR.

<sup>11</sup> ICRAF led the development of DRIVENET as part of a consortium of NGOs and regional governments coordinated by Earth Innovation institute, with funding from NORAD through the Governors' Climate and Forests Task Force and UNDP.



Cocoa in South and Southwest Sulawesi, Indonesia (Yusuf Ahmad/ICRAF)

## Unsustainable commodity production

Tree crops such as cocoa, coconut, coffee, oil palm and rubber cover vast areas of tropical agricultural land, annually generating more than US\$100 billion in export and domestic sales. Several tree crops are grown predominantly by smallholders, often in agroforestry systems.

With best-practice production, these perennial crops have great potential to enhance the livelihoods of smallholder farmers—without causing environmental degradation. In practice, however, their production is often characterized by low yields, negative environmental impacts and inequitable value chains. Their future viability is also threatened by climate change.

World Agroforestry works to effect transformative change in tree crop production landscapes, focusing on viable options for ‘greening’ tree crop landscapes and for building inclusive value chains for tree commodities. Our work spans innovation from the plot level to landscape and the broader ecosystem, taking in everything from approaches to sustainable intensification, through strategies for value chain development, to landscape and forest governance.

### *Knowledge products, knowledge services*

**Insightful analyses:** A [study](#)<sup>12</sup> of the effect of Fairtrade on the livelihoods of cocoa farm workers in Côte d’Ivoire, co-authored by ICRAF’s Christophe Kouamé and published in *Nature Sustainability*, found that the scheme benefited cooperative workers, but not those employed directly by smallholders. The study suggests that equitable participation of all actors in tree commodity value chains will require more innovative approaches. Following the research, [Fairtrade has acknowledged](#) the need to do more to ensure that the benefits of Fairtrade reach everyone in smallholder cooperatives.

### **Advanced tools to combat crop diseases:**

World Agroforestry continues to share its insights and evidence on issues around sustainable cocoa production with the government of Côte d’Ivoire.

The cocoa swollen shoot virus disease, a serious threat to cocoa production in Côte d’Ivoire and other West African countries, is one such issue. In 2019, ICRAF’s Geoscience Lab applied its remote sensing expertise to detect and control the problem. In parallel, a 475 ha pilot was implemented to demonstrate approaches to the national cut-and-replant programme initiated by the country’s *Conseil du Café-Cacao*.

**Game-changing evidence:** China has more than 120,000 ha of unshaded monoculture coffee, highly susceptible to soil erosion. [Research](#)<sup>13</sup> carried out by CIRAD and ICRAF scientists in Yunnan Province provides the evidence to effect a decisive shift towards sustainable production. The work showed that adding selected companion trees to coffee plantations can rapidly—within four years—help reduce soil degradation, while maintaining productivity.

### **Piloting and monitoring of innovative practices:**

Since 2017, ICRAF-Brazil has collaborated with the cosmetics company, Natura, in research<sup>14</sup> that aims at developing models for environmentally friendly, agroforestry-based production of palm oil. In 2019, as one step in the development of inclusive and sustainable business models, the team established and monitored 15 smallholder pilot plots in the Brazilian Amazon.

### **Evidence on how to improve market access:**

The ACIAR-financed [Developing Value-Chain Innovation Platforms for Food Security](#) project found that innovation platforms were a highly effective approach for organizing smaller groups of farmers into larger coalitions with better market access. Fifteen innovation platforms were set up, covering a number of different sectors.

<sup>12</sup> Funded by IUCN, under a grant from FCDO’s Knowfor Programme.

<sup>13</sup> Funded by the Chinese Academy of Sciences, the Kunming Institute of Botany, and FTA.

<sup>14</sup> Funded by USAID.



## Outcomes and impacts

### Influencing private sector policies and positions:

Following a World Agroforestry keynote presentation at the GIZ-organized [Agroforestry Systems: Opportunities and Limitations for the Cocoa Sector](#) conference in Cologne in June 2019, Barry Callebaut, a major cocoa buyer, has adopted ICRAF's options-by-context approach in its position on agroforestry. The company's [position document](#) sets out its guidelines for agroforestry-based cocoa production in Côte d'Ivoire, Ghana, Indonesia and Brazil.

**Higher quality coffee, higher incomes:** Ugandan coffee growers participating in the innovation platforms set up by the [Developing Value-Chain Innovation Platforms for Food Security](#) project<sup>15</sup> adopted practices that enabled them to produce higher quality coffee. Those participating in an export scheme with Intersection Traders, Australia, earned 70 per cent more income.

**Changed perceptions of value chains:** A new conceptual framework for value chains, set out in [a 2018 article](#) co-authored by ICRAF's Dietmar Stoian, gained significant traction. The

new framework, based on a concept of value chains as complex adaptive systems, emphasizes the importance of the dynamics over time of value chains and their enabling environments. In 2019, the article was recognized by the Journal of Agribusiness in Developing and Emerging Economies as the Outstanding Paper of the preceding year, and is one of the most cited papers produced by the CGIAR [Policies, Institutions and Markets](#) programme.

**Viable community forest enterprises:** As a result of the activities of the FCDO-financed [Dryad](#)<sup>16</sup> project, 29 community forest groups in Cameroon are sustainably managing 90,000 ha of forest and managing 34 community forest enterprises, supported by a performance-based finance system and helped by the training in business and governance imparted by the project.

The initiative produced a policy and technical brief on development of community forest enterprises, based on its successful experiences in Cameroon. Both documents emphasize the effectiveness and importance of the social enterprise approach.



Maize produced by La Dynamique community forest enterprise from an agroforestry-based system/ICRAF

<sup>15</sup> Funded by ACIAR.

<sup>16</sup> Full project name: Financing Sustainable Community Forest Enterprises in Cameroon.

## Climate change and other threats to food, energy and sociopolitical security

Many of World Agroforestry's knowledge products and knowledge services enable local responses to global change—as indicated by our responses to the challenges of poverty and vulnerability, loss of ecosystem services and land degradation, and unsustainable tree commodity production.

The knowledge, experience and evidence gained from locally grounded work also underpin our effectiveness in policy and global spheres, where we work to address pressing issues such as climate change mitigation, human migration, planetary health, the global food system and development of national and regional agroforestry policies.

In 2019, World Agroforestry made significant contributions in all these areas.

### *Knowledge products, knowledge services*

Insightful analyses: ICRAF produced an [exemplary analysis of the migration-environment nexus in North-West Uganda](#)<sup>17</sup>, highlighting how refugee families depend on tree products and services, and providing guidelines on how these needs can be addressed sustainably. The lessons learnt can be applied in other regions acutely affected by the human migration crisis.

Agroforestry's impact on health: The concept of planetary health—the health of human civilization and the natural systems on which it depends—is gaining traction. An interdisciplinary ICRAF-led team used this conceptual framework in an [analysis](#) of the complex relationships between agroforestry and human health<sup>18</sup>. In general, the environmental change associated with well-designed agroforestry practices has a positive effect on human health.

Nevertheless, the team highlighted the need for more research into some key aspects, such as the relationship between tree cover and infectious diseases.

Visionary policy recommendations: The ICRAF-led, BMU/IKI-financed [Trees on Farms](#) project<sup>19</sup> formulated [policy recommendations](#) that would underpin a new vision of the role of agriculture in the post-2020 global biodiversity agenda. The vision is one of agriculture in sustainable landscapes as a positive factor for conserving biodiversity and securing ecosystem health, rather than simply as a cause of biodiversity loss. The recommendations reflect the broad expertise of ICRAF and other project partners, as well as the project's specific activities to realize the potential of trees on farms to contribute to biodiversity targets.

