CIFOR-ICRAF: BUILDING RESILIENT LANDSCAPES
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Foreword

The message is ominous yet still strongly hopeful: climate change is accelerating, but one of the best ways to mitigate and adapt to it lies in trees, forests and nature-based solutions.

In 2017 the Center for International Forestry Research (CIFOR) and World Agroforestry (ICRAF) – the CGIAR’s premier research-for-development institutions focused on trees in forestry and agricultural systems – began discussions on a potential merger. Why? To more effectively and efficiently leverage the power of trees to improve livelihoods, build resilience and attain the Sustainable Development Goals (SDGs). Our aim was to support the emergence of resilient terrestrial landscapes across the planet.

In 2018, the Boards of CIFOR and ICRAF decided to functionally merge both institutions, including their governance, management and delivery structures to create a single corporate services backbone. We set out a three-year period to reach this goal, while recognizing that it would take in the region of USD 10 million and that we could set aside only USD 3 million from our own funds for the purpose. It was therefore very welcome news when the German Federal Ministry for Economic Cooperation and Development (BMZ) agreed to provide a grant to support this process, as part of a more general effort to support the reforming CGIAR.

As this report on that BMZ grant shows, the two organizations achieved what they set out to do – and more. Today, not only is CIFOR-ICRAF a single institution both functionally and organizationally, it has also spawned global initiatives, like Resilient Landscapes, which give us hope that we can avert the interconnected global crises fuelled by deforestation and biodiversity loss, climate change, dysfunctional food systems, unsustainable supply and value chains, and inequality. Our way forward is to use robust scientific evidence and partnerships.

We believe this striking success is testimony to the faith that BMZ placed in CIFOR-ICRAF, not only via this grant but also through the many significant and in-person contributions of its staff to the formulation of the merger and the strategy that underpins it. While the path ahead is no doubt marked by unforeseen hurdles and challenges, our experience as we utilized this much appreciated grant fuels a strong optimism and determination to reach our goals.

Tony Simons
Executive Director,
CIFOR-ICRAF
Director General, ICRAF

Robert Nasi
Managing Director,
CIFOR-ICRAF
Director General, CIFOR
Introduction

CIFOR and ICRAF are members of CGIAR, a global partnership for a food secure future comprised of 15 international research centres.

CIFOR and ICRAF have different histories. Discussions about setting up CIFOR began in 1991 when CGIAR saw a gap and requested support from the Australian Centre for International Agricultural Research (ACIAR) to create a forest centre. CIFOR was legally established as an international organization in 1993. Since then it has been headquartered in Bogor, Indonesia.

CIFOR's initial focus was not trees as commodities but conservation of forests, says its first Director General Jeffrey Sayer. “The mission was ‘wise use’ for the people who lived in tropical forest landscapes. We all understood that long-term sustainability had to go hand in hand with the alleviation of poverty.”

ICRAF formed in 1978. One account explains that “ICRAF was created in response to a visionary study led by forester John Bene of Canada’s International Development Research Centre (IDRC), which coined the term ‘agroforestry’ and called for global recognition of the key role trees play on farms.”

“ICRAF’s mandate was timely and futuristic,” says Bruce Scott, the Canadian development expert who ran IDRC in East Africa at the time. “It was charged with optimizing tropical land use and shifting the emphasis from forestry to broader land use concepts.” Nairobi became ICRAF’s headquarters in 1980. ICRAF joined CGIAR in 1991 and began conducting tropics-wide research.

Both centres produced an astounding array of important work, CIFOR increasingly on forest policy and rights, ICRAF increasingly on soil, nutrition and climate impacts.

By 2018, however, it was clear that deforestation was having extreme effects on ecosystems, while food systems were for their part driving much of the forest loss and degradation.

Also, any observer could see the complementarity. CIFOR was working inside forests, often with Indigenous groups, ICRAF on trees outside forests with farmers. In retrospect, it is surprising the decision took so long.

“Merging CIFOR and ICRAF brings together first class policy analysis, deep understanding of tropical silviculture and ecology, and solid experience getting facts and plants to farmers. In retrospect, it is surprising the decision took so long.”

Central to the success of the merger was a grant from BMZ. The overall aim was to help the “two complementary international organizations” to achieve “enhanced institutional viability” as well as to “deliver a large initiative called Resilient Landscapes”. At the same time, the grant sought for CIFOR-ICRAF to develop the “knowledge products and services” to help the world “to achieve greater land health, reduced deforestation, more integrated landscape investments, and better functioning of global tree commodity value chains”. Those were the thematic priorities.

For these priorities, the grant delivered catalytic support for researchers to work in new ways – termed Transformative Partnership Platforms (TPPs) and Engagement Landscapes (ELs) – and enabled the design of tech tools to help narrow the digital divide on trees, restoration and agroforestry, termed Flagship Products (FPs).

Lastly, the grant made it possible for CIFOR-ICRAF to host new female postdoctoral fellows. “Healthy landscapes depend heavily on the right sorts of human capabilities,” notes Ravi Prabhu, the CIFOR-ICRAF director under whose aegis the grant fell.

The appendix details the project’s achievements. But this document is far more than a project report. It is a statement of how CIFOR-ICRAF is positioning itself to respond to the greatest global crises of our time.
THE MERGER: One leading organization for trees and forests

“It has never been more obvious: science must underpin large-scale decisions on ecosystem and landscape management – in fact, global food security and nutrition, climate stability, and human and ecosystem health depend on it.

We are trusted and have been in these landscapes for decades.”

Robert Nasi, Managing Director, CIFOR-ICRAF and Director General, CIFOR

CIFOR and ICRAF began merger discussions
Decision to merge in Bonn
Official launch of 2-year merger process with Common Board of Trustees
New holistic approaches: TPPs / ELs / FPs proposed at 2nd CIFOR-ICRAF Alignment meeting
CGIAR System Council decides to establish ‘One CGIAR’ in Chengdu

© Axel Fassio/CIFOR-ICRAF
On 30 November 2018 in Bonn, CIFOR and ICRAF decided to merge. Reasons ranged from the need for ‘institutional viability’ in a crowded forest-tree space to the need to push even harder against harrowing emergencies such as global warming and biodiversity loss. Three years later, CIFOR-ICRAF is a fully merged institution with a single board and leadership team.

Among the many challenges, merging involved harmonizing the job descriptions of 700 staff: 200 at CIFOR, 500 at ICRAF. “We needed to bring services together. It’s people who make or break a merger,” says Kumar Tumuluru, Director of Corporate Services. It also required curating 65 years of digital assets such as manuals, videos and datasets that had been variously stored. “We are collating and retagging them,” says Michael Dougherty, Director of Communications. “The idea is to have all those knowledge assets available as public goods.”

Also CIFOR and ICRAF had to open and close offices as their teams moved in with each other. Today the merged entity has a geographic presence in three regions and 25 key countries and ongoing work in 60 plus. Asia Director Javed Rizvi led this process in 13 countries. “The first thing was the internal set up, the policies and pay grades. The real challenge was bringing teams together. Today we are developing joint projects.”

CIFOR-ICRAF now has a 10-year strategy and an integrated set of five research themes: trees and forest genetic resources, and biodiversity; climate change, energy and low-carbon development; soil and land health; sustainable value chains and investments; and governance, equity and well-being.

Speaking to that strategy, Peter Minang, Director for Africa, says “it gives us a mandate to leverage major tree commodities. Previously, timber would have been seen as a forest commodity, and cocoa and coffee as agricultural commodities. Now we address all three commodities in a joined-up way to catalyse green growth.”

Scientists have united around the need to deliver what the strategy calls ‘demand-driven solutions’ to five key global challenges: deforestation and biodiversity loss, climate change, dysfunctional food systems, unsustainable supply and value chains, and inequality. “The merger allows us to embrace landscape approaches and provide solutions to tackle forest transitions and livelihoods,” says Vincent Gitz, Director for Latin America and Director of Programme and Platforms.

“The merger allows us to approach important issues like governance, gender, Indigenous Peoples, and land and resource rights in a more integrated fashion from the global to the village and farm levels,” says Anne Larson, CIFOR-ICRAF Team Leader for governance, equity and well-being.

“We are all excited to offer more comprehensive solutions with our combined expertise. Society needs low-emission development through forest conservation and agroforestry,” says Pham Thu Thuy, Team Leader for climate change, energy and low-carbon development.

Support has also come from experts, often peppered with advice. “Merging can achieve economies of scale and improve the ability to deal with landscape change, but do not forget your origins,” says former Director General of CIFOR, Jeff Sayer, now Professor of Forest Conservation at the University of British Columbia. “There was always some overlap but the missions were distinct. In your research portfolio, you will always need different conceptual frameworks dealing with forest conservation and agricultural system improvement.”

The merger was achieved without staff contraction. “We offer value for money,” says Robert Nasi.
Resilient Landscapes

“Evidence-driven nature-based solutions come to life when the right players understand each other.”

Tony Simons, Executive Director, CIFOR-ICRAF and Director General, ICRAF
Resilient Landscapes was created as the private sector-facing arm of CIFOR-ICRAF. It acts as a carefully constructed bridge between the public and private sectors, translating science and data into practical green economy investment opportunities. Both CIFOR and ICRAF, but particularly ICRAF, had previous and ongoing partnerships with the private sector, particularly cocoa companies. The BMZ grant made it possible to do much more.

“Resilient Landscapes is the alchemist that can match the right knowledge with the right kind of investment, connecting the private sector with government to shift transformative action into high gear,” says Tony Simons, who is the Director of Resilient Landscapes in addition to his other roles.

“Nature needs funding and funding needs knowledge. As obvious as it is, those synergies do not happen spontaneously,” says Stéphane Perrier, Deputy Director of Resilient Landscapes. “It takes hybrid organizations to effectively connect the academic, business and public spheres.”

