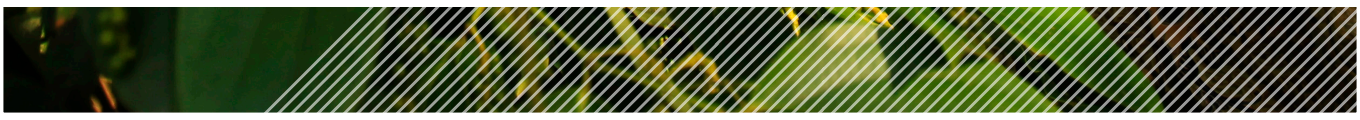
World Agroforestry Centre

Corporate Strategy 2017-2026

TRANSFORMING LIVES AND LANDSCAPES WITH TREES



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Abbreviations and **acronyms**

APAARI	Asia Pacific Association of Agricultural Research Institutes
ASEAN	Association of South-East Nations
BRIC	Brazil, Russia, India and China
CBO	Community-Based Organization
CC	Climate Change
CCAFS	Climate Change, Agriculture and Food Security
CDC	formerly Commonwealth Development Corporation
CGIAR	CGIAR Consortium
CMES	Centre for Mountain Ecosystem Studies, Kunming
COP	Conference of the Parties
CRP	CGIAR Research Programmes
CSA	Climate Smart Agriculture
DDG	Deputy Director General
DRC	Democratic Republic of Congo
EAC	East Africa Community
ESAf	East and Southern Africa
FARA	Forum of Agricultural Research in Africa
FDI	Foreign Direct Investment
FTA	Forests, Trees and Agroforestry
GDP	Gross Domestic Product
HT	Humid Tropics
IARC	International Agricultural Research Centre
IBF	ICRAF Business Framework
ICRAF	World Agroforestry Centre
ICT	Information and Communication Technology
IDO	Intermediate Development Outcomes
IDRC	International Development Research Centre, Canada
IGAD	Intergovernmental Authority on Development
iLEAP	Impact Learning Evaluation and Acceleration Platform

IT	Information Technology
KPI	Key Performance Indicator
M&E	Monitoring and Evaluation
MIS	Management Information System
MOU	Memorandum of Understanding
NAMA	Nationally Appropriate Mitigation Actions
NARI	National Agricultural Research Institute
NDC	Nationally Determined Contributions
NGO	Non-Governmental Organization
OCS	One Corporate System
ODA	Overseas Development Assistance
OECD	Organization for Economic Co-operation and Development
PES	Payments for Environmental Services
PMEL	Planning, Monitoring, Evaluation and Learning
R&D	Research and Development
RDT	Research and Development Theme
REDD+	Reducing Deforestation and Forest Degradation in Developing Countries
RMG	Research Methods Group
ROI	Return On Investment
SADC	Southern Africa Development Community
SARP	South Asia Regional Programme
SDG	Sustainable Development Goal
SHARED	Stakeholder Approach to Risk-Informed Evidence-based Decision-making
SLO	System Level Objectives
SME	Small and Medium Enterprise
SOC	Soil Organic Carbon
SQP	Science Quality Platform
SRF	Strategic Results Framework
TLFF	Tropical Landscape Finance Facility
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WEF	World Economic Forum
WLE	Water, Land and Ecosystems CRP

01 Executive summary

With our refreshed Strategy, ICRAF is confident that we can, with supporting countries and national partners, and over the next 10-15 years, ensure: 15 million fewer hungry people, 10 million fewer poor people – at least 50% of whom are women – and have 20 million hectares less degraded land.

Agroforestry as a term and the World Agroforestry Centre (ICRAF) have both existed for only 40 years. Yet, much has been accomplished in this short period. Scientific achievements and impacts are well described in more than 6200 literature references over the past four decades. This has led to the expansion of agroforestry, and ICRAF, across the developing regions of the world.