Critical needs identified: [ICRAF scientists examined](#) 148 National Communications to the UNFCCC; they found that most considered agroforestry explicitly, but only about 15 per cent of countries provide estimates of the numbers or area of trees on farms. A two-fold problem exists. First, all IPCC-defined land-use categories may include agroforestry—because agroforestry practices are so diverse. Second, some trees are not counted due to methodological shortfalls. The researchers recommended three measures to put things right: clearer guidelines, better ways of calculating C-stock in agroforestry, and institutional reforms that overcome overlapping responsibilities for agroforestry<sup>20</sup>.

*Nature Climate Change* recognized the significance of the work by featuring it in its 'Research Highlights' section.

<sup>17</sup> Funded by FCDO.

<sup>18</sup> Funded primarily by CCAFS.

<sup>19</sup> Formal title: Harnessing the Potential of Trees-on-farms for Meeting National and Global Biodiversity Targets.

<sup>20</sup> Funded by CCAFS.



An agroforestry landscape in Hat Lot, Mai Son, Son La, Vietnam (Tran Ha My/ICRAF)

## Outcomes and impacts

**Moving agroecology to centre stage:** In 2019, ICRAF played a pivotal role in placing agroecological approaches high on the international agricultural and development agenda. The recommendations of the UN Committee on World Food Security HLPE<sup>21</sup> [report](#) on agroecology, led by ICRAF's Fergus Sinclair, now provide the basis of an ongoing international [policy convergence process](#). Sinclair also led the development of a [background paper](#) for the Global Commission on Adaptation (GCA). As a result, agroecology was incorporated into the final report of the GCA, *Adapt now: a global call for leadership on climate resilience*. Commitments under the GCA's [food security and rural livelihoods action track](#) include improved access of [at least 60 million people](#) in smallholder farming families to agroecological practices.

**Supporting the design of national agroforestry policies:** In many countries, agriculture and forestry belong to different governance and policy spheres. ICRAF advocates for the development of national agroforestry policies in order to promote much-needed integration between these two sectors. In 2019, notable advances were made. ICRAF played

a crucial supporting role<sup>22</sup> in the formulation of Nepal's [National Agroforestry Policy](#), launched in July 2019. The policy seeks to transform practically all aspects of agroforestry and its governance in Nepal: incentives; research; enterprises and marketing; extension and training; state budgeting and planning. It explicitly considers the role of agroforestry in collective agriculture, commercial agriculture and restoration.

In parallel, ICRAF also [strengthened capacity for formulation of agroforestry policies](#) by training 26 mid-level policy makers from Bangladesh, Botswana, Cambodia, Malawi, Myanmar, Nepal, Kenya, Sri Lanka, Tanzania and Uganda.

**Participatory, evidence-based decision-making: SHARED**, World Agroforestry's innovative decision-hub methodology, proved its value in addressing global problems in local contexts: it helped stakeholders in Mali to formulate a national agroforestry roadmap, assisted in the development of a plan for a Climate-Resilient Exemplar Landscape in Andhra Pradesh, India. It brought together local government, NGO and private sector actors in Makueni County, Kenya, to create a decision dashboard with easy access to the data and maps needed to inform restoration.

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<sup>21</sup> High Level Panel of Experts.

<sup>22</sup> Funded by Climate Technology Centre and Network (CTCN).

## OUR PUBLICATIONS

### At a glance

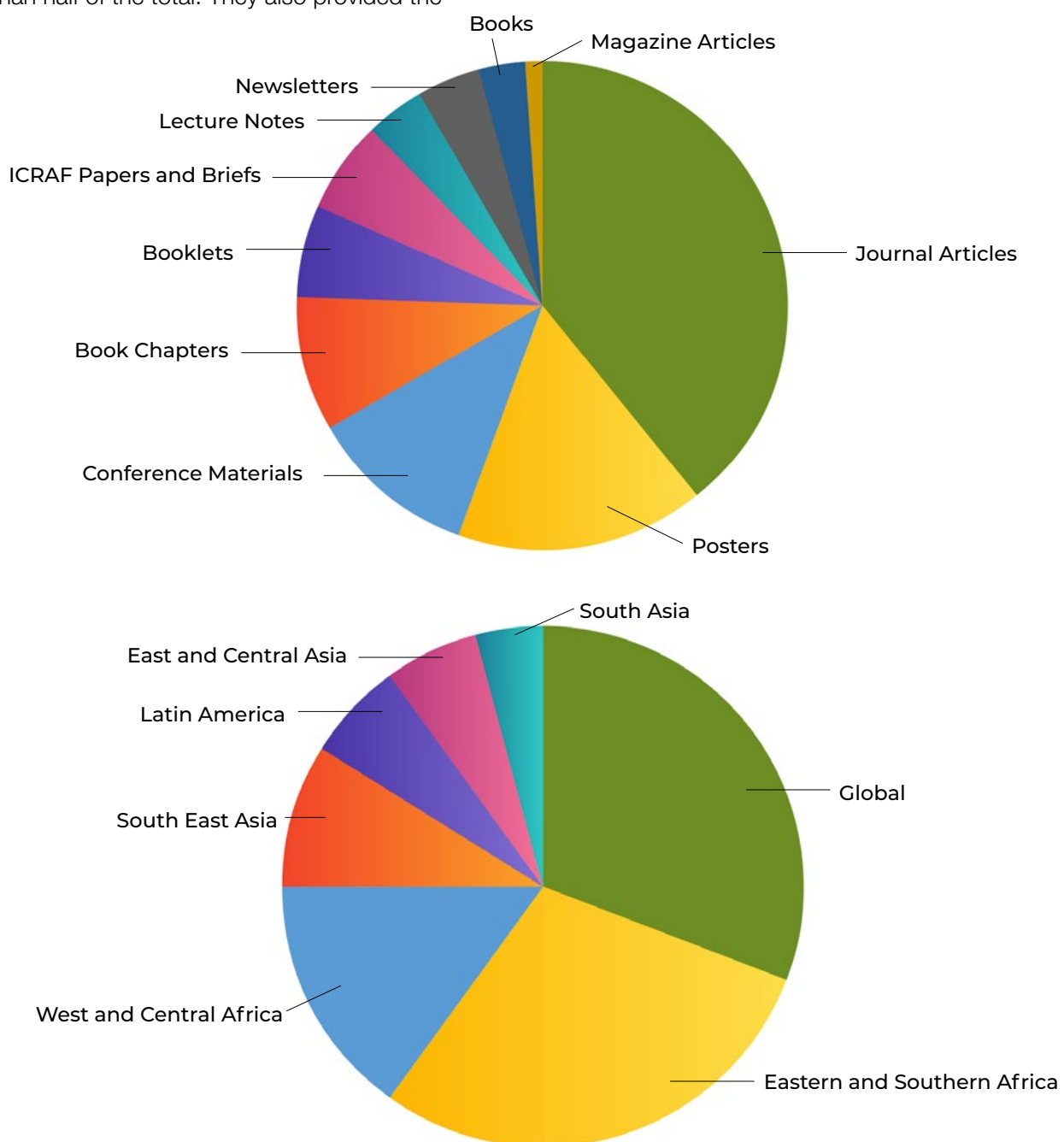
World Agroforestry produced 504 publications in 2019; an average of 3.2 publications per scientist<sup>23</sup>.

Our publications include articles, books, manuals, newsletters and others, all aimed at specific target audiences.