Resilient Landscapes leverages CIFOR-ICRAF’s existing, trusted and long-term partnerships with governments, donors, multilateral institutions, academia, non-governmental organizations (NGOs), local communities, youth and women’s groups. Its projects are endorsed by host countries and key stakeholders.

“CIFOR-ICRAF’s strong local networks and experience on the ground enable us to successfully navigate within specific cultural and political contexts to ensure successful outcomes,” says Nevena Bakalar, Resilient Landscapes Partnerships Coordinator.

Today, Resilient Landscapes is a full-fledged initiative with a dedicated pipeline of investment opportunities. Merging business skills with CIFOR-ICRAF’s scientific expertise, it is in advanced conversations to spur large-scale private investment in nature-based solutions (NbS) across landscapes and in agricultural commodity supply chains.

The International Union for Conservation of Nature (IUCN) defines NbS as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”.

“CIFOR-ICRAF is ideally positioned to originate, develop and take to market high-quality science-based terrestrial NbS projects by tapping into its collective global research portfolio and network of project developers. Our grounded presence, scientific prowess and technical expertise are our greatest assets, which Resilient Landscapes leverages to develop and financially de-risk NbS projects to meet the overwhelming demand from commercial investors,” explains Nitin Sukh, Resilient Landscapes Investment and Impact Director.

Going forward, Resilient Landscapes aims to capitalize on the growing demand for evidence-based investible NbS projects to match the supply of financial capital. Its objective is to reach a plateau of at least 10 new projects per year by integrating scientific assets in NbS investment deals.

Under the BMZ grant, Resilient Landscapes developed project opportunities to demonstrate the viability of landscape-level approaches at scale. These aim to set up public-private partnerships and create innovative blended finance vehicles to support the typically longer duration of a landscape project.

In early 2022 Resilient Landscapes became an advisor to one of the top 10 corporate food giants as project developer to help design projects (external and CIFOR-ICRAF).

https://resilient-landscapes.org/
**Socially and ecologically sensitive investments for development in forested landscapes:**

*Papua New Guinea*

Endorsed by the Governor of Oro Province and the Prime Minister of Papua New Guinea (PNG), this project was co-designed by the PNG government and local partners and communities. It aims to leverage carbon financing at premium offset prices and support value chains that maintain natural capital, including timber, tree-crop commodities and diversified agriculture. Its business case is an ideal proof of application for protection of habitat and ecosystems and remunerative community stewardship of forests.

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**Regenerative oil palm in Brazil: Generating multiple benefits plus profitability**

The project will scale up oil palm in diversified systems with other tree crops like cocoa, acai, timber and non-timber species such as pepper. It emerges from a CIFOR-ICRAF pilot that has gathered over 10 years of data and feedback on agroforestry across a considerable area of 60 hectares (ha). Resilient Landscapes is now working with CIFOR-ICRAF Brazil on everything from the project design to fundraising to grow the project, its stakeholders and its processes (See the Pará State Engagement Landscape).

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**Energy transition in the Balkans: Landscape-level approaches for sustainable biomass production**

Already partnering with the sustainable energy company E3 International, this investment opportunity proposes to restore the link between natural resources and local economic networks in the Western Balkans to meet woody biomass demand while regenerating vital landscape functions. During the 26th session of the Conference of the Parties (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC) in Glasgow, a special event showcased a pilot project in Serbia focused on energy crops, which will expand further after a successful trial period. This initiative also has TPP and EL components (see the Western Balkans Engagement Landscape).
Upgrading the Land Degradation Surveillance Framework (LDSF) to support ESG performance

LDSF 1.0 is an outstanding land degradation and remediation monitoring tool, able to capture landscape-level biophysical baselines of soil and ecosystems and to monitor degradation and the effectiveness of rehabilitation measures over time.

CIFOR-ICRAF and Resilient Landscapes seek an impact investor to support the development of an LDSF 2.0 that will meet the growing demand from companies who want to monitor their environmental, social and governance (ESG) performance in production systems and natural resource use.

How it works

Resilient Landscapes delivers science-based insights and tools by:

- Ensuring quality by integrating the scientific expertise of CIFOR-ICRAF in the design, implementation, and monitoring, reporting and verification (MRV) of NbS projects
- Leveraging the latest research to increase impact and generate performance data to deliver unprecedented insights from NbS projects and portfolios.
- Mobilizing private capital for high-quality projects/investments.
- Building capacity and science-empowered acumen among companies, financial investors, governments, and farmers to promote investments towards zero-carbon development, biodiversity conservation, and the SDGs across landscapes and agricultural commodity supply chains.

Strategic areas of development

Resilient Landscapes is evolving to address key gaps in nature-based solutions:

- Project incubation scale-up – From opportunity to investable design, to fill the opportunity gap with quality offers of impact-first deals backed by science. There is no such incubator to date.
- Impact management, science and technology-empowered – From simulation of results to science-impact measurement and troubleshooting. Existing solutions lack the encapsulated science.
- Financing facility – Making ecosystem dynamics, finance, governance, and impact science work in harmony to boost investment in nature-based solutions.

Leveraging more with less: Realizing carbon benefits with the India Billion Tree ‘Scaling up Trees Outside Forests’ project

CIFOR-ICRAF is looking for carbon investors for a five-year United States Agency for International Development (USAID)-funded project that holds significant potential to bring environmental, economic, and social benefits to seven Indian states. By so doing, it will support the government to fulfil multiple goals and international commitments, including increasing forest and tree cover from 25% to 33%, sequestering 2.5–3 billion tons of additional carbon dioxide equivalent, and restoring 26 million ha of degraded land. Resilient Landscapes is providing expertise on carbon markets and project engineering for a long-term impact guarantee.
New ways of working: TPPs, ELs and FPs

CIFOR-ICRAF’s strategy is to generate actionable evidence and solutions to transform how land is used and particularly how food is produced. Transformation requires broad partnerships and a ‘whole systems’ perspective that embraces the complexity, connectedness and multiple drivers and relationships that shape landscapes and how they impact human well-being and the environment.

But transformation to more resilient landscapes is no mean feat. A resilient landscape can be defined as one where people have the means and capacities to make natural resources, production systems, and the economy work for all and for nature over the long term. Given the scope of this task, CIFOR-ICRAF needed to work in new ways.

It opted for two new ambitious impact-oriented partnership programmes: Transformative Partnership Platforms, which are largely global and thematic, and Engagement Landscapes, which are geographically explicit but operate at a large scale. Complementing these are Flagship Products, strategic yet practical digital tools and technologies.

A Transformative Partnership Platform (TPP) seeks widespread adoption of solutions for an issue of global significance where CIFOR-ICRAF has profound comparative advantage. “By focusing on a few critically important issues, we intend to deliver results,” says Ravi Prabhu, CIFOR-ICRAF Director of Innovation, Investment and Impact. This is best illustrated by the TPP on Agroecology, where partners are coalescing around probably the greatest opportunity to transform agriculture. Sparked by initial investment from BMZ, achievements include entire paradigm shifts. Other TPPs are also moving global agendas.

An Engagement Landscape (EL) focuses on topics of global importance in discrete geographic areas where CIFOR-ICRAF and partners have unparalleled understanding and enjoy deep trust. ELs are large enough to capture the myriad dimensions of the complex development challenges that arise from political economy, governance and the needs of different social groups. The target of the BMZ grant was four large landscape projects by the end of 2021.

“The multiplier effect of this new way of working has been truly impressive, while at the same time strengthening our ability to deliver the kinds of results that BMZ and the global community expect from us as merged entities” says Tony Simons.

Finally, Flagship Products (FP) address practical delivery challenges for significant themes and important landscapes. Five Flagship Products received support from the BMZ grant: two support restoration, two tree breeding and diversity, and one agroforestry extension.
Transformative Partnership Platforms

Large photo: Farm and grazing land being lost to erosion in Kenya. Cathy Watson/CIFOR-ICRAF.
Agroecology

Agroecology is about transforming farming and food systems so that they operate equitably and in harmony with nature, instead of against it. It involves managing interactions among plants, animals, humans and the environment, and harnessing ecology within agriculture, rather than trying to vanquish it with technology.

The Agroecology TPP was convened by Chief Scientist Fergus Sinclair and the French Agricultural Research Centre for International Development (CIRAD)’s Philippe Vaast with an advisory board of the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the International Fund for Agricultural Development (IFAD), Biovision and Think Tank for Sustainability Töpfer Müller Gaßner (TMG), as well as a steering committee of donors (France, Switzerland, the European Union), research providers, farmers and civil society (Alliance for Food Sovereignty in Africa (AFSA), Asian Farmers’ Association, and a Latin American representative of the Indigenous Partnership).

“The Agroecology TPP is helping us to evidence the relationship between diversity and resilience, which is critical for reconciling human well-being and the health of the planet,” says Sinclair.

“The transition to agroecology is our core purpose, and we are happy to be a part of this,” says AFSA General Coordinator Million Belay, a steering committee member.

The TPP was launched in 2021 at the United Nations Environment Assembly and the Committee on World Food Security (CFS), fuelled by concern at the environmental cost and inequities of the global food system. It took off quickly, addressing the global policy agenda on agroecology developed by the CFS.

“It responded to a well-articulated demand,” says Sinclair “and has gone on to play a key role in giving birth to a coalition for transforming food systems through agroecology. The coalition emerged from the UN Food Systems Summit and already includes as signatories 33 countries, the European and African Unions, and over 60 organizations.”

One TPP initiative funded by France involves 12 case studies across Africa measuring the impact of agroecological practices on the income, labour and well being of farming households. Another is a trial on agroecological control of fall army worm (FAW). Research in Zambia had shown that parasitoid wasps, spiders, beetles, ants, birds and bats attack this devastating pest. The trial will promote plant health through better soil management and increasing diversity of habitats on farms so natural enemies can control FAW, with little need for pesticides.