In the last few years, the global community has committed to tackle climate change and to change the development pathways in the 2030 agenda. ICRAF will support the actions necessary to achieve these goals. The CGIAR System, which ICRAF joined in 1991, has articulated its contribution to this effort through a Strategic Results Framework (SRF) and a second phase of 12 CGIAR Research Programmes that began in January 2017. These and other changes have required ICRAF to refresh its own Strategy so as to remain true to the vision and mandate its founders and beneficiaries expressed 40 years ago while at the same reflecting today's realities to meet tomorrow's opportunities, and challenges.

By combining more productive trees with more resilient and profitable agricultural systems and a sounder understanding of the health of the soil, land and people that is part of 'greener' and better governed landscapes, we expect to offer more valuable and timely knowledge products and services to the global community as it tackles the major challenges of the Anthropocene.

A focus on four key, interacting themes will guide ICRAF's work in the next 10 years. By combining more productive trees with more resilient and profitable agricultural systems and a sounder understanding of the health of the soil, land and people that is part of 'greener' and better governed landscapes, we expect to offer more valuable and timely knowledge products and services to the global community as it tackles the major challenges of the Anthropocene. These include the challenges of dealing with climate change; low soil carbon, widespread forest, tree and soil loss leading to degradation, poverty, demographic upheavals and conflict; and securing equitable futures for all with a special focus on women and children. In this we recognize the need for partnerships of all kinds, the sharing of data, information, knowledge and wisdom and the need to provide evidence at scale that proposed solutions live up to their promise. In essence, connecting better the last mile (development) with the first mile (research).

These priority themes are not intended as isolated silos of staff or of bodies of work but are meant to connect our work through cross-thematic initiatives around larger opportunities. Such opportunities include tree crop commodities (e.g. cashew, coconut, cocoa, coffee, oil palm, rubber, timber, etc) and land restoration, including soil carbon, across nested geographical and jurisdictional scales. Other cross-thematic initiatives include: nutrition, bioenergy, water utilization, social inclusion and demand-driven interactive engagement processes (e.g. ICRAF's SHARED approach). Two significant changes are focusing more attention to delivering knowledge services and operating at larger scales of intervention for greater impact. Here we seek to better combine the science of discovery with the science of delivery.