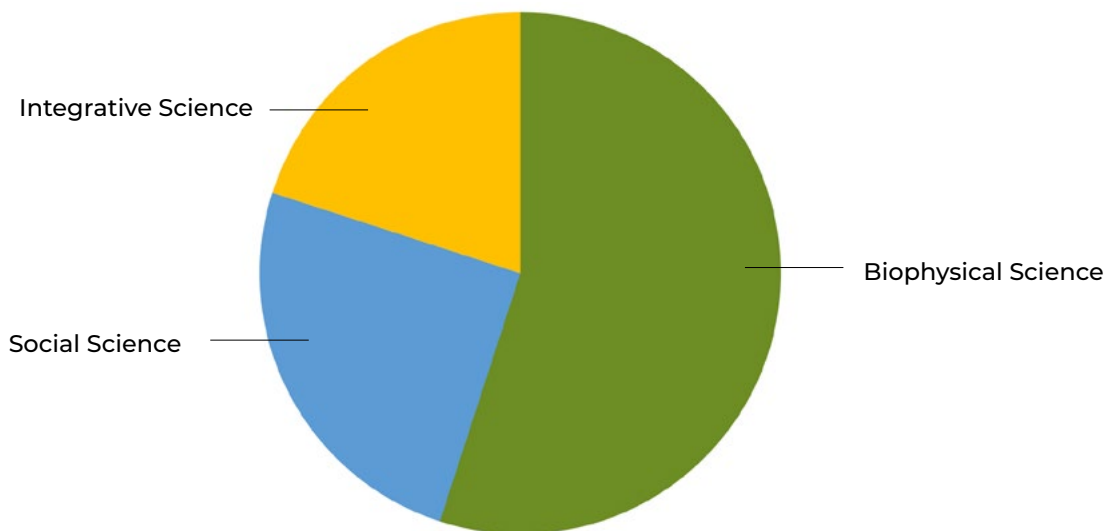
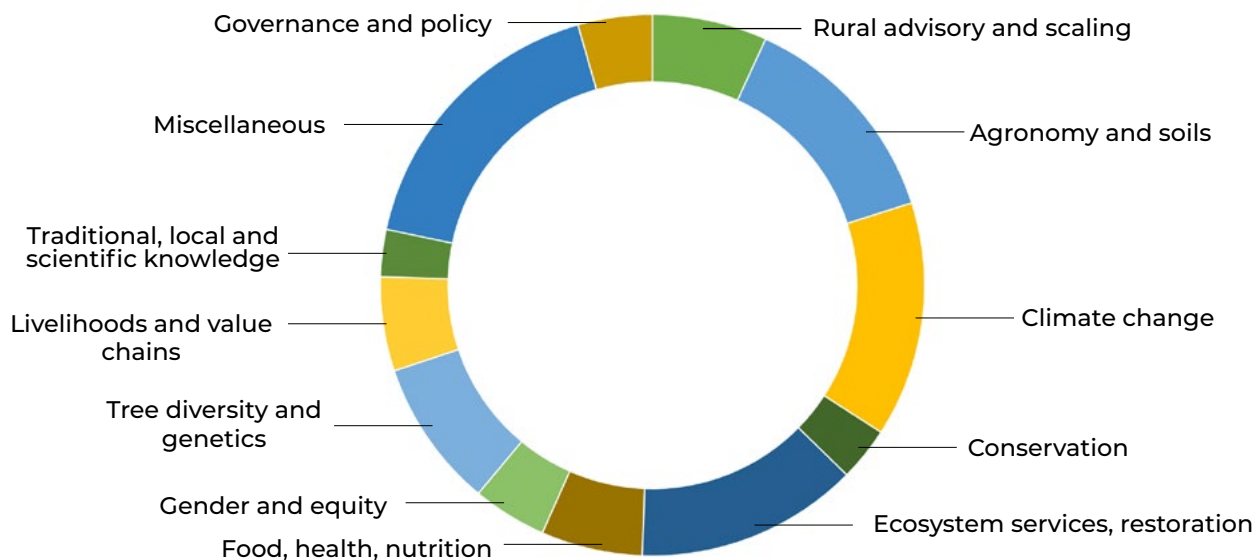
Three publication types – peer-reviewed articles, books and book chapters – accounted for more than half of the total. They also provided the

knowledge base for the other publication types. For this reason, the summary data below are based on these three publication groups.

Our 249 peer-reviewed 2019 publications addressed both global and regional problems. Almost one-third are global in application, while the rest addressed regional issues with global implications, with an emphasis on our two large African regions.



<sup>23</sup> Nationally, regionally or internationally recruited scientific staff of grade C4 or above.



Of the ICRAF publications produced by external academic publishers, 62 per cent were made available on an open-access basis. All publications in the other groups were open-access. During the year, almost 1.5 million downloads were made from [www.worldagroforestry.org](http://www.worldagroforestry.org)—a 40 per cent increase over 2018.

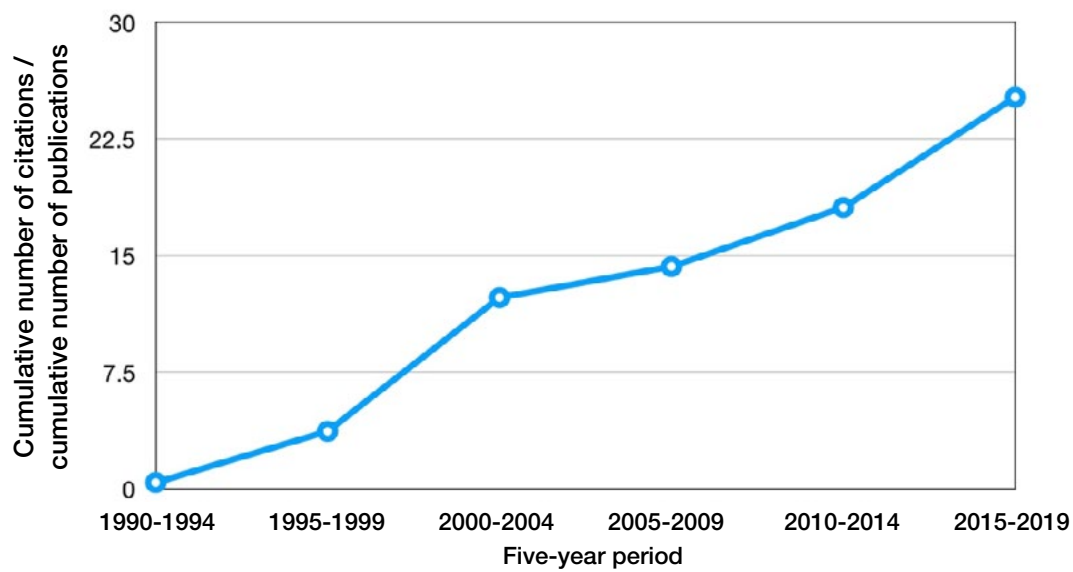
In disciplinary terms, ICRAF’s research remains weighted towards biophysical science. However, 45 per cent of our effort is in social science or in research that integrates social and biophysical science. The principal focus of 40 per cent of

our publications was in one of the broad themes of agronomy and soils, ecosystem services and restoration, and climate change.

### Ongoing impact

The impacts of ICRAF’s knowledge products are evident years after publication. The graph below shows how the impact per publication, as measured by the cumulative number of citations per cumulative number of publications, has increased steadily over the last three decades<sup>24</sup>.

<sup>24</sup> Data from Web of Science; pre-1990 publications excluded.