“Agroecology is sometimes perceived as difficult to grasp,” says Vincent Gitz, who led the CGIAR Research Program on Forests, Trees and Agroforestry. “Agroforestry is a very concrete example of what agroecology can be in practice. Our interest in agroecology is not new. It has always been in our DNA.”

cifor-icra.org/research/topic/agroecology/
sciencedirect.com/science/article/pii/S0301479719306097
Nutri-scapes

The Nutri-scapes TPP is led by scientists Stepha McMullin and Amy Ickowitz and aims to bring greater visibility to the benefits that trees and forests provide for food and nutrition.

“Tree-based systems are vital for healthier diets and environmental outcomes as well as nutrition, livelihoods and resilience,” says McMullin.

“This is long overdue and urgently needed. Trees can play an even greater role with more investment and recognition in policy,” says Ickowitz.

McMullin is known for developing solutions to nutrition challenges by developing ‘portfolios’ of trees, shrubs and annual crops that deliver missing nutrients to poor people in rural and urban landscapes by ensuring that at least one species is fruiting or otherwise providing scarce nutrients throughout the year. Hers is an approach that builds on biodiversity for social and ecological resilience, especially in poverty-stricken landscapes.

“What we do is co-develop with communities a portfolio of socio-ecologically suitable and nutritionally important fruit tree species. Then, taking tree phenology and food composition data, we derive context-specific recommendations that involve 10–12 fruit tree species to address micronutrient gaps and meet consumption needs.”

Ickowitz is known for her work on wild foods. In a survey in rural Zambia, her team found that wild fruit contributed about 80% of total fruit intake, enough on average to meet 25% of international recommendations.

“Zambians are very far from meeting those recommendations, and if forests continue to be converted to other land uses, already-poor diets will become significantly worse,” she warns.

*Lancet Planetary Health* is publishing a viewpoint on ‘transforming food systems with trees and forests’.

At the 2021 United Nations Food Systems Summit, the TPP team gave presentations titled ‘Tomorrow’s food systems need trees’ and ‘Boosting nature-positive food production for people and planet’. Their pipeline abounds with concepts such as ‘nutrition-motivated consumption of fruits’.

Nutri-scapes partners with the University of Natural Resources and Life Sciences, Vienna (BOKU); TMG; University of British Columbia; and Pennsylvania State University (Penn State) – and welcomes others.

“Nutri-scapes is the most practical and readily understood way of delivering multiple benefits from managing and enhancing biological diversity,” says CIFOR-ICRAF Director Ravi Prabhu. “Trees can provide multiple benefits simultaneously.”

cifor-icraf.org/nutri-scapes/
doi.org/10.1016/j.gfs.2020.100465

Nutri-scapes adds affordable tools to the toolbox of nutritionists, who otherwise typically focus on biofortification and supplements. It also provides a much more socially relevant impetus to tree planting than simply looking for more carbon or timber.
Transforming the Quality of Tree Planting

As the world increasingly recognizes the importance of planting and regenerating trees, it often fails to ask: What trees? Where? For whom and of what quality? And from what seed?

Transforming the Quality of Tree Planting, led by geneticist Ramni Jamnadass and forester Lars Graudal, is answering those questions and filling a glaring gap: the lack of quality tree seed, particularly of the many species needed to restore landscapes.

This chasm is why most restoration projects focus on a few exotic species, creating brittle landscapes.

A 2022 article in The New York Times stated: “Done badly, reforestation can speed extinctions and make nature less resilient. A major hurdle is lack of supply at local seed banks, which tend to be dominated by popular commercial species. Some groups overcome this by paying people to collect seeds from nearby forests.”

But these forests are shrinking. At the core of this TPP is the question of how can we repopulate landscapes with more species, ensure that levels of diversity do not dip below acceptable resilience, establish and raise standards of seed production, and make a case for enterprise around tree seed multiplication and distribution.

“Our work is already showing practical benefits at scale,” says Jamnadass, pointing to the large Norwegian-funded project that supports the Ethiopian government to prioritize 150 out of the country’s 1,200 tree species, including the highly endangered frankincense.

One approach is creating ‘breeding seed orchards’ of genetically diverse individuals of one species collected for their superior attributes and from across their natural range.

“Theyir purpose is to safeguard the resource, put it into use, and get impact,” says Graudal. “Farmers experience a huge productivity boost with quality seed. Haphazard seed collection, multiplication and distribution creates genetic bottlenecks.” Graudal was one of a small group of mostly Danish foresters that set up tree seed centres across Africa in the 1990s, most of which have faltered due to lack of resources, staff turnover, and loss of donor interest. They were before their time.

However, “seed is starting to return to the agenda,” he says. “We know we have 60,000 tree species; one-third is threatened. We are losing adapted populations. Saving the resource has become imperative.”

Partnering with Kew’s Millennium Seed Bank and others, this TPP advocates for practical affordable solutions to ensure that the right trees of the right quality are planted in the right places. The ‘right trees’ include species adapted to future global warming.

worldagroforestry.org/sd/tree-diversity/transforming-quality-tree-planting

16

“Seeds have been missing,” says TPP partner forester Timm Tennigkeit of German company Unique Land Use. “Quality native tree seed supply is a key barrier for corporates to achieve net zero by restoring forest landscapes.”
Landscape Restoration

About 65% of Africa’s farm land is affected by erosion-induced losses of topsoil and nutrients. Soils that are severely damaged are difficult and costly to rehabilitate. “In some Kenyan drylands, less than 5% of land can absorb 50 mm of rain in an hour,” says Ingrid Öborn, Professor at the Swedish University of Agricultural Sciences and Senior Research Fellow at CIFOR-ICRAF. The result is destructive runoff. This is a story repeated elsewhere across the world, increasingly so.

In such scenarios, tree planting and the provision of nutrition or ecosystem services become very difficult. The Landscape Restoration TPP led by CIFOR-ICRAF scientists Leigh Winowiecki and Manuel Guariguata aims to address this problem using cutting-edge science and technology, with partners that are global leaders in their fields. Joining scientists, practitioners and policymakers, it has already signed Memoranda of Understanding (MOUs) with entities like the Society for Ecological Restoration (SER).

“We anticipate fruitful collaboration on crafting the standards of restoration to improve outcomes,” says Jim Hallett, Vice Chair of SER.

Restoration is improving the productive resilience of land, and returning its ‘functionality’, such as its ability to withstand disturbance, control erosion, shelter biodiversity and provide food, water and energy.

The stated aim of the TPP is to generate evidence-based solutions to encourage the scaling of equitable and sustainable landscape restoration. Further, the problem is not how to ‘do’ restoration but rather finding approaches that local people want to take up to bring back the productivity and resilience of their land.

“Most people think it involves just forests,” says Winowiecki. “But we restore rangeland and farmland too. So, whatever is done must be carefully tailored to the needs of the community inhabiting the landscape. If not, we risk extolling practices that are taken up by just a few.”

Giving an example, she says, “Erosion can be stopped in many ways – contour lines, agroforestry, zaï pits, terracing, and mulching to improve soil carbon. Our experience is that co-learning with youth, women and men is what leads to contextually appropriate approaches that scale.”

For Guariguata, the “TPP is important because we want to bring together players from the top down and the bottom up and integrate science into practice to guide national restoration plans.” CIFOR-ICRAF, skilled in addressing local challenges while responding to global issues, is well placed as the convener of the TPP.

Supporting the UN Decade on Ecosystem Restoration is a raison d’être of the TPP. “We need to ensure that expertise informs the Decade and reaches decision makers and practitioners,” says Guariguata.

cifor-icraf.org/landscape-restoration/
youtu.be/qvf0drWdTq4
worldagroforestry.org/output/healthy-soil-key-functioning-ecosystems
Coalition of Action 4 Soil Health

“Healthy Soil = Healthy People = Healthy Animals = Healthy Planet,” says Rattan Lal, the 2020 World Food Prize laureate. But while everyone, from researchers to business leaders to development agencies, agrees that soil health is critical, barriers still keep farmers and land managers from soil stewardship.

Inspired by the UN Food Systems Summit, a new global community emerged to improve soil health by overcoming constraints that farmers face when trying to adopt healthy soil practices. The Coalition of Action 4 Soil Health (CA4SH) was formed with support from Member States, United Nations Convention to Combat Desertification (UNCCD), farmers organizations, research bodies, development partners and the Private Sector Guiding Group.

“CA4SH will function as a global coordination centre for innovation and knowledge-sharing and action for soil health,” says CIFOR-ICRAF soil scientist Leigh Winowiecki. “We aim to bridge local action on the ground with national policies and international commitments. The Paris Agreement lacks a soil resolution. We are developing one.”

The Coalition has four targets:

- **Integrate soil health in policy** along value chains and in the development, environment, and climate change domains.
- **Expand research in development** into soil health practices, monitoring, and financial mechanisms.
- **Significantly increase** hectares of land under improved practices for soil health.
- **Increase investments in soil health** by 5-10 fold above current financing commitments.

Water in Rainfed Agriculture and Forests

Optimizing rainwater use in rainfed agriculture is led by Maimbo Malesu and Catherine Muthuri. Partnership with the Stockholm Water Week is set for five years in the Zambezi Watercourse Commission.

The TPP will leverage this to forge strategic partnerships elsewhere such as in the Niger Basin where the African Development Bank is active.

The impacts of restoration on hydrology are poorly understood. Research is underway with PhD students generating cross-continental topics. The “Water TPP” will work closely with Engagement Landscapes to track changes.

youtu.be/nCTju6hDHFQ
worldwaterweek.org/event/9795-building-climate-resilience-through-rainfed-agriculture-in-the-african-context

Coalition of Action 4 Soil Health

“Healthy Soil = Healthy People = Healthy Animals = Healthy Planet,” says Rattan Lal, the 2020 World Food Prize laureate. But while everyone, from researchers to business leaders to development agencies, agrees that soil health is critical, barriers still keep farmers and land managers from soil stewardship.