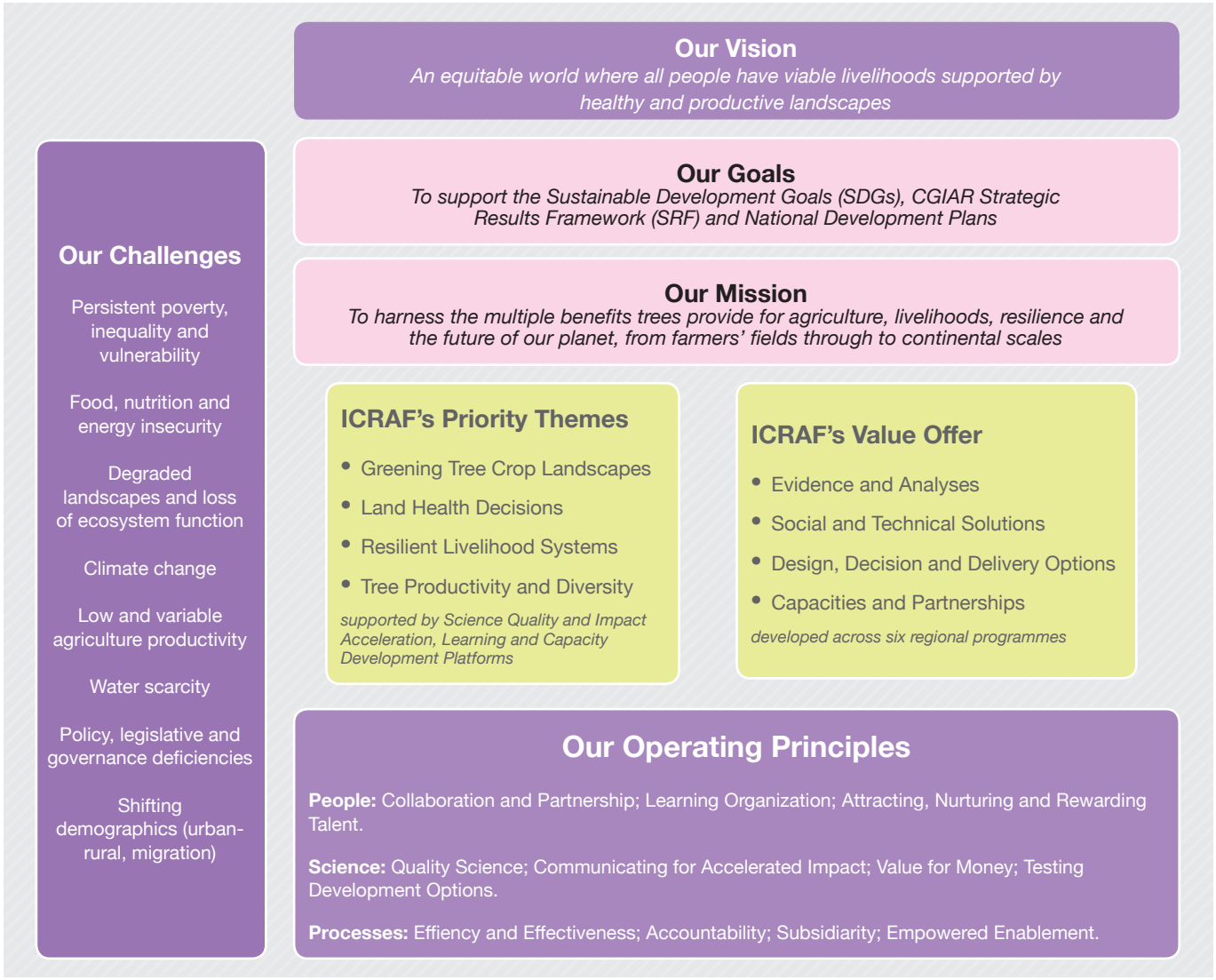
We seek to better combine the science of discovery with the science of delivery

Greater clarity is provided on ICRAF's value proposition to the world with four main offers of; (i) evidence and analyses; (ii) social and technical solutions; (iii) fit-for-purpose designs, decisions and delivery; and (iv) stronger capacities and partnerships. As a people-centred institution our four values of professionalism, mutual respect, creativity and inclusion enable us to tailor these offerings to a wide range of clients and beneficiaries in the various countries in which we operate.

Capitalizing on past efficiency gains in our business systems and operations, we have devised a leaner institutional organogram which neatly shows the linkages between governance and management with the two main groups of: (i) institutional and resource enablers; and (ii) research and development practitioners.

Finally, this Strategy offers a compelling, overarching ICRAF Theory of Change with various impact pathways. This appears alongside our three companion approaches of: (a) theories of change understanding; (b) theories of place; (c) theories of induced change (or intervention success). Underpinning all of this though is sound governance supported by the ICRAF Business Framework as well as Risk Management and Risk Appetite approaches.

Figure 1. ICRAF Strategy: Our Key Elements



02 ICRAF-**Our evolving institutional rationale**

The terms agroforestry, or agriculture with trees, and ICRAF have been intimately linked since their co-creation in the 1970s. It was a time of enormous disconnect between people and the natural resources of our world, and a generally low global recognition, understanding and appreciation of the roles of trees in rural habitats.

The clearing of forests for annual crops, over-exploitation of firewood resources, un-factored environmental services of trees, and inequitable land governance were the norm. Soil erosion, deforestation, undiversified and vulnerable smallholder incomes, malnutrition and lack of social cohesion are some of the outcomes arising from this widespread mismanagement.