*Between 1990 and 2019, ICRAF scientists produced 2,267 Web-of-Science indexed publications, which were cited more than 59,000 times.*



Black pepper plantation in Southeast Sulawesi (Yusuf Ahmad/ICRAF)

## Looking back, looking forward

These publications, with our approaches, tools and methodologies, constitute a vital component of our rich institutional capital. This legacy was celebrated in 2019 with publication of the book [Sustainable development through trees on farms](#). The book, which includes 21 chapters from 80 authors, reflects on the completion of four decades of agroforestry research following ICRAF's founding in 1978.

Book editor Meine van Noordwijk comments:

“While not seeing the forest for the trees is a well-known risk, agriculture for too long has not been able to see its future for the lack of trees. The research documented in “Sustainable development through trees” shows how we can put that right”.

Another key 2019 publication also signals the way ahead. The options-by-context approach has become a cornerstone of World Agroforestry's research. In 2019, Fergus Sinclair, leader of ICRAF's Systems theme, guest-edited a [special issue of \*Experimental Agriculture\*](#) on the approach, entitled ‘The options-by-context approach: a paradigm shift in agronomy’.

Fergus Sinclair comments:

“The title of the special issue was not chosen lightly: options-by-context, although in itself an approach and framework for thinking and planning, also constitutes a true paradigm shift in the ‘how’ of agricultural innovation. It requires recognition and rejection of long-established modes of thinking that we believe are no longer fit-for-purpose”.

The articles in the special issue focus on how options-by-context can be implemented: from initial stakeholder engagement through to scaling up of adoption. Sinclair adds, ‘It's important to appreciate that the options-by-context approach transcends agronomy. It applies equally to innovation in value chain, institutional and policy spheres.’

Ravi Prabhu, ICRAF's deputy director-general for research, comments:

“We aim to contribute to a radical transformation in food production and land use systems. Innovation based on the options-by-context approach is fundamental to this”.

## OUR PARTNERS

World Agroforestry carries out its research and achieves impact with and through a range of different implementation partners: from farmers' associations to national governments, the private

sector and international organizations.

We are proud of this network of partners and thank them for the trust they placed in us in 2019:

Abt Associates, USA	Bakingili Community Forest, Cameroon	Chiang Mai University, Thailand
ACRE (Agriculture and Climate Risk Enterprise Ltd.) Africa	Beijing Municipal Bureau of Forestry and Parks, China	Chinese Academy of Agricultural Sciences
Action contre la Faim, France	Better Globe Forestry Limited, Kenya	CNRA, Côte d'Ivoire
Adventist Development and Relief Agency, Kenya	Bioversity International	COBABA, Cameroon
African Forum for Agricultural Advisory Services	Borlaug Institute for South Asia, India	CODEL, Cameroon
African Network for Agriculture, Agroforestry and Natural Resources Education	Bukalasa Agricultural College, Uganda	CODEM, Cameroon
Aga Khan Foundation	CARE International	Commonwealth Scientific and Industrial Research Organization, Australia
Agropolis Fondation, France	CARE Mali	Community Association for Development of Ngoume, Cameroon
Amani Nature Reserve, Tanzania	Catholic Relief Services	Cooperativa Agrícola Mista de Tomé-Açu, Brazil
ANADER, Côte d'Ivoire	Center for International Forestry Research	Copperbelt University, Zambia
Andhra Pradesh Government, India	Center for People and Forests, Thailand	Crops for the Future Research Centre
Asia Network for Sustainable Agriculture and Bioresources, Nepal	Center for Research and Teaching in Tropical Agronomy, Costa Rica	Danish Centre for Forest, Landscape and Planning, Forest & Landscape Denmark
Asian Pulp and Paper Group, Indonesia	Centre D'Appui aux Femmes et aux Ruraux, Cameroon	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, Germany
Association Comité Villageois de Developpement de Mekom, Cameroon	Centre de Coopération Internationale en Recherche Agronomique pour le Développement, France	Dien Bien Extension Center, Viet Nam
Association Comité Villageoise de Developpement du Village Ngat et Edou, Cameroon	Centre International de Recherche-Développement sur L'Elevage en Zone Subhumide	L'Ecole Nationale Supérieure de Statistique et d'Economie Appliquée, Cote d'Ivoire
Association Tous Egaux de Doumzok, Cameroon	Centre Suisse de Recherches Scientifiques en Côte d'Ivoire	Emory University, USA
Bagong Silang Binhi Farmers Association, The Philippines		Empresa Brasileira de Pesquisa Agropecuária, Brazil



Environmental Spirit Strategies Ltd, Zambia	Groupe d'Initiative Commune Forêt Communautaire Nguimbock Logbassanguen, Cameroon	Institut des Sciences Agronomiques du Burundi
Ethiopian Environment and Forest Research Institute	Groupe d'Initiative Commune Forêt Communautaire Solidarité Nyogn et Kelle, Cameroon	Institut National Polytechnique Félix Houphouët-Boigny, Cote d'Ivoire
Farm Concern International, Kenya	Groupe d'Initiative Commune La Dymanique, Cameroon	Institut Senegalais de Recherches Agricoles, Senegal
Feed the Children, USA	Groupe d'Initiative Commune MBACOF, Cameroon	Institute for Policy and Strategy for Agriculture and Rural Development, Viet Nam
Forestry and Environment Research, Development and Innovation Agency, Ministry of Environment and Forestry, Viet Nam	Groupe d'Initiative Commune PNNT, Cameroon	Instituto de Investigaciones de la Amazonia Peruana, Peru
Georg-August-Universität Göttingen, Germany	Groupe d'Initiative Commune Pour le Developpement de la Foresterie Communautaire a Nlomoto, Cameroon	Instituto Nacional de Innovación Agraria, Peru
Global Shea Alliance, Ghana	Groupe d'Initiative Commune PRODEVINDO, Cameroon - Groupe d'Initiative Commune Sodenkang, Cameroon	Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria, Spain
Groupe d'Initiative Commune Agro-Forestier D'Ossimb, Cameroon	Groupe d'Initiative Commune Union Coeurs des Forets D'assok 1, Cameroon	Instituto Salvia Soluções SocioAmbientais, Brazil
Groupe d'Initiative Commune Agroforestier de la Communaute Mgbasseng de Ngoume, Cameroon	HELVETAS Swiss Intercooperation	International Crops Research Institute for the Semi-Arid Tropics
Groupe d'Initiative Commune Agroforestier des Femmes Actives d'Endoum, Cameroon	Higher National School of Statistics and Applied Economy of Abidjan, Côte d'Ivoire	International Institute of Tropical Agriculture
Groupe d'Initiative Commune Chilly Revolution Verte du Cameroun, Cameroon	HM.Clause Inc, USA	International Center for Biosaline Agriculture
Groupe d'Initiative Commune CRVC, Cameroon	Hunan Yunjin Group Company Limited, China	International Network for Bamboo and Rattan
Groupe d'Initiative Commune des Communautés de Famille Banane, Bagbam, Banteba, Bakeh et Baka de Medjoh, Cameroon	ICCO Cooperation, The Netherlands	International Union for Conservation of Nature
Groupe d'Initiative Commune Econome de Mindourou, Cameroon	Imaging Solutions Limited, Kenya	International Water Management Institute
Groupe d'Initiative Commune Forêt Communautaire Boomabong/Pouth Ndjock, Cameroon	IMBARAGA Farmers Association, Rwanda	Internews, USA
	Indian School of Business	Irish Aid
	Institut de l'Environnement et de Recherches Agricoles, Burkina Faso	Islamic Organization for Food Security of the Organization of Islamic Cooperation (IOFS)
		Islamic Organization for Food Security of the Organization of Islamic Cooperation, Kazakhstan