Inspired by the UN Food Systems Summit, a new global community emerged to improve soil health by overcoming constraints that farmers face when trying to adopt healthy soil practices. The Coalition of Action 4 Soil Health (CA4SH) was formed with support from Member States, United Nations Convention to Combat Desertification (UNCCD), farmers organizations, research bodies, development partners and the Private Sector Guiding Group.

“CA4SH will function as a global coordination centre for innovation and knowledge-sharing and action for soil health,” says CIFOR-ICRAF soil scientist Leigh Winowiecki. “We aim to bridge local action on the ground with national policies and international commitments. The Paris Agreement lacks a soil resolution. We are developing one.”

The Coalition has four targets:

- **Integrate soil health in policy** along value chains and in the development, environment, and climate change domains.
- **Expand research in development** into soil health practices, monitoring, and financial mechanisms.
- **Significantly increase** hectares of land under improved practices for soil health.
- **Increase investments in soil health** by 5-10 fold above current financing commitments.

worldagroforestry.org/news/coalition-action-4-soil-health-ca4sh
youtu.be/vFMSEHV7Ap4
The Yangambi Engagement Landscape contains projects across a heavily forested landscape on both sides of the Congo River in Tshopo Province, Democratic Republic of the Congo (DRC). It is led by Paolo Cerutti with support from Jean Newbery and a large team of researchers and implementers.

The 8,000 square kilometre Yangambi EL is home to around 220,000 rural people, many practicing swidden agriculture. The landscape has mixed uses and tenure arrangements. Within it are off-reserve forests, logging concessions, arable land and a 235,000 ha UNESCO biosphere reserve.

The city of Kisangani is home to circa 2 million people and is the primary destination for value chain products from the landscape, most of them unsustainably sourced and produced, including charcoal, timber and wild meat.

“This is the crux of the EL,” says Cerutti, a senior scientist and DRC unit head. “How do we lessen humans’ negative impacts on the forest and other ecosystems that sustain it, while ensuring that human livelihoods and health are not negatively impacted?”

The EL approach is centred on applied research designed to not only understand the problems and push-pull factors behind them, but also to identify, pilot and scale up solutions.

Notable results include:
• 2 million fast-growing and indigenous trees on 2,500 ha of agroforestry
• Creation of over 2,900 permanent and temporary jobs
• Over 100 charcoal producers trained on more efficient production techniques, halving timber required
• Over 60 hunters supported with alternative income-generating activities
• Over 74 tons of protein produced to reduce reliance on wild meat
• Over 3,000 students engaged in environmental education
• Over 240 masters and PhDs supported in partnership with the University of Kisangani

Two partners – l’Institut Nationale pour l’Etude et la Recherche Agronomique (INERA) and Africa Museum – have opened Africa’s first wood laboratory to study tree function, and the University of Ghent with INERA and others are running the only eddy-covariance flux tower in the Congo Basin to measure the exchange of greenhouse gas (GHG) emissions between forest and atmosphere.

But why is this an EL rather than a project? Cerutti replies “because it takes a long-term holistic and interconnected approach to identify problems that are contributing to rapid deforestation and continued poverty. Solutions cannot be found in silos and positive impacts can only be had by tackling multiple processes together.”

 Asked if this is a model for threatened forested areas elsewhere, Cerutti says “urban-rural complexes are defining tropical landscapes, so the learning from this long-term EL approach can be applied elsewhere. We share findings widely and are in constant contact with other implementers.”

yangambi.org
cifor.org/yangambi/en/news/
cifor-icraf.org/yangambi-engagement-landscape/

Partners include the EU, Kingdom of Belgium, USAID, Belgian Development Agency (ENABEL), BMZ, Resources and Synergies Development (R&SD), University of Ghent, Botanical Garden Meise and Regional Post-Graduate Training School on Integrated Management of Tropical Forests and Lands (ERAIFT).
Cocoa Agroforestry Engagement Landscape in Southern Cameroon

The dense forest–humid savanna landscape in Southern Cameroon is one of the richest and most diverse in the world. With cocoa agroforestry, tapping the economic possibility of such landscapes no longer needs to come at the cost of diversity.

The Cocoa Agroforestry Engagement Landscape in Southern Cameroon lies along a dense forest–humid savanna gradient and is led by Cameroon country representative Ann Degrande, climate change scientist Denis Sonwa and senior agroforester and soil scientist Jean-Michel Harmand.

It addresses the hugely pertinent question: how can Cameroon’s cocoa sector retain its unique agroforestry systems and avoid the devastating cocoa-driven deforestation in Ghana and Côte d’Ivoire?

“Historically, Cameroon’s cocoa has been more environmentally friendly,” says Sonwa, explaining that it is typically grown with tree cover rather than in full sun. “We have complex multifunctional cocoa systems, with a high diversity of tree species supplying timber and fruit and an optimal 40%–50% shade.”

This EL was announced at an historic event. In January 2021, the Government of Cameroon, development partners, and private sector and civil society actors signed a new roadmap towards deforestation-free cocoa. Ann Degrande was present.

She observed that the map was “important to accompany cocoa farmers on sustainable production trajectories” and that “with other countries in the Congo Basin expanding cocoa, we should use Cameroon’s unique experience to ensure the protection of our Central African forests.”

Then she made the big announcement: “CIFOR-ICRAF is now consolidating its efforts in the dense forest–humid savanna gradient in Southern Cameroon in the Cocoa Agroforestry Engagement Landscape.” It was well received.

Since then, the EL has surged ahead with new projects, including with the Sustainable Trade Initiative (IDH) and the World Wildlife Fund (WWF)’s Cameroon Green Cocoa Landscape Program, a collaboration with Cargill-Telcar to design cocoa agroforestry and train cocoa farmers, and support to the Republic of the Congo to revitalize cocoa.

Among outputs are a report, ‘Transforming sustainably the cocoa value chain along a dense forest–humid savanna gradient in the South of Cameroon,’ and briefs on species richness, biomass and carbon in cocoa agroforestry; on cocoa yields, non-cocoa economic benefits, and environmental services; and on historical lessons for deforestation-free cocoa.

“The EL has significantly raised awareness of the importance of tree cover diversity for the functioning and sustainability of cocoa plantations,” says Harmand, who studied cocoa systems in the forest-savanna transition zone.

CIFOR-ICRAF is part of Cocoa Talks – an EU initiative to ready Cameroon for the new regulations on deforestation-free cocoa. Multiple benefits can be realized from cocoa agroforestry in Cameroon.

idhsustainabletrade.com/initiative/roadmap-cameroon/
worldagroforestry.org/blog/2021/02/25/road-deforestation-free-cocoa-cameroon
In Northern Uganda some refugees are trying to stem damage to the environments that host them, improving their nutrition, welfare and agency in the process. They are beginning to demonstrate that a humanitarian crisis does not need to result in a vicious downward cycle of degradation – an important lesson for a world in which almost 90 million people have been forced to flee their homes.

Led by Mary Njenga and Abdon Awono, the Refugee-Hosting Engagement Landscapes in Central and Eastern Africa stretch from Ethiopia, Kenya, Uganda and Rwanda to DRC and Cameroon. They aim to carry out concentrated long-term transformative work with partners to address the crisis of refugees and displaced people. Africa currently hosts almost one-third of the global displaced population.

“We roll out gender and environmentally-sensitive livelihood and cooking choices that help address conflicts between refugees and hosts,” says bioenergy research scientist Njenga.

“In Cameroon we see that interventions for refugees and local communities are short term. Yet long-term strategies are needed to address their energy, food and medicinal needs,” says woodfuel value chain specialist Awono.

CIFOR-ICRAF has had 11 projects in refugee contexts since 2018. Over 15 researchers work on the EL, which has over 50 partners: UN agencies, funders, CGIAR, NGOs, national and local governments, universities, and national and global networks.

Refugee landscapes can be especially challenging, as some have populations with over 10 different linguistic groups.

Furthermore,” says Professor Ruth Mendum, a collaborator from Penn State, “refugee populations usually consist largely of children and women of childbearing age, which means the wisdom and capacity of older community members and men are in short supply, and adult women care for large numbers of children.

Highlights include one project in Uganda where CIFOR-ICRAF runs a community training hub and resource centre supplying over 20 tree species. Projects two, three and four focus on:

- recovering cooking energy and water, plant nutrients and biochar for home gardening and agroforestry with direct attention to gender norms and practices in Kenya, Uganda and Ethiopia.
- environmental protection, forest restoration, sustainable energy, alternative livelihoods, and local government capacity in gender-responsive programming in Uganda.
- guidelines for an integrated landscape approach in displacement settings in Garoua Boulai in Cameroon; Kakuma and Kalobeyei in Kenya; and Rhino Camp in Uganda.

worldagroforestry.org/publication/state-biomass-resources-refugee-hosting-landscapes-case-rhino-camp-and-imvepi-refugee
Landscape Partnership Asia: Restoring drylands and drought-prone areas in Asia (LPA) is led by Delia Catacutan, CIFOR-ICRAF principal scientist and acting country representative in the Philippines. It demonstrates ambition, partnerships and scale, bringing 14 countries together to address a rarely broached problem.

“Indonesia, Viet Nam and Myanmar are among the 38 Asian states with large expanses that receive scant rain and degrade easily,” she says. “Very little attention is given to these dry areas, which tend to be poor and have soil with little organic matter. It’s a serious gap in donor attention and in the footprint of development partners.”

The LPA aims to bring an initial 10 million ha on 1,000 engagement landscapes under integrated dryland and drought management by 2032, contributing to national and international restoration targets for dry forests and agricultural drylands.

The EL was co-founded in October 2020 by CIFOR-ICRAF, the Asian Forest Cooperation Organization (AFoCO), and the Global Evergreening Alliance. AFoCO hosts the LPA Secretariat in Seoul. Countries include Kazakhstan, Kyrgyzstan, Bhutan, Mongolia, Myanmar, Indonesia, Brunei, Philippines, Singapore, Timor Leste, Cambodia, Viet Nam, Lao PDR and Thailand. Technical partners include the Stockholm Environment Institute, Non-timber Forest Products-Exchange Programme, and International Institute of Rural Reconstruction.