ICRAF has contributed to the development of solutions designed to tackle many of these challenges. Notable achievements and impacts over the past 10 years include: supporting national agroforestry policies; developing tree varieties; strengthening rural advisory service provision; standardizing and employing land health assessment methods; multiple scale geo-spatial analyses; formulating systems science paradigms; providing negotiation support tools; stimulating environmental service rewards; devising climate adaptation approaches; developing bio-energy options; formulating rainbow water concepts; and increasing decision support.

However, we now also have to find adapted and new solutions for a dramatically changing climate and for sustainable development for a further burgeoning population. To do this, ICRAF is constantly evolving as an institution to better address these persistent problems with more sustainable and perennial solutions. This refreshed Corporate Strategy lays out our legacies, plans, resources and logic to effect even more lasting and positive change with trees.

Our Strategy

The three main utilities of ICRAF's Strategy are, in order of priority: (i) to provide direction and guidance to the Centre and its staff to instill focus, empower decisions and foster a sense of purpose and pride; (ii) to more clearly describe our work to others and better engage with partners; and (iii) to appeal to investors to start or to continue investing in agroforestry and ICRAF.

Our Vision

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

Our Mission

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

Our Priority Themes

We work with cross-sectoral and transdisciplinary approaches with greatest attention around four priority themes:

- *Improving Governance of Tree Crop Landscapes for Resilient Green Economies, Climate Change and Sustainable Environmental Services*
- *Land Health Evaluation, Restoration and Investment Decisions*
- *Resilient Productivity and Profitability of Agricultural Systems with Trees*
- *Tree Productivity and Diversity: Realizing Economic and Ecological Value from Tree Genetic Resources*

The themes are supported by a Science Quality Platform and an Accelerating Impact, Learning and Capacity Development Platform.

Our Value Offer

ICRAF is a centre of scientific excellence possessing the world's largest repository of agroforestry science and information: expertise; published literature; methods; data; databases; partnership networks; and tree germplasm collections. Specifically, on rural landscapes and livelihoods we are the place to engage for:

- Providing robust evidence and analyses
- Making available social and technical solutions
- Assisting with design, decision and delivery options
- Developing capacities, convening and partnerships

Our work is primarily delivered through six regional programmes supported by Nairobi-based laboratories and technical units.

Our Operating Principles and Values

ICRAF's three Operating Principles focus on: (i) **People:** collaboration and partnership; learning attracting, nurturing, and rewarding talent; (ii) **Science:** quality science; communicating for accelerated impact; value for money; testing development options; and (iii) **Processes:** efficiency and effectiveness; accountability; subsidiarity; empowerment.

The Operating Principles are reinforced by our four values of ***Professionalism, Creativity, Mutual Respect*** and ***Inclusivity.***

03 Future prospects: Our changing world

The world around us is changing profoundly and this situation reflects the inter-relationship among the different dimensions and issues that face societies. The complexity of 21st century challenges demand 21st century solutions. ICRAF is orienting itself to work specifically on:

The 2030 agenda

The global agreement on the 17 Sustainable Development Goals (SDGs) in 2015 spells out the changes that must take place to ensure a sustainable and equitable society supported by a resilient environment. The aim is to address socioeconomic and environmental dimensions in an integrated and coherent way, and this will require a greater emphasis on inter-sectoral approaches to meet the SDG targets, as well as other multi-lateral agreements. It is also a knowledge intensive plan that requires robust science. There is a strong need to ground the international agreements at the national and subnational levels, and to provide the necessary resources, capacities and legal frameworks for multi-scaled governance to function well so as to achieve the SDGs effectively.

Given that ICRAF works in conjunction with national governments (as donors, beneficiaries, partners), the SDGs frame all of what the organization seeks to achieve through our work. Table 1 below illustrates the overlap between the ten SDGs which relate both to ICRAF's overall agenda as well as its four specific research themes.

Table 1. Overlap between the SDGs and ICRAF's agenda and its priority R&D themes.