Jomo Kenyatta University of Agriculture and Technology, Kenya	National Agricultural Extension Center, Viet Nam	Rwanda Agriculture Board
Kapchorwa District Landcare Chapter, Uganda	National Agricultural Research and Innovation Centre of Hungary	Sahel Eco, Mali
Kazakh National Agrarian University	National Centre for Genetic Resources and Biotechnology, Nigeria	Savanna Agricultural Research Institute, Ghana
KEFI Minerals Ethiopia Limited	National Forestry Resources Research Institute, Uganda	SGS Kenya Ltd
Kenya Agricultural and Livestock Research Organization	Netherlands Ministry for Foreign Trade and Development Cooperation	La Société de Développement des Forêts, Côte d'Ivoire
Kenya Forest Service	New Mexico State University, USA	Société d'Exploitation et de Développement Aéroportuaire, Aéronautique et Météorologique, Côte d'Ivoire
Kenya Forestry Research institute	Northern Mountainous Agriculture and Forestry Science Institute, Viet Nam	Soil and Fertilizers Research Institute, Viet Nam
Kisii University, Kenya	Oregon State University, USA	Sokoine University of Agriculture, Tanzania
KKO International, France	Oromia Agricultural Research Institute, Ethiopia	Son La Extension Center, Viet Nam
Kunming Institute of Botany, China	Our Lady of Lourdes Catholic Parish, Nakasongola, Uganda	South Eastern Kenya University
Kyrgyz National Agrarian University	Oxfam UK	Southern Cross University, Australia
Lake Basin Development Authority, Kenya	Peru, Ministry of Environment	Stichting Interkerkelijke Aktie voor Latijns Amerika Solidaridad, Peru
ICCO Cooperation, The Netherlands	Princeton in Africa (PiAf)	Technical University of Denmark
Leibniz Universität Hannover, Germany	Princeton University, USA	Tharaka-Nithi County Government, Kenya
Makerere University, Uganda	PT Riset Perkebunan Nusantara, Indonesia	The Nature Conservancy, USA
Malawian Department of Agricultural Research Services	PUR Projet, France	The Philippines, Department of Environment and Natural Resources
Mali Bicarburant S.A, Mali	Pwani University, Kenya	Threads of Life, Indonesia
Malindi Maximum Prison, Kenya	Regional Universities Forum for Capacity Building in Agriculture, Uganda	Tumbi Agricultural Research Institute, Tanzania
Mbale Coalition against Poverty, Uganda	Republican Scientific Production Centre for Decorative Gardening and Forestry, Uzbekistan	Unique Forestry and Land Use, Germany
Mekelle University, Ethiopia	Research into Results Ltd, UK	United Nations Environment Programme
Mount Elgon Tree Growing Enterprise, Uganda	Rongo University College, Kenya	United Nations Industrial Development Organization
Murdoch University, Australia		
National Academy of Sciences of Kyrgyzstan		

Universitas Brawijaya, Indonesia	University of Freiberg, Germany	Western Highlands Agriculture and Forestry Science Institute, Viet Nam
Universitas Mataram, Indonesia	University of Helsinki, Finland	World Cocoa Foundation
Université de Bouaké, Côte d'Ivoire	University of Leeds, UK	World Resources Institute
Université Félix Houphouët-Boigny (UFR Biosciences), Côte d'Ivoire	University of Leuven, Belgium	World Vegetable Centre
Université Nangui Abrogoua, Côte d'Ivoire	University of Natural Resources and Life Sciences, Austria	World Vision Australia
Université Peleforo Gon Coulibaly de Korhogo, Côte d'Ivoire	University of Rwanda	World Vision Ethiopia
University College Cork, National University of Ireland	University of Sydney, Australia	World Vision International
University of Bonn, Germany	University of the Philippines at Los Baños	World Vision Mali
University of British Columbia, Canada	University of Witwatersrand, Johannesburg, South Africa	World Vision Rwanda
University of Central Asia, Tajikistan	University of Zambia	World Vision Uganda
University of Copenhagen, Denmark	Vi Agroforestry, Sweden	World Wide Fund for Nature
	Viet Nam Academy of Forest Sciences	Yen Bai Department of Agriculture, Viet Nam
	Wageningen University, The Netherlands	Zambia Agriculture Research Institute

## OUR FINANCES

### Our income

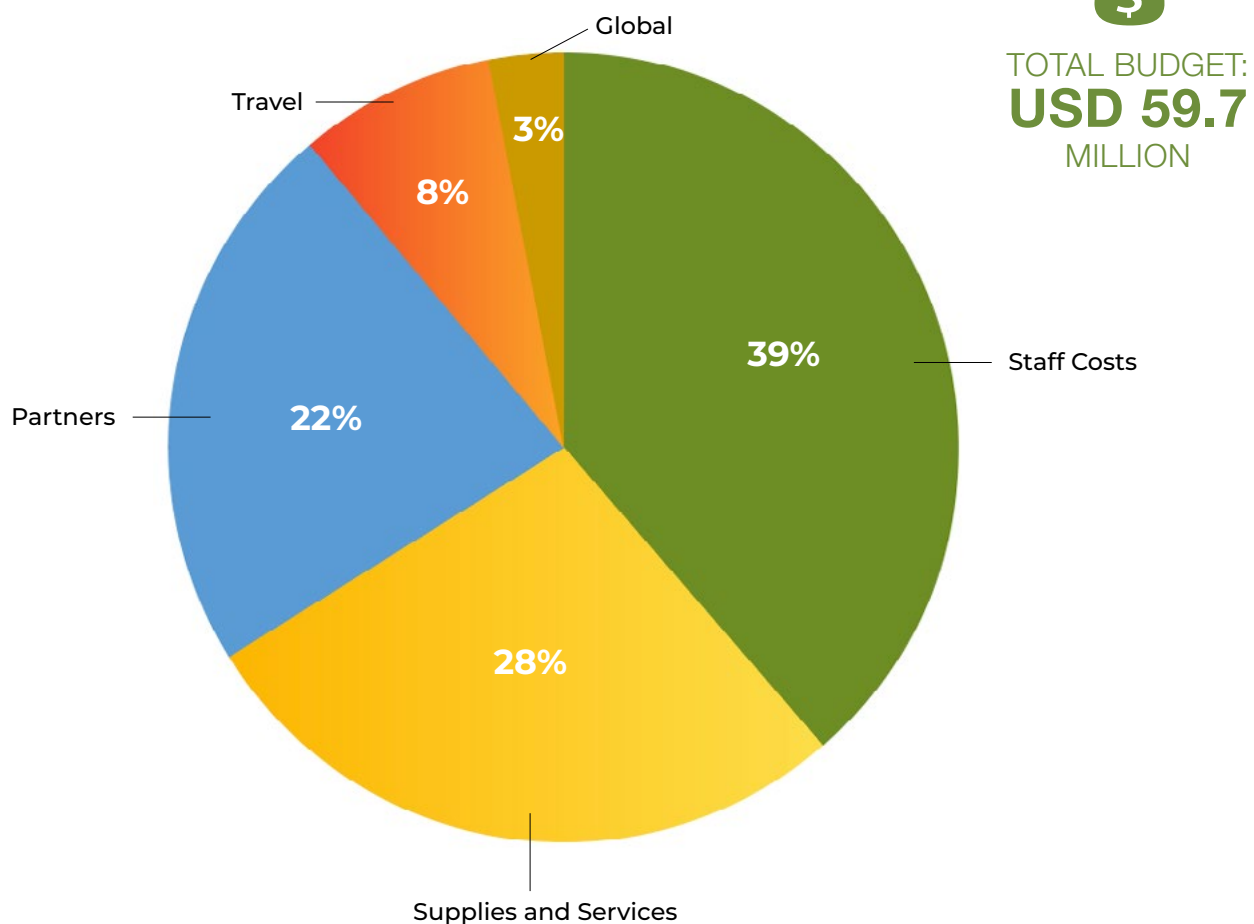
World Agroforestry's funds come from public and private investors, either directly or through the CGIAR Trust Fund. In 2019, as in most recent years, the great majority (about 85 per cent) of our income was tied to specific investor-funded projects (Window 3 and bilateral)<sup>25</sup>. Consistent with this, only a small proportion (3.9 per cent) of our 2019 income consisted of flexible or 'unrestricted' funding. Grant income was 3.2 per cent higher than in 2018. Bilateral grant income increased by 26.4 per cent.