LPA launched at the 15th XV World Forestry Congress in Seoul on 2 May 2022 and has a 10-year vision and plan. Its Asian Drylands Knowledge Hub runs webinars on successful dryland restoration.

LPA links to the UN Convention to Combat Desertification’s Global Initiative on Reducing Land Degradation and Enhancing Conservation of Terrestrial Habitats. It will help meet goals of the UN Framework Convention on Climate Change, Convention on Biological Diversity, the UN Decade on Ecosystem Restoration, FAO Asia-Pacific Forest Landscape Restoration, and the Bonn Challenge.

“The assumption is that these ecosystems are low in biodiversity and natural resources,” says Catacutan. “Another view is that dryland degradation is irreversible, unlike degradation in tropical moist and temperate ecosystems. Neither is true.”

“Asian drylands are the least scientifically researched and invested-in ecosystems in the world. The LPA will strengthen the weakest link in global restoration,” she adds.

landscapepartnershipasia.org/
Scaling Landscape Options through Provincial Engagement

Scaling Landscape Options through Provincial Engagement (SLOPE) is led by Nguyen Quang Tan, Viet Nam Country Coordinator, and sited in Hoa Binh and Yen Bai, provinces in northwestern Viet Nam. “We have a long history in this steep terrain,” says Tan.

Farmers were clearing forest to grow maize for livestock feed. Erosion was severe, and the ability to regulate water collapsing. The reservoir for a hydropower was silting. Maize yields and local food supply were increasingly erratic and poor.

Something had to be done. In 2011 Australian Centre for International Agricultural Research (ACIAR) began funding a project called Agroforestry for Smallholders Livelihoods (AFLI) under which ICRAF would explore forest rehabilitation and market-based agroforestry to revitalize the soil, forests, and smallholder farming. Ten years of investment brought grass strips and trees onto farms, checking erosion and improving ecosystem services and income.

The runaway success was the indigenous fruit tree *son tra* (*Docynia indica*), which requires little labour, fertilizer or pesticides, according to one farmer, who added that it had enabled him to buy a truck. Intercropping was done with other fruit trees, coffee, fodder crops and macadamia.

One legacy is a network that exhibits agroforestry products, learns from each other and is keen to transform agriculture and forestry in the midland and mountainous areas.

Another is wholehearted government buy-in. Tracking directly back to the project is the Agroforestry Technical Working Group (AF-TWG) established by the Ministry of Agriculture and Rural Development.

Building on all these, AF-TWG wants to develop a national agroforestry programme by 2025. Among new partners are the Viet Nam Gardening Association and the German NGO Bread for the World bringing in the Department of Agriculture and Rural Development of Hoa Binh – a province previously unreached.

Tan hopes for systemic change, while the EL also remains farmer focused: “We have published agroforestry manuals for Viet Nam.”

worldagroforestry.org/publication/diversity-agroforestry-practices-viet-nam
Indian Agroecology, Agroforestry and Natural Farming Landscapes

South Asia’s EL goes by the name Indian Agroecology, Agroforestry and Natural Farming Landscapes. Its goal is to reverse damage of the Green Revolution and chart a way forward.

The EL received USD 27,000 in catalytic funding from BMZ and in a spectacular run harvested USD 26,736,000 from four grants in 2021.

“A network of stakeholders, donors, policymakers and communities was set up to implement innovative ideas. This bore fruit,” explains Asia Director Javed Rizvi.

But it was not the BMZ grant alone. Since 2018 CIFOR-ICRAF has worked with the state of Andhra Pradesh to put natural farming on a firm scientific footing: 600,000 farmers have replaced synthetic chemical inputs with manure, cow urine, jaggery and concoctions of neem and other plants.

Early results suggest no yield penalties, with lower input costs and less farmer debt with improved ecosystem benefits such as less water use and improved biodiversity, for instance the return of beneficial insects.

The EL has engaged at the highest level to promote these and other simple but transformative practices like ‘trees on farms’. CIFOR-ICRAF is advising India’s apex planning commission NITI Aayog on restoring degraded areas with agroforestry.

It was also centre stage at the NITI Aayog-FAO-led National Dialogue on Indian Agriculture in January 2021, with presentations on ‘Biodiverse futures’ and ‘Pathways for Enhancing Farmers’ Income, Nutritional Security and Sustainable Food Systems’. The EL also featured at the National Workshop on Innovative Agriculture (Azadi Ka Amrit Mahotsav) 25 April, 2022 in Vigyan Bhawan, New Delhi.

None of this is fringe today. At the dialogue, FAO India explained: “Indian agriculture is typically identified with the ‘Green Revolution’ that enabled the nation to make great strides from a food-deficit nation to a food-surplus, export-oriented country. However, now India faces second-generation problems. There is a clear need for a transformative vision for the next decade.”

CIFOR-ICRAF is at the heart of this ‘re-mandating’ of Indian agriculture for a post-Green Revolution future.

The road ahead will be hard, and all will be tested under the USAID-funded project ‘Trees Outside Forests in India’, which pledges one billion trees for Assam, Andhra Pradesh, Haryana, Odisha, Rajasthan, Tamil Nadu and Uttar Pradesh.

CIFOR-ICRAF leads the project consortium, which consists of the Ashoka Trust For Research In Ecology and The Environment (ATREE); Gramin Vikas Vignan Samiti; the Indian Council of Agricultural Research (ICAR)-Central Agroforestry Research Institute; National Institute of Agricultural Economics and Policy Research; Network for Certification and Conservation of Forests; The Energy and Resources Institute (TERI); Forest College and Research Institute of Tamil Nadu Agricultural University; and Tropical Forest Research Institute.

link.springer.com/article/10.1007/s42489-020-00045-0
worldagroforestry.org/publication/road-less-travelled-migratory-farmers-odisha-innovative-agroforestry-practices
Pará State Engagement Landscape

Pará State has Brazil’s highest rate of deforestation due to forest converted for grazing and farming.\(^1\)

The Pará State Engagement Landscape, led by CIFOR-ICRAF Brazil country coordinator Andrew Miccolis, has assembled a novel partnership to begin to address this head-on. Leveraging a small investment from the BMZ grant, Miccolis was able to engage with a range of partners, including The Nature Conservancy (TNC), to realize a large project which will form the heart of the Engagement Landscape.

ICRAF lay the foundations for the EL in 2017 through work with farmers in Tomé Açu in Northeast Pará to test oil palm agroforestry. Funded by USAID and the CGIAR Research Program on Forests, Trees and Agroforestry (FTA), the project involved cosmetics giant Natura, which owns Body Shop and Avon, and Embrapa, Brazil’s agricultural research body.

The project demonstrated that diversified oil palm agroforestry systems can be as productive as monocultures, delivering more carbon and biodiversity while bolstering livelihoods through native Amazon fruit crops such as cocoa.

“The findings convey hopeful news about a better way to grow this much-maligned crop,” says Mongabay’s Erik Hoffner. The journalist for the environmental science new platform wrote, “By growing oil palms in an agroforestry system among other useful profitable crops, farmers have more crops to eat and sell, enjoy greater resilience to palm oil price variations, and can make a competitive profit without using toxic and expensive chemicals.”\(^6\)

Momentum grew further in 2019 when CIFOR-ICRAF teamed up with TNC Brazil on Pará’s low-carbon plan to tackle deforestation and adopt more climate- and nature-friendly farming.

The EL finally took shape in 2020 when CIFOR-ICRAF headquarters awarded its Brazil team funds from the BMZ grant. This led to further collaboration with TNC that resulted in a three-year project funded by Amazon.com. The EL is one of the first to secure a large grant.

Known as the ‘Agroforestry and Restoration Accelerator’ and largely funded through 30-year carbon credits, the project will work with 3,000 family farmers to establish 18,000 ha of agroforestry and ecological restoration in three regions of Pará.

CIFOR-ICRAF leads in northeast Pará, where it will engage 1,000 farmers on 6,000 ha. In a swop for carbon, farmers will receive germplasm, app-supported technical assistance, training, help on environmental compliance/regularization, and better market access for carbon and other agroforestry products.

CIFOR-ICRAF also leads the research on the transition to more agroecological farming, the carbon implications of different agroforestry and restoration practices, and financial feasibility. “We will ensure farmer groups participate in designing the technical solutions they ultimately adopt,” says Miccolis.

Partners are the Pará State Environment Secretariat and Forestry Agency; Olam, Mondelez and Bank of the Amazon; research institutes and universities; Tomé Açu Mixed Agricultural Cooperative (CAMTA); cocoa cooperative CAMPAX; and conservation NGOs the Amazon Environmental Research Institute (IPAM) and Instituto de Manejo e Certificação Florestal e Agrícola (IMAFLORA). A state and regional Advisory Committee addresses social safeguards and benefit-sharing.

worldagroforestry.org/publication/oil-palm-agroforestry-fostering-socially-inclusive-and-sustainable-production-brazil
slideshare.net/agroforestry/session-66-oil-palm-agroforestry-systems-brazilian-amazon
Europe, and indeed the world, urgently need sustainable alternatives to fossil fuels. In the Western Balkans, a promising effort is exploring the contributions of sustainable biomass energy to this energy and economic transition.

Christopher Martius and Dietmar Stoian lead the Engagement Landscape “Bioenergy for a just and green transition in the Western Balkans”. The region is highly reliant on coal, much of it low-energy lignite. Open-pit mining creates massive GHG emissions, air pollution, and land degradation. Yet a transition from coal and other fossil fuels to renewable energy sources (RES) is possible. “The Western Balkans has vast potential for renewable energy sources, especially from wood and reeds,” says Martius. “Countries are adopting RES laws that recognize that biomass is critical for energy security and green jobs, as part of a renewable energy mix,” says Stoian.