Sustainable Development Goal (SDG)	ICRAF Priority Research & Development Themes	Tree Productivity and Diversity	Land Health Decisions	Resilient Livelihood Systems	Greening Tree Crop Landscapes
1	No Poverty	***	***	***	***
2	Zero Hunger	***	***	***	**
3	Good Health	**	*	*	
6	Clean Water		**	**	**
7	Clean Energy	**			*
8	Decent Work	*		*	**
10	Reduced Inequalities	*	*	*	**
13	Climate Action	**	***	**	***
15	Life on Land	**	***	***	***
17	Partnerships	***	***	**	***

Key Degree of overlap by the Centre: significant moderate
Degree of overlap by Research Theme: * some ** moderate *** significant

CGIAR system

ICRAF is a member of the CGIAR System and guided by its Strategic Results Framework (SRF) for 2016-2030. The SRF has three high level goals, or System Level Objectives (SLOs): (a) Poverty Reduction; (b) Increasing Food and Nutritional Security; and (c) Improved Natural Resource Systems and Environmental Services. Impact targets for the three SLOs are: by 2030, the action of CGIAR and its partners will result in 150 million fewer hungry people, 100 million fewer poor people – at least 50% of whom are women, and 190 million hectares less degraded land. ICRAF works on all three SLOs and estimates it will contribute approx. 10% of the impacts intended by the CGIAR System, impacting more than 25 million people (50% of whom will be women) and more than 20 million hectares of land. In addition, under the three SLOs are a set of 10 Intermediate Development Outcomes (IDOs) of which ICRAF works on all except food safety. ICRAF further maps its work to 24 of the 30 sub-IDOs. We plan to achieve these impacts through our programmatic work at country and project levels.

Whilst the CGIAR is best known for the crop varieties that triggered the "Green Revolution" in Asia and Latin America - among the CGIAR entities ICRAF's strengths in tree germplasm, systems science, geo-spatial analyses, environmental services, land health science, bio-energy, decision support and tree commodities are now also well recognized. The current CGIAR Portfolio has 12 CGIAR Research Programmes (CRPs) of which ICRAF is active in five. ICRAF remains committed to being an active contributor to the CGIAR collective and promoting its integrated brand. We also perceive a need to avoid over reliance on CGIAR earmarked funding. To help accelerate the beneficial impact of much of our work we thus recognize a clear need to maintain ICRAF's strong agroforestry and institutional brand.

Evolving global risks

The World Economic Forum (WEF) puts out an annual global risk assessment which provides a snapshot, past trend analysis and 10-year future projection on top global risks. Notwithstanding the fact that the risks co-vary, the emergence of new annual risks and current top long-term risks resonate well with our evolving agenda. Currently the top five risks include: extreme weather events; food crises; profound social instability; failure of climate change mitigation and adaptation; and water crises. ICRAF's science is aligned to tackle all of these. These current risks and emerging ones will be regularly reviewed to ensure we are adapting our work to perceived demands.

Climate change

Alongside the SDGs, the Paris Agreement on Climate Change emerging from the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP) 21 aims to strengthen the ability of countries to address the impacts of climate change through more coherent mechanisms. These mechanisms include financial flows, technology frameworks, and enhanced capacity development efforts in support of action by developing countries. More specifically, countries agreed to publicly outline the post-2020 climate actions they intend to take under the new international agreement, referred to as their Nationally Determined Contributions (NDCs), which brings a new level of logic for addressing simultaneous goals of climate change mitigation and adaptation. Both mitigation and adaptation will have to rely in part on trees and ICRAF will contribute to the knowledge and materials for these needs.