### Our expenditure

World Agroforestry's budget (US\$ 59.7 million in 2019) is devoted almost entirely to managing and implementing research for development and ensuring that our administration, facilities and infrastructure can effectively support operations.

More than 20 per cent of total expenditure was allocated as sub-grants to implementation partners.

Our ratio of personnel to operational costs was 0.66:1. Our audited overhead rate was 15.7 per cent.



<sup>25</sup> World Agroforestry's funding comes from two main sources: funds contributed by investors to the CGIAR trust fund and 'bilateral' direct funding from private and public sources. CGIAR trust fund resources are channelled to World Agroforestry through three 'windows' (W). W1 consists of funding allocated to the entire CGIAR portfolio of approved system-wide investments, prioritized and allocated by funders collectively through the System Council. W2 consists of funding allocated by investors individually to components of the system-wide portfolio. W3 consists of funding allocated by investors individually to projects that they and their partners define, and that World Agroforestry and partners will implement. 'Bilateral' funds include those from multilateral institutions.

## Our solvency and stability

At 144 and 108 days respectively, World Agroforestry's short-term solvency<sup>26</sup> and long-term

financial stability<sup>27</sup> remained above the CGIAR benchmarks.

Our full financial statement can be accessed [here](#).



Land Restoration Project in Mwala, Kenya/Kelvin Trautman

<sup>26</sup> The number of days that working capital could fund expenditure.

<sup>27</sup> The number of days of that unrestricted net assets could fund expenditure.

## OUR INVESTORS

World Agroforestry's research and impact are made possible through the support of public and private sector investors who share and support our strategic objectives—in 2019, these were more than 140 entities.

We gratefully acknowledge and thank each one: above all, on behalf of the millions of beneficiaries of ICRAF's work.

Acacia Forest Industries, Malaysia	CGIAR System Organization	Forum for Agricultural Research in Africa
ADM Capital Foundation Ltd	Chad	German Academic Exchange Service
Agridea, Switzerland	CIRAD, France	German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
Agropolis Foundation, France	Climate and Land Use Alliance	GFA Consulting Group, Germany
Australian Centre for International Agricultural Research	Columbia Global Center Africa	Global Crop Diversity Trust
Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape	Commonwealth Scientific and Industrial Research Organization, Australia	Global Green Growth Institute
Azim Premji Philanthropic Initiatives Private Limited, India	Concern Worldwide	GlobalGiving, USA
Bangor University, United Kingdom	CORAF/WECARD, Senegal	GlobalGood, USA
Bill and Melinda Gates Foundation, USA	DAI Europe Ltd	Gothenburg University, Sweden
Bioversity International	David and Lucile Packard Foundation, USA	Government of Odisha, India
BirdLife Indonesia Association	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Germany	Governors of St. Francis Xavier University/Coady International Institute, Canada
BNP Paribas	Earth Innovation Institute, USA	Helvetas Swiss Intercooperation
Brazilian Agricultural Research Corporation (EMBRAPA)	European Space Agency	IDH Sustainable Trade Initiative, The Netherlands
CARE International	European Union	India
Cargill Ghana and Cargill West Africa Ltd	Flemish Office for Development Cooperation and Technical Assistance	Innovative Solutions for Decision Agriculture Ltd, Kenya
Carnegie Corporation of New York, USA	Fonds Danone pour l'Ecosystème	Institute for Global Environmental Strategies, Japan
Cémoi Group, France	Fonds Interprofessionnel pour la Recherche et le Conseil Agricoles	Integrated Carbon Sequestration Project, Sudan
Center for International Forestry Research	Forest Research Institute of Ghana	

International Centre for Environmental Management, Viet Nam	Lesotho, Ministry of Agriculture and Food Security	Rwanda Natural Resources Authority
International Centre for Tropical Agriculture	Livelihoods Venture, France	S&D Nedcoffee De Ruijterkade, The Netherlands
International Crop Research Institute for the Semi-arid Tropics	London School of Hygiene & Tropical Medicine, United Kingdom	Selkie Consulting Limited, Ireland
International Development Research Centre, Canada	Lund University, Sweden	SNV Netherlands Development Organization
International Food Policy Research Institute	Mars Inc, USA	Solidaridad Network Asia Limited South Africa
International Fund for Agricultural Development	McKnight Foundation, USA	Stitching Rainforest Alliance
International Institute for Applied Systems Analysis	Mercy Corps Europe	Stockholm Environment Institute, Sweden
International Institute of Tropical Agriculture	Mvule Trust, Uganda	Swaziland Water Agricultural Development Enterprise
International Livestock Research Institute	National Academy of Science, USA	Swedish University of Agricultural Sciences
International Maize and Wheat Improvement Center	National Institute of Agricultural Botany, UK	Swiss Development Corporation
International Potato Center	National Institute of Forest Science, Democratic Peoples' Republic of Korea	Technical Centre for Agricultural and Rural Co-operation
International Rice Research Institute	Natura Innovation and Technology Products Ltd., Brazil	The Gambia, Ministry of Environment, Climate Change and Natural Resources
International Union for Conservation of Nature	Natural Resources Canada	The Nature Conservancy, USA
International Water Management Institute	Norwegian Agency for Development Cooperation	The Netherlands
Interprofessional Fund for Agricultural Research and Council Ireland	Norwegian Institute of Bioeconomy Research	The Pacific Community
Japan	Norwegian Refugee Council	The Philippines Department of Environment and Natural Resources
Kansas State University, USA	ONF International, France	TMG Research gGmbH, Germany
Kenya	People's Republic of China	UN Habitat
Leibniz Centre for Agricultural Landscape Research e.V.	Peru	United Kingdom Department for International Development
	PT Tirta Investama, Indonesia	United Kingdom Research and Innovation
	PT. OKI Pulp & Paper Mills, Indonesia	United Nations Development Programme
	Research into Results Ltd, U.K.	
	Research Triangle Institute International (RTI)	

United Nations Environment Programme

United Nations Food and Agriculture Organization

United Nations Office for Project Services

United Nations University International Organization Center

United States Agency for International Development

United States Department of Agriculture

United States Forestry Service

University of California (Davis), USA

University of Edinburgh, United Kingdom

University of Ghana

University of New Hampshire, USA

University of Vermont, USA

US Civilian Research & Development Foundation

World Bank

World Cacao Foundation

World Conservation Monitoring Centre

World Food Prize Programme

World Resources Institute

World Vegetable Center

World Vision International

WYG International Ltd

Yale University, USA



Coffee sorting near Hawasa, Ethiopia/Niels Van Iperen



## OUR GOVERNANCE: THE BOARD OF TRUSTEES

World Agroforestry is governed by a joint CIFOR-ICRAF Board of Trustees which in 2019 comprised the following trustees:

Trustee	Country	Role
M Claire O Connor	Ireland	Board Chair; Chair, Executive Committee
José Joaquín Campos Arce	Costa Rica	Board Vice-chair (from March) Ex-officio Trustee (to February)
Lisa Sennerby Forsse	Sweden	Board Vice-chair (to February)
Alexander Müller	Germany	Chair, Research, Development and Innovation Committee
Bushra Naz Malik	Pakistan	Chair, Audit and Risk Management Committee
Elizabeth Adu	Ghana	Chair, People and Change Management Committee
Getachew Engida	UK	Chair, Finance and Operations Committee
Bisrat Aklilu	Ethiopia	Trustee (to April)
Phyllis Caldwell	USA	Trustee (to February)
Doris Capistrano	Philippines	Trustee
Maria Teresa Cervera Goy	Spain	Trustee
Milton Kanashiro	Brazil	Trustee (to February)
Kaoru Kitajima	Japan	Trustee
Wanjira Mathai	Kenya	Trustee
Kathleen Merrigan	USA	Trustee
Vijai Sharma	India	Trustee
Marja-Liisa Tapio-Biström	Finland	Trustee
Hamadi Boga	Kenya	Ex-officio Trustee, Government of Kenya representative (from February)
Richard Lesiyampe	Kenya	Ex-officio Trustee, Government of Kenya representative (to January)
Anthony Simons	United Kingdom	Ex-officio Trustee

## OUR STAFF

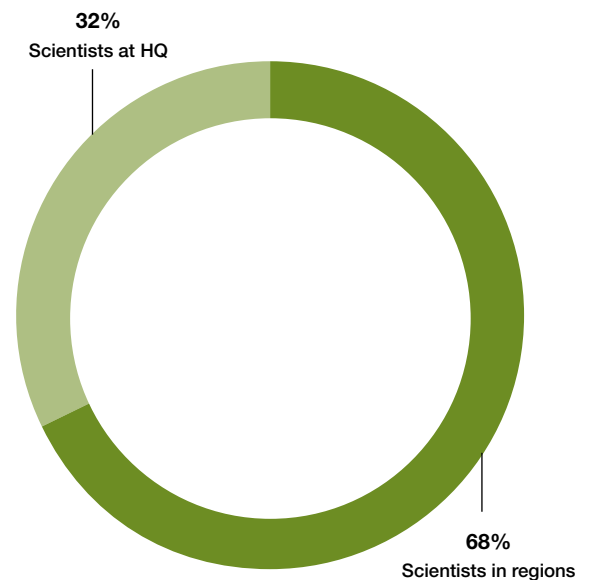
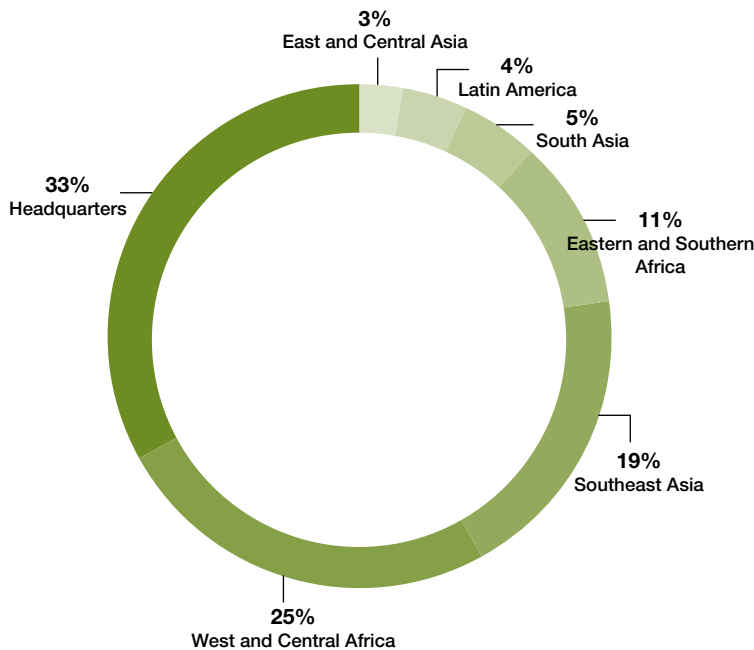
World Agroforestry’s staff numbers increased by 10 per cent to 550 during 2019.

Globally, our personnel can be categorized into two broad groups: science-implementing staff (scientists, research assistants), who make up 56 per cent; and science-supporting personnel (a diverse group, ranging from information technology and communication specialists to finance and administrative staff), who comprise 44 per cent of all staff.

The dedication and high quality of both teams are vital to achieving our mission.

### Geographical distribution

Due to the nature of its work, ICRAF is a highly decentralized organization: in 2019, over half of staff, and over two-thirds of scientists, were based outside our headquarters in Nairobi.



### Gender and diversity

At headquarters, the overall gender ratio is 1:1. Overall, our gender ratio remains male-biased (female:male ratio is 0.37:0.63). Globally, one-third of ICRAF scientists are female.

ICRAF’s staff are highly diverse, coming from 45 countries located in six continents. The age distribution of our workforce is well-balanced, with a preponderance of employees in the early to mid-career bands

## Staff list

### *Office of the director-general*

Anthony Simons (director-general), Elizabeth Mbele Kariuki, Christopher Knowles, Christine Larson-Luhila, Catherine Mwaniki

**Programme Development Unit:** Catharine Watson (unit head), Bryony Bidder, Dennis Garrity, Peter Gilruth, Edwin Kimani Chege, Stephanie Osano, Patrick Worms

**Audit:** José Miguel Méndez (unit head), Harrison Mbinj, Sheila Onyango

**Communications:** Jeanne Finestone (unit head), Martin Kavili, Maximiller Chepkonga, Stacey Kihui, David Kimutai, Sheila Murithi, Susan Onyango, Anne Wachira

### *Office of the deputy director-general for research*

Ravi Prabhu (deputy director-general for research), Winnie Achieng Adhoch, Susan Chomba, Joan Mativo, Jeremias Mowo, Stella Muasya, May Muthuri, Jacquelyne Ndagwa, Dietmar Stoian

**Capacity Development Unit:** Mehmood Hassan (unit head), Imelda Ingumba - IMPACT OFFICE: Karl Hughes (unit head), Caroline Gathoni, Hilda Kegode, Joan Kimaiyo, Kai Mausch, Judith Oduol, George Okwach, Ana Maria Paez Valencia, Phosiso Sola

**Knowledge Management:** Thomas Zschocke (unit head), Caroline Mbogo, Solomon Mwangi

**Research Methods Group:** Anja Gassner (unit head), Brian Chiputwa, Richard Coe, Philip Dobie, Moises Gachie, Parmutia Makui, Mita Sambo

**Geo-Science:** Tor-Gunnar Vågen (unit head), Muhammad N. Ahmad, Aida Bagues Tobella, Mieke Bourne, Matthew Decuyper, Jason Kinyua, Madelon Lohbeck, Faith Musili, Constance Neely, Anthony Nguyo, David Okoto, Benard Onkware, Jane Wanjara

**Trees Theme:** Lars Graudal (theme co-leader), Ramni Jamnadass (theme co-leader),

Geoffrey Abuor, Sammy Carsan, Joyce Chege, Agnes Gachuri, Prasad Hendre, Simon Kang'ethe, Robert Kariba, Ludy Keino, Roeland Kindt, Zakayo Kinyanjui, Stepha McMullin, Alice Muchugi, Samuel Muthemba, Nelly Mutio, Ken Mwangi, Jantor Ndalo, Eric Ng'ethe, John Innocent Nyagetuba, Valentine Gitonga, Agnes Were