To this end, the EL, with company E3 International and local partners, established short rotation plantations of willow and Arundo reed, further trials with poplar and black locust will be established in an upcoming extension phase. The plantations will be surrounded by agroforestry borders that provide raw materials and help restore biodiversity. Moreover, permanent trees will be established on adjacent floodplains, and other fragile lands, and managed for forest products and restoration of ecosystem services.

Pilot plantations are developing well. In September 2021, the CEOs of the national power companies in Serbia and Bosnia and Herzegovina committed to the expansion of woody biomass for energy. Their statements aligned with Nationally Determined Contributions (NDCs), the European Green Deal and the Balkans’ Green Agenda. Other key stakeholders include the Ministries of Mining, Energy and Agriculture, district heating companies, civil society organizations, coal miners and other energy workers, research institutions such as the University of Belgrade and BioSense, and funding agencies such as Austrian Development Agency and GIZ.

This EL links to a TPP that seeks to advance forest- and tree-based bioeconomy solutions in Africa, Asia, Latin America, and Europe by integrating diverse environmental, socio-economic, political-legal and institutional factors. “Bioeconomy solutions represent an overlooked pathway to reduce greenhouse gas emissions (GHGs) and conserve biodiversity,” says Martius.

“This TPP allows for context-specific, integrated approaches to restore land and develop the bioeconomy, co-developed with stakeholders from public and private sectors and civil society”, adds Stoian. Mature approaches will be scaled to other landscapes and countries by leveraging responsible public and private investments in forest and land restoration and associated bioeconomy value chains.
**ONES TO WATCH**

**Oromia Engagement Landscape**

The Oromia Engagement Landscape is led by Ethiopia country coordinator Kiros Hadgu and scientist Endalkachew Woldemeskel.

Oromia is Ethiopia’s largest regional state, with 36 million people, 87% rural. It has a gradient of forest cover but has experienced two decades of largely failed restoration. Cultivation of marginal lands, forest deterioration, and drying of streams continue to lower land productivity and cause chronic food shortages. Soil erosion is rampant.7

The EL has assembled actors such as the Green Corridor, Oromia Regional Bureau of Agriculture, Oromia Natural Resources Bureau, and National Watershed and Agroforestry Multi-stakeholders Platforms, and aims to accelerate restoration.

In a USAID-funded study, the EL team interviewed 181 households: 29% were found to be taking action to restore their land; 71% were continuing to deforest and degrade it. The latter tended to be poorer and less well informed on environmental conservation techniques such as area enclosures and natural regeneration. Households that took measures to restore their land were found to have more trees than those that did not (49 versus 28) and more tree species (six versus four).

“We need woodlots for firewood and timber, alternative energy sources like biogas, fodder and forage trees for livestock, and to manage free grazing,” says CIFOR-ICRAF research consultant Mokria Mulugeta. “Agroforestry should be practised by choice, not by chance, because it has multiple benefits,” says Woldemeskel.

[worldagroforestry.org/blog/2021/01/18/ethiopias-engagement-landscape-hope-future](http://worldagroforestry.org/blog/2021/01/18/ethiopias-engagement-landscape-hope-future)

**Miombo Engagement Landscape**

The Miombo Engagement Landscape is led by Tanzania country coordinator Anthony Kimaro and Zambia- and Malawi-based scientists Patricia Masikati, Joyce Njoloma and Kaala Moombe.

“We want to transform this landscape. It is rapidly degrading,” says Kimaro. Miombo woodlands cover almost 3 million square kilometres in Tanzania, DRC, Angola, Zambia, Malawi, Zimbabwe and Mozambique. These dry deciduous forests have had far less attention than other African forest types, yet they sustain the livelihoods of 150 million people. Charcoal is one of its largest products but is unsustainable.

Currently CIFOR-ICRAF has three projects in this vital biome. One is assessing degradation in and ways to restore the Miombo ecozone of central Tanzania and Pemba Island. Another is building capacity of farmer field school facilitators in agroforestry and improving the quality of planting material in Malawi.

Partners in the EL include the Potsdam Institute for Climate Impact Research, Sustainable Agriculture Tanzania, Tanzania Industrial Research and Development Organization, and Eco-Charcoal Limited.

Veteran CIFOR-ICRAF scientist Davison Gumbo is optimistic. “If properly delineated, this EL can bring that vertical spread of institutions and partners that is essential for impact.”

[cifor.org/knowledge/publication/465/](http://cifor.org/knowledge/publication/465/)
West Africa Cocoa Engagement Landscape

The West Africa Cocoa Engagement Landscape is led by Côte d’Ivoire country representative Christophe Kouame. His office runs myriad cocoa projects and has worked on cocoa since 2010. “What we will do in this EL that we cannot do in projects is look at the bigger picture,” says Kouame.

Côte d’Ivoire produces 40% of the world’s cocoa but is suffering the effects of a shift to full sun cocoa in the 1970s, thought to be more productive at the time. Little remains of the country’s great ‘Upper Guinean Forest’ – once a thick green blanket across the lower half of the country, creating ideal conditions for cocoa.

The EL stretches east to Ghana, from where cocoa arrived in Côte d’Ivoire in the 1950s and which experienced a similar trajectory of prosperity, followed by severe deforestation, combined with aging trees, drought, loss of soil health, and high pressure from pathogens such as the Cocoa swollen shoot virus (CSSV).

In Côte d’Ivoire, CIFOR-ICRAF already partners with 14 cocoa cooperatives, national extension service ANADER, government forest body SODEFOR; companies Unilever, Cémoi, Mars Inc., Barry Callebaut and others; and partner/donors such as the Global Environment Facility (GEF), FAO and GIZ.

Restoration of cocoa landscapes is ongoing, and an agroforestry incubation centre has been designed. “In Ghana we will partner with the Forest Research Institute and cocoa board,” says Kouame.

Sahel Mosaic Engagement Landscape

Led by Patrick Worms and Jules Bayala, the Sahel Mosaic Engagement Landscape aims to prime economic development by creating green jobs and strengthening resilience to climate change.

By encouraging the adoption – by governments, donors and other partners – of a community-centric approach to land management, the EL aims to support local people to develop inclusive natural resource management plans that foster livelihoods and long-term sustainability. “We aim for the large-scale restoration of agroecosystems,” says Worms, a senior science policy advisor. “The key is to empower populations as landscape managers.

“Imagine dozens of landscapes of up to 100,000 ha regenerating and delivering a durable boost to agricultural productivity while creating jobs for youth and women,” says Bayala, an expert on trees in the Sahel and their role in groundwater recharge.

In the Sahel, large-scale greening is well known. In Niger, Mali and Senegal, millions of ha now boast the highest tree densities since measurements began. “This is largely the result of managed regeneration by farmers and herders,” says Worms. “It enables the regrowth of native trees while sequestering carbon that could generate income for landholders.”

The EL is supported by the Great Green Wall Accelerator at the UNCCD and World Economic Forum. Partners include Tree Aid, Réseau Sahel Désertification (RESAD) Sahel and private companies.

mdpi.com/1999-4907/12/2/198/htm
news.mongabay.com/2021/05/to-save-chocolates-future-start-now-and-go-big-on-agroforestry-commentary/
cifor-icraf.org/sahel-renaissance-engagement-landscape/regreeningafrica.org/
San Martín Engagement Landscape

The San Martín Engagement Landscape or SMART EL is led by senior land use system scientist Valentina Robiglio and spatial scientist and SMART focal point Rocio Vasquez.

A department in the Peruvian Amazon, San Martín covers 5.1 million ha. Of its 3.4 million ha of forest, much is threatened by commodity expansion, immigration and agroindustry. For 1.2 million ha of deforested land, the regional government seeks a transition to agroforestry.

To meet this challenge, it is urgent to change how stakeholders invest. SMART is a demand-driven multistakeholder platform to convert fragmented data and information on agroforestry into actionable knowledge through co-learning. Robiglio says it will be a game changer: “they are looking for evidence”.

Stakeholder participation is conditional on willingness to share information, particularly on agroforestry species, practices, costs, benefits and carbon. The collaboratively designed digital platform integrates multiple knowledge paradigms.

The ultimate beneficiaries are some 37,000 smallholder families eligible for agroforestry concession schemes, where they have the right to continuous and peaceful possession of up to 100 ha for 40 years.

“The expectation is that they will practice agroforestry and conserve water, soil and forests or forest lands,” says Robiglio. “However, to avoid deforestation and restore land, they need tailored agroforestry options, incentives and technical support. From SMART, they will not only receive better technical information but also better targeted policy instruments and projects.”

SMART’s goals include an Agroforestry Agenda for San Martín. Its partners now number 23, including NGOs, national think tanks, Swiss technical cooperation, farmer organizations, and government agencies. Conservation International, Earthworm, Tropical Forest Alliance, Coalition for Sustainable Production and PUR Projet are partners too.

“SMART can achieve a significant push towards NDCs, REDD+, restoration, avoided deforestation and well-being,” says Robiglio.

worldagroforestry.org/smart
cifor-icraf.org/smart-engagement-landscape/
Flagship Products

Large photo: DRC Yangambi, Axel Fassio/CIFOR-ICRAF.
The Global Resilience Impact Tracker

The Global Resilience Impact Tracker (GRIT) aims to fill a vital gap. Drawing on over a decade of systematic assessments of soil and land health by CIFOR-ICRAF and the expertise of a number of partners, the GRIT will serve as a common platform that makes state-of-the-art information on land and soil resilience available to a wide range of stakeholders.

“Landscape resilience refers to the ability of a landscape to sustain critical ecological functions and ecosystem services over time,” says Tor-Gunnar Vågen, CIFOR-ICRAF’s lead geospatial scientist. “Resilience-based management is urgently needed to protect the natural environment from further damage and to restore already degraded areas – particularly vulnerable drylands.”