Addressing complexity and nexus thinking

Over recent decades, there has been a greater appreciation of the inter-relationships between different aspects that have historically been treated separately in disciplinary or professional silos and sectors. Concepts encompassing multiple forces and processes, such as addressing planetary boundaries, operationalizing resilience, or the challenges of adaptation in the Anthropocene, demand nexus thinking and a new appreciation for complexity and uncertainty. This necessitates more flexible systems approaches and trans-disciplinary teams. Collaboration around city-rural food systems, entailing work on

nutrition, food-water-energy nexus, land restoration and territorial spatial planning, and reconciling conservation and production goals in ecology and agriculture are examples of the emerging arenas undertaking complex adaptive systems approaches.

Shifting demographics

While there has been an agreed urgency around population growth – 9 billion people by 2050 predictions – there has been a significant shift in how populations are moving within and across boundaries due to multiple drivers, including employment pull, poverty and conflict. Current estimates foresee that the urban estate on the planet will double over the next 20 years, with most of this additional growth concentrating in Sub-Saharan Africa and South Asia. Both natural increase of urban populations and a generalized migration from rural communities to urban areas are fueling these trends. This urbanization dynamic has many consequences for rural-urban linkages in terms of flow of natural resources, waste and pollution, information, finance and power relationships, and will likely entail a mix of spatial patterns. These patterns include: more mega-cities, growth of satellite cities, corridors and metropolitan agglomerations, expansion of secondary cities and market towns, as well as formation of wholly new urban centres.

Information ecology and technology

All segments of society, including smallholder farmers, are benefitting from gains in the IT sector. Finance, advice, input suppliers and market opportunities are a few examples. As more and more data and information become available (big data phenomenon), organizations such as ICRAF will need to seize these and ensure they are translated to actionable forms of knowledge across biophysical and socio-economic contexts. How big the data are will be less important than how advanced the analytics are on that data, and in turn how accessible such knowledge is to stakeholders on smartphones, internet and other platforms. This will allow better engagement among researchers, land managers and other stakeholders at field, farm and landscape levels. Greater horizontal integration across physical, biological and human sciences is also a prerequisite for generating the multi-disciplinary and syntactic research required. More comprehensive and multi-leveled vertical integration (between primary scientific research, science-policy integration and decision support, and taking action through reviewing and evaluating progress) is also vital for adaptive management to function effectively. An information ecology framework provides insight into how these levels might better relate and prepare researchers and policymakers to better understand how their respective roles and responsibilities across Science-Policy interfaces can function to harness and channel societal demands and pressures into more sustainable and adaptive responses.

Humanitarianism meets development

While emergency/humanitarian and development aid have been treated separately, the distinction has become more blurred with a greater emphasis on longer-term development while continuing to respond to emergencies. However, new levels of uncertainty and system shocks, as well as chronic patterns of emergencies will continue to need both rapid and strategic responses. Mobilizations at new scales are required, most recently in the form of responses to zoonotic diseases (e.g. MERS-CoV, Ebola and Zika viruses) but also for addressing systemic vulnerabilities to environmental change, presented by the unprecedented frequency and intensity of extreme events such droughts, floods and fires. The resilience frameworks coming to the fore in the face of these crises are revealing interdependencies and feedback mechanisms. They are also bringing principles of integration, adaptive management and multi-scaled approaches across social, environmental and economic dimensions.

Shifting worlds of finance

Overseas Development Assistance (ODA) is evolving as OECD and BRIC countries re-evaluate their responsibilities and priorities going forward. Higher taxpayer accountability, demands for greater value for money, pressures on domestic spending and the broadening scope of ODA eligible activities is putting pressure on the annual spend of US$130 billion towards traditional ODA. ICRAF recognizes that alongside ODA we need to mobilize and leverage remittances, FDI and domestic finance. The agriculture, forestry and environment sectors face fluctuating interest between years which makes it difficult for research funding and long-term enterprises such as agroforestry. At the same time new opportunities are emerging for more novel Public-Private Partnerships that can show greater returns. Blended finance approaches combining loans, grants and leveraged support offer particularly exciting opportunities.