**Systems Theme:** Fergus Sinclair (theme leader), Edith Anyango, Rodrigo Ciannella, Lisa Fuchs, Aster Gebrekirstos, Mary-Jude Kariuki, Esther Kiura, Anne Kuria, David Lelei, Christine Magaju, Ann Waithira Mbutia, Ibrahim Mumani, Lukelysia N. Mwangi, John Nyaga, Anne Omollo, Leigh Winowiecki

**Soils Theme:** Keith Shepherd (theme leader), Dickens Alubaka Ateku, Emily Barasa, Ermias Betemariam, Cyrus Bondo, Robin Chacha, Samuel Gaturu, Dominic Atandi Gisiora, Valentine Karari, Bella Kauma, Stanley Mulwa Kitiki, Christine Lamanna, Caroline Muchiri, Jane Wanjiru Mwangi, Beatrice Gathoni Mwangi, Hezekiah Nyandika, Isaac Ochieng, Gard Okello, Bruce Scott, Andrew M. Sila, Yvonne Tamba, Erick Towett, Anne Wavinya, Elvis Weullow

**Landscapes Theme:** Peter Minang (theme leader), Florence Bernard, Pius Borona, Lalisa Duguma, Joyce Kasyoki, Catherine Kimengu, Kennedy Muthee, Judith Nzyoka, Joseph Tanui, Priscilla Wainana

**Eastern and Southern Africa Region:** Catherine Muthuri (regional coordinator)

**Ethiopia:** Kiros Hadgu (country coordinator), Abrham Abiyu, Bekele Achame, Girma Eshete, Hailemariam Gebrehiwott, Asres Habtamu, Niguse Hagazi, Samuel Hailu, Yared Kebede, Soren Moestrup, Kedra Mohammed, Tiglu Seboka, Hadia Seid, Mekdes Sime, Workeye Solomon, Adgo Tassew, Haile Tilahun, Endalkachew Woldemeskel

**Kenya:** Jonathan Muriuki (country coordinator), Sylvia Afwande, Justine Busili, Symon Chebor, Miyuki Iiyama, Ruth Kinuthia, Grace Koech, Maimbo Malesu, Gideon Muindi, Mary Njenga, Rose Onyango, Irene Okeyo, Erick Otieno, Eunice Wamwangi

**Malawi:** Isaac Nyoka (country coordinator), Gift Adamusoni, Austin Bondo, Tapiwa Kasaila, Christopher Katema, Daniel Mtika, Konisaga Mwafongo, Joyce Njoloma

**Rwanda:** Athanase Mukuralinda (country coordinator), Jean Paul Munyaneza, Bahati Ntawuhiganayo Elisee

**Tanzania:** Anthony Kimaro (country coordinator), Violet Mtui, Jimmy Sianga, Anthony Tairo, Emmanuel Temu

**Uganda:** Clement Okia (country coordinator), Philip Kihumuro, Gang Roy

**Zambia:** Rhett Harrison (country coordinator), Lydia Amanzi, Chisonga Chipo Milimo, Patricia Masikati, Chilongo Ng'andu

**East and Central Asia Region:** Jianchu Xu (regional coordinator and China country coordinator)

**China:** Jiayu Bi, Dengpan Bu, Stefanie Goldberg, Ruijue Hu, Heng Gui, Yi Jiang, William Julian, Sehroon Khan, Lu Li, Siqi Li, Zhengli Li, Xue Liang, Qingyu Lu, Zhilin Mu, Sailesh Ranjithar, Austin Smith, Yufang Su, Xuejing Wang, Minzhi Yan, Leirong Yin, Deli Zhai, Haiya Zhang Xiaonan Zhu

**Kyrgyzstan:** Niels Thevs (country coordinator), Kumar Aliev

**Latin America Region:** Daniela Pogliani (regional manager, from August), Jonathan Cornelius (regional coordinator, to June)

**Brazil:** Andrew Miccolis (country coordinator), Jimi Amaral Silva, Rosemary Correa da Silva, Flávia Cunha Costa, Martin Meier, Helen Monique Nascimento Ramos, Henrique Rodrigues Marques, Maya Terra Figueiredo

**Costa Rica:** Laurène Feintrenie

**Peru:** María Baca Gómez, Jonathan Cornelius, Olivier Deheuvelds, Silvia España, Cecilia Luque Portillo, Sarah-Lan Mathez-Stiefel, Róger Pinedo Ramírez, Martin Reyes Acevedo, Valentina Robiglio, Marta Suber, Jean Carlos Valverde Quiros, Carmen Rosa Zubieta

**South Asia Region:** Javed Rizvi (regional director, country coordinator India)

**Bangladesh:** Abiah Rahman

**India:** Pithan Kumar Bablu, Narsingh Behera, Preeti Bhalla, Pithan Bhoi, Shiv Kumar Dhyani, Atul Dogra, Kamil Kumar, Santosh Kumar, Sunil Londhe, Kapileswar Mahapatra, Soumya Mahakhud, Manaj Mehar, Bibhu Prasad Mishra, Devashree Nayak, Iswar Padhan, Raghava Padhan, Jamal Pervez Noor, Rini Prabhakar, Raj Nial Prem, Neeti Sablok, Somanath Sahoo, Subhrajyoti Sahoo, Bardi Nayrayan Sahu, Raj Kumar Singh, Vinod Kumar Singh, Sukhveer Singh

**South-East Asia Region:** Delia Catacutan (regional coordinator)

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## ABBREVIATIONS AND ACRONYMS

<b>ACIAR</b>	Australian Centre for International Agricultural Research	<b>ICRAF</b>	World Agroforestry
<b>BMU</b>	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany	<b>IFAD</b>	International Fund for Agricultural Development
<b>CCAFS</b>	CGIAR Research Program Programme on Climate Change, Agriculture and Food Security	<b>IKI</b>	International Climate Initiative, Germany
<b>CIFOR</b>	Center for International Forestry Research	<b>IPBES</b>	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
<b>CIRAD</b>	Agricultural Research for Development	<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>CNRA</b>	National Agricultural Research Centre	<b>IUCN</b>	International Union for Conservation of Nature
<b>CTCN</b>	Climate Technology Centre And Network	<b>Knowfor</b>	International Forestry Knowledge programme, FCDO
<b>Dryad</b>	Financing Sustainable Community Forest Enterprises in Cameroon	<b>LUMENS</b>	Land-Use Planning For Multiple Environmental Services
<b>DryDev</b>	Drylands Development Programme	<b>NCOP</b>	Nested community of practice
<b>EC</b>	European Commission	<b>NGO</b>	Non-governmental organization
<b>ERA</b>	Evidence for Resilient Agriculture	<b>NORAD</b>	Norwegian Agency for Development Cooperation
<b>EU</b>	European Union	<b>SHARED</b>	Stakeholder Approach to Risk-informed and Evidence-based Decision-making
<b>FAO</b>	Food and Agriculture Organization of the United Nations	<b>UN</b>	United Nations
<b>FCDO</b>	Foreign, Commonwealth and Development Office, UK	<b>UNDP</b>	United Nations Development Programme
<b>FTA</b>	CGIAR Research Program Programme on Forests, Trees and Agroforestry	<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>GCA</b>	Global Commission on Adaptation	<b>USAID</b>	United States Agency for International Development
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit, Germany	<b>USDA-FAS</b>	United States Department of Agriculture – Foreign Agricultural Service
<b>HLPE</b>	High Level Panel of Experts of the United Nations Committee on World Food Security		



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