The GRIT will integrate both ecological and social science data in a publicly available platform that includes regional and global assessments, interactive data stories and maps, and tools to inform and track local interventions to restore degraded land.

landscapeportal.org
worldagroforestry.org/output/land-degradation-surveillance-framework-field-guide

The Sahel Observatory of Land Degradation and Landscape Dynamic

The Sahel Observatory of Land Degradation and Landscape Dynamic is led by Ibrahim Toure and Jules Bayala. The FP will be a web dashboard of georeferenced land restoration project locations.

“In over 40 years in the Sahel, CIFOR-ICRAF has built unique expertise on landscapes, ecosystems and communities,” says Information and Communications Technology (ICT) expert Toure. “We wanted to capitalize on this with an evidence-based knowledge product that would highlight key livelihood indicators.”

“This FP takes advantage of datasets and project reports to create a decision-support tool on land degradation dynamics,” says ecophysiologist and agroforestry scientist Bayala. “Local and regional achievements and challenges are aggregated, allowing project managers and partners to understand what has already been done and how future interventions should be better designed.”

pubmed.ncbi.nlm.nih.gov/26908158/

Co-designing Smallholder Agroforestry Management

Co-designing Smallholder Agroforestry Management (COSAM) is an android application for mobile phones to enable farmers to design an agroforestry system. It is being developed by Endri Martini, an agroforestry specialist in Indonesia with a strong interest in extension.

“Few farmers have access to extension,” she says. “They can attempt to put together an agroforestry system on their own. But sometimes this results in dissatisfaction, and they reject agroforestry altogether. COSAM enables them to create one based on data collected by ICRAF studies over the past 10 years, either on bare land or existing farmland.”

Entities such as Mars Inc. and Livelihood Ventures are interested in COSAM to help their beneficiaries develop agroforestry designs that “balance environment and economics,” says Martini.

Along with BMZ, the Sustainable Oil Palm Agroforestry in North Sumatra project supported the development of the app, which includes a tele-extension service, with USD 50,000.

Another project, called Agroforestry Concept for North Sumatra, funded by L3F is being implemented in collaboration with the Netherlands Development Organisation (SNV) for the next three years with the aim of adding a monitoring component to COSAM.

cifor.org/knowledge/publication/8037/
Community-Based Restoration Monitoring System

Community-Based Restoration Monitoring System (CBRMS) is led by Yustina Artati, Usman Muchlish and Beni Okarda. The FP, which has received support from the Austrian Development Agency, is a digital platform to monitor restoration of degraded landscapes.

“It enables users to record information on restored areas such as tree growth, tree species, rainfall, soil temperature, moisture, and dynamics of peatland water level and subsidence,” says Artati, a senior research officer in Indonesia.

“The system is capable of working offline, is affordable, provides secure data storage and can easily be used by local communities,” says Okarda, a senior researcher focused on peatlands in Indonesia.

“CBRMS delivers monitoring data, which is important to understand the restoration activities and formulate corrective action if required,” says Usman Muchlish, a senior research data officer with CIFOR-ICRAF.

The system has been applied in CIFOR-ICRAF’s restoration projects supported by Indonesia’s National Institute of Forest Science and Temasek Foundation. Timor Leste’s Directorate General of Forest, Coffee and Industrial Plants is interested too.

CBRMS will provide information to farmers and landowners on the progress of their restored lands, which they could use to estimate their value.

cifor.org/knowledge/publication/7129/
mdpi.com/1999-4907/13/1/41
https://data.cifor.org/cbrms/
The Africa Tree Portal

The Africa Tree Portal (ATP) consists of country-specific and easy-to-use interactive maps that aid users to select species and seed sources. Because these are deployed as ‘ShinyApps’, they can be used with any type of operating system and via mobile devices, says the app’s developer, ecologist Roeland Kindt.

One app that became operational in 2021 is ‘What to Plant Where in Ethiopia’, a tool to “select suitable tree species and their best matching seed sources at any planting location in the country,” says Kindt.

After selecting the planting location in Ethiopia, the user can proceed to ‘species selection’, where the ‘use category’ can be selected, with choices of trees that provide wood, a product for human or animal consumption, or an environmental service.

The app then displays where to order the seed, noting that “the seed sources included are all from Ethiopia’s National Tree Seed Source Registry.” The app was developed under the Norwegian-funded Provision of Adequate Tree Seed Portfolio in Ethiopia (PATSCO) project with co-funding from the BMZ grant.

This widely useful FP is also being developed for Rwanda.

worldagroforestry.org/output/what-to-plant-where-in-ethiopia

TREE-BREED-NET

TREE-BREED-NET stands for Tree Breeder’s Network, an online web portal to promote breeding of prioritized trees from Africa, Latin America and Asia.

The FP is led by Prasad Hendre in Nairobi. He is a geneticist and plant breeder who is using molecular genomics tools for breeding efficiency and to develop improved varieties.

“We want breeders to engage with each other,” says Hendre. “Our aim is increased breeding of tree crops through interactive species-specific breeding and research networks.”

The ‘Tree registry’ tab gives details on 31 tree species. The ‘Tree breeder registry’ lists the names of breeders and the trees they work on.

Tree breeding has been notoriously slow, as breeders work in isolation for years. This portal will help connect them.

@MarionAluoch/CIFOR-ICRAF

treebreednet.worldagroforestry.org/index.php
Female Postdoctoral Fellowships

It is no easy feat for women to obtain a PhD and even harder to stay in science. Globally, females make up 44% of those enrolled in PhD programmes; just 30% of researchers are women. But it is particularly hard for women from developing countries, and CIFOR-ICRAF itself has not reached gender equity.

“Across most of our scientific staff, from lab techs to scientists, women make up just 33% of staff” says Christine Lamanna, a climate change adaptation scientist at CIFOR-ICRAF. “This is better than the global average for research and development positions. But men still outnumber women 2:1 in junior to middle level positions. From senior scientists and above, females represent just one in five scientists. This needs rectifying for gender equity and because the natural resource management field benefits immensely from women scientists.”

Already addressing the problem, CIFOR-ICRAF has had success in the past with targeted support to promising women scientists, particularly female ‘postdocs’. But with the BMZ grant, five more were brought in, four from ‘science- and technology-lagging countries, a World Academy of Sciences classification.’

Laura Morales from Peru is working on biophysical indicators of resilience in smallholder coffee in Latin America and the Caribbean. Jane Mutune from Kenya is working on low-carbon pathways, increased forest cover and improved livelihoods.

Alice Karanja, also from Kenya, is working on how local food environments and sociocultural contexts influence food choices, including neglected and wild food species. “We are thankful for the support from BMZ,” says the young researcher who received her PhD from the University of Tokyo. “I’m excited to send the elevator back down for the next generation of women at the start of their career.”

Khaing Thandar Soe from Myanmar works on her country’s NDCs to the Paris Agreement and on agroforestry in Myanmar’s dry zones. “As a young female scientist, the postdoc allows us time to research, network, gain skills, be an independent researcher and look for long-term positions.”

Lisa Fuchs is from Germany but works largely in Kenya on assets-based community development, an approach that helps communities reflect on their strengths, which in turn leads to greater uptake of nature-based solutions.

In a discussion with two dozen women who held postdoctoral fellowships at CIFOR-ICRAF in the last 15 years, they described challenges but also upsides: “Married women face major challenges because the discretion to join a PhD programme and build a career lies with the spouse. Women must worry about balancing childbearing and studies.”

“The postdoc gave me security to not have to look for consultancies to cover my family responsibilities.”

“It allowed me to build my own ideas and not to accept the disadvantages of a country where research is undervalued.’

Currently four of the five BMZ-funded female postdoctoral fellows now have full-time jobs at CIFOR-ICRAF. It has been a launch pad.

Left: Alice Karanja leads a focus group discussion in Kenya.
The way forward

During their respective 26 and 40 years of rigorous research for development, CIFOR and ICRAF documented the real drivers of deforestation, found which tree species and varieties work best in a myriad of contexts – among them agroforestry landscapes – and discovered just how much carbon trees sequester in ecosystems, from dry forests to mangroves.

They also untangled the complexities of tree crop and other value and supply chains, and learned from Indigenous and local communities what they need to keep their own trees in the ground and sustain their relationship with their environment. In so doing, the two organizations developed extensive partnership networks at local, subnational and national levels across Africa, Asia and Latin America.

Now, functionally merged, CIFOR-ICRAF is building on the reputations of both its founding members to deepen the trust embodied by those partnerships, with a renewed commitment to deliver demand-driven, actionable evidence of the solutions that forests and trees can bring to global crises.

Despite unexpected events that few could predict, such as the Covid pandemic, CIFOR-ICRAF beat the five-to-one odds against a successful institutional merger, pulling off an equal and voluntary merger of two international organizations with full programmatic and corporate service alignments – a storied achievement in any sector.

Every ambitious undertaking needs support, however. Without the vision and trust of its investors, which bolstered CIFOR-ICRAF’s confidence, it would have been difficult to embark on a journey as seemingly risky as this one. CIFOR-ICRAF is profoundly grateful to BMZ for the generous financial investment and collaboration detailed in this report. It also offers heartfelt thanks to its other key partners.

CIFOR-ICRAF is looking well ahead on its current path, and particularly looks forward to among other engagements:

- bringing higher quality and more diverse seed options to the many tree-growing initiatives around the world;
- further supporting governments in their efforts to meet climate, restoration and biodiversity goals;
- working with private sector and community partners to build more sustainable and inclusive value chains;
- increasing global recognition of the multiple ways trees contribute to nutrition and food security;
- informing more inclusive and equitable policy and practices that ensure the rights of women, Indigenous Peoples and local communities;
- helping to establish one billion trees outside of forests in India;
- getting innovative, locally relevant apps into the hands of farmers, local officials and NGO; and
- raising awareness of the drylands of Asia and seeing them restored.

Ultimately, it looks forward to a safer, healthier and more equitable world of resilient landscapes.

CIFOR-ICRAF is ready for new opportunities and challenges, drawing on the experience of two organizations forged into one through a shared conviction in the power of trees, forests and agroforestry. It looks to its valued partners – old and new – to work together to co-create the kinds of nature-based solutions solutions the world needs now.
References


Appendix: Project goals and targets

CIFOR-ICRAF delivered on all of the specific targets laid out in 2018 under the BMZ grant “Effecting the CIFOR-ICRAF Merger through Delivery of Resilient Landscapes Project”:

- On institutional viability, it has undergone a complete programmatic and operational merger, with a single governing Board, single leadership team, joint regional structure and five joint programmatic themes, all guided by the CIFOR-ICRAF Strategy 2020–2030 (target IV 1).
- Resilient Landscapes was launched as a multistakeholder research project to catalyse more integrated efforts in land restoration, reduced deforestation, more integrated landscape investments, and better functioning of global tree commodity value chains particularly across the private sector (target IV 2).
- CIFOR-ICRAF surpassed its goal of developing four large project opportunities to catalyse blended finance investments and demonstrate the viability of landscape-level approaches at scale, delivering eight covered under project funding and several others (target IV 3).
- On the target for actionable knowledge products and services such as digital tools, CIFOR-ICRAF has produced thematic publications that synthesize available evidence, analyses, knowledge, technologies, solutions and delivery options for landscape interventions (target AKPS 1).
- Finally, the organization has leveraged increasingly effective partnerships, such as the UN Decade on Ecological Restoration, the UN Decade on Family Farming, the Collaborative Partnership on Forests, and post-2020 climate actions (target AKPS 2).
Status of indicators for BMZ grant “Effecting the CIFOR-ICRAF Merger through Delivery of Resilient Landscapes Project”

<table>
<thead>
<tr>
<th>PROJECT RESULTS (TARGETS AND ACTIVITIES)</th>
<th>AMOUNT SPENT (EUROS)</th>
<th>INDICATORS</th>
<th>STATUS</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTCOME</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective merger of two independent international organizations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• One organization structure</td>
<td></td>
<td></td>
<td>• Completed</td>
<td>CIFOR-ICRAF has undergone a complete programmatic and operational merger, with a single governing Board, single leadership team, joint regional structure and five joint programmatic teams, all guided by the CIFOR-ICRAF Strategy 2020–2030.</td>
</tr>
<tr>
<td>• Single programme of work and budget</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Consolidated set of accounts</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>ACTIVITIES</td>
<td>131,079</td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>IV1.1 Fostering progressive institutional change management</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Merger Transition Plan in place, teams working, regularly updated and reported</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Adaptive Change Management framework in place and operating</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Donor and partner surveys undertaken and responded to</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>IV1.2 Strengthening scientific integration</td>
<td>232,959</td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Convening at least three joint planning meetings to prioritize agenda and structures</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Strengthening new science competencies to ensure transdisciplinary work succeeds</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Incubating scientific collaboration across CIFOR and ICRAF unit and teams</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>IV1.3 Strengthening female scientific capacity</td>
<td>400,889</td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Establish a female postdoctoral program as a pipeline for a future female science leader cadre</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>IV1.4 Driving corporate efficiencies</td>
<td>187,305</td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Joint planning meetings for priority institutional structures and functions</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Rationalization of duplicative or less effective units, country offices, functions</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Full policy, process and practice review to harmonize and integrate them</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>IV1.5 Merger oversight and communications</td>
<td>133,905</td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Meetings with developing country partners to engage, and elicit support for the merger</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Sharing lessons on approaches, learnings and unforeseen aspects</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Completed although regular follow-ups needed</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Largely completed in meetings, discussions and presentations (writing up as a Harvard Business Case study in progress)</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>TARGET IV1 CIFOR-ICRAF MERGER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OUTCOME</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibrant platform in place for more inclusive and integrated work on land-use, tree commodity value chains and nature-based solutions</td>
<td></td>
<td></td>
<td>• Completed</td>
<td>Resilient Landscapes was launched as a multistakeholder research project to catalyse more integrated efforts in land restoration, reduced deforestation, more integrated landscape investments, and better functioning of global tree commodity value chains particularly across the private sector.</td>
</tr>
<tr>
<td>ACTIVITIES</td>
<td>133,005</td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>IV2.1 Securing interest and co-investors (with Germany) of Resilient Landscapes project</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Visits to public and private supporters</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Engagement at all relevant international fora</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Securing other investors (aim for Germany to hold 20-30% total financial support)</td>
<td></td>
<td></td>
<td>• Continuing</td>
<td></td>
</tr>
<tr>
<td>IV2.2 Creating greater international appreciation of Resilient Landscapes issues, and launching of Resilient Landscapes</td>
<td>271,115</td>
<td></td>
<td>• Completed</td>
<td>Resilient Landscapes was established as a unit in Bonn with dedicated staff and a branded website <a href="http://www.resilientlandscapes.org">www.resilientlandscapes.org</a>.</td>
</tr>
<tr>
<td>• Operationalisation of Resilient Landscapes Platform in Bonn (new staff and ops)</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Convening relevant events and leveraging Global Landscapes Forum events</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Profiling Resilient Landscapes in multiple CGIAR and non-CGIAR fora</td>
<td></td>
<td></td>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Reducing fragmentation of efforts (e.g., develop common standards, sharing platforms)</td>
<td></td>
<td></td>
<td>• In progress</td>
<td></td>
</tr>
<tr>
<td>TARGET IV2 RESILIENT LANDSCAPE APPROACH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TARGET IV3 FOUR LANDSCAPE PROJECTS DEVELOPED</td>
<td>AMOUNT SPENT (EUROS)</td>
<td>OUTCOME</td>
<td>ACTIVITIES</td>
<td>STATUS</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----------------------</td>
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<td>--------</td>
</tr>
<tr>
<td>• At least 10 complete and viable Project Designs available</td>
<td>169,266</td>
<td>Scoping of viable project based on “resilient landscapes” performance criteria</td>
<td>Completed</td>
<td>Surpassed the goal of developing four large project opportunities to catalyse blended finance investments and demonstrate the viability of landscape level approaches at scale. Eight projects were delivered that are covered by project funding, plus others.</td>
</tr>
<tr>
<td>• At least four projects commenced with new blended financing</td>
<td></td>
<td>Determination and publication of resilient landscapes performance criteria</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Greater than 20 project ideas formulated across Africa, Asia and Latin America</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>278,188</td>
<td>Developing larger deals on forest management, tree commodity value chains/value webs and land restoration</td>
<td>Completed</td>
<td>Four TPPs, 3 ELs and 1 FP supported as part of this, including: Landscape Restoration TPP, Transforming the Quality of tree planting TPP, Bioenergy for a Just, Green Transition in the Western Balkans Engagement Landscape, Zagamnbi Engagement Landscape, Sahel Mosaic Engagement Landscape.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Act as project manager and/or implementer as requested by project sponsors</td>
<td>Completed</td>
<td>Bilateral funding is secured for projects that map to the TPPs, ELs and FPs mentioned above. A large landscape project (360,000 ha) with Resilient Landscapes has been developed in Managalas in Papua New Guinea.</td>
</tr>
<tr>
<td>In kind</td>
<td>Mobilizing finance and launching innovative deals</td>
<td>Act as project manager and/or implementer as requested by project sponsors</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>TARGET AKPS1 LANDSCAPE PUBLICATIONS</td>
<td>76,024</td>
<td>Synthesis of existing efforts and opportunities for landscape-level impact scaling</td>
<td>Completed</td>
<td>CIFOR-ICRAF has produced thematic publications that synthesize available evidence, analyses, knowledge, technologies, solutions and delivery options for landscape interventions.</td>
</tr>
<tr>
<td></td>
<td>68,210</td>
<td>Production of technical guides for landscape and ecological restoration using agroforestry and forestry approaches</td>
<td>Completed</td>
<td>Three FPs: Co-designing Smallholder Agroforestry Management, Community Based Restoration Monitoring System, TREE-BREED-NET.</td>
</tr>
<tr>
<td></td>
<td>67,573</td>
<td>Publication of landscape knowledge series related to at least four SDGs related to food security, income, water, energy, forestry, climate</td>
<td>Completed</td>
<td>Two ELs: Cocoa Agroforestry Engagement Landscape in Southern Cameroon, Refugee-Hosting Engagement Landscapes in Central and Eastern Africa.</td>
</tr>
<tr>
<td>TARGET AKPS2 LEVERAGING PARTNERSHIPS</td>
<td>335,000</td>
<td>Connecting CIFOR-ICRAF and Resilient Landscapes work with existing BMZ investments and efforts</td>
<td>Completed</td>
<td>CIFOR-ICRAF has leveraged increasingly effective partnerships, such as the UN Decade on Ecological Restoration, the UN Decade on Family Farming, the Collaborative Partnership on Forests, and post-2020 climate actions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Support to Collaborative Partnership on Forests initiatives, Support to UN Decades on Family Farming and Decade Ecological Restoration initiatives, Support to AFR100 and related initiatives, Support to Global Soil Week</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>65,000</td>
<td>Providing retained expert advisor role to BMZ for land health/restoration, agroecology, adaptation</td>
<td>Partially completed</td>
<td>Covid and staff changes at BMZ pushed this to lower priority. Nevertheless, senior staff at CIFOR-ICRAF have provided advisory services to counterparts at BMZ on agroecology, land health and restoration and climate change, although not in the form originally envisaged for reasons stated above.</td>
</tr>
</tbody>
</table>
In a resilient landscape, people, the economy and the environment are better able to anticipate, manage and adapt to current and future shocks in a way that preserves or restores key equilibria for nature and human well-being in the landscape.

Vincent Gitz
Director for Latin America and
Director of Programme and Platforms