Delivering impact

Public and private sources of investment are demanding greater demonstrable impact, as well as explicit and attractive returns on investment (ROIs). Development outcomes are not fully predictable and development is often stated as being an experiment. From a research perspective they are experiments but ones which are not replicated, have no counterfactual, don't test options, are poorly documented, not systematic and too little is learned from pilot efforts. Single approach pilots tend to continue to be funded beyond their shelf life. "Pilots never fail, but pilots never scale" is a common perception. Not surprisingly, finance for development has reinforced its focus on the sustainable development impacts that will result per dollar invested. There is a strong need to better connect the last mile of development with the first mile of research.

04 Agroforestry: **Our inclusive definitions and utilities**

The term agroforestry emerged in the late 1970s following a study by Canada's International Development Research Centre (IDRC). In the four decades since, agroforestry has been understood and defined in multiple ways, often referring to a specific system scale of interest.

This scale ranges from trees via tree-soil-crop interactions at plot level, the interactions between land, labour, knowledge and investment at farm level, and human livelihoods at landscape scale. Moreover it encompasses the dynamics of tree cover change in space and time, socio-ecological systems at landscape scale, the multiple value chains that start with tree, crop and livestock production in landscapes. Additionally, it has included the policy domains of forestry and agriculture in the context of the sustainable development goals, globalizing markets and global climate change. To do justice to all these system scales and to have a definition that meets the basic targets of describing 'what it is' and clarifying 'what it is not', we work on the following definitions.

Updated definitions and descriptions

Basic Definition

Agroforestry is 'agriculture with trees'.

Comprehensive Definition

Agroforestry is the practice and science of the interface and interactions between agriculture and forestry, involving farmers, livestock, trees and forests at multiple scales.

Full Description

Agroforestry is the interaction of agriculture and trees, including the agricultural use of trees. This includes trees on farms and in agricultural landscapes, farming in forests and at forest margins and tree-crop production, including cocoa, coffee, rubber and oil palm. Interactions between trees and other components of agriculture may be important at a range of scales: in fields (where trees and crops are grown together), on farms (where trees may provide fodder for livestock, fuel, food, shelter or income from products including timber) and landscapes (where agricultural and forest land uses combine in determining the provision of ecosystem services). At national and global scales, forestry and agriculture interact ecologically and through policies relating to land use and trade, and are important with respect to climate change and other environmental concerns. Agroforestry embraces an agro-ecological approach putting emphasis on multi-functionality and the management of complex systems and polycultures rather than focusing exclusively on monoculture.

We use the word ‘tree’ inclusively, to refer to trees and shrubs, all woody perennials, palms and bamboo. We also use the word ‘agriculture’, inclusively, to refer to a human activity, carried out primarily to produce food, fibre and fuel by the deliberate and controlled use of plants and animals.

Utilities of agroforestry

In general, there is nothing better than a tree at simultaneously:

- Sequestering carbon from the atmosphere
- Bringing up water and nutrients from depth
- Providing a framework for above- and below-ground biodiversity to flourish
- Building up soil organic matter and thus soil carbon
- Offering new farm diversification enterprises
- Making agricultural landscapes more resilient
- Recording climate history

Agroforestry involves a wide range of trees that are protected, regenerated, planted or managed in agricultural landscapes as they interact with annual crops, livestock, wildlife and humans. Trees essentially provide two things: products and services.

Tree products include: fruit, nuts, oils, beverages, gums, resins, latex, flavours, leaves for food and nutrition, fodder for livestock, timber, fuelwood and biomass for energy production, and medicines that treat disease.

Besides producing products, trees also provide services such as: being a host to edible insects, bee habitats for pollination, carbon capture, shelter from wind and sun, modifying micro-climates, nitrogen fixation, increased soil carbon, erosion control, refugia for biodiversity, and better regulation of water, including groundwater recharge.

Most trees have multiple uses, including cultural ones, and typically provide a range of benefits. They have also been used as land boundary markers and to confer land use rights even if not full ownership of land. Trees are fundamental for land regeneration to improve soil health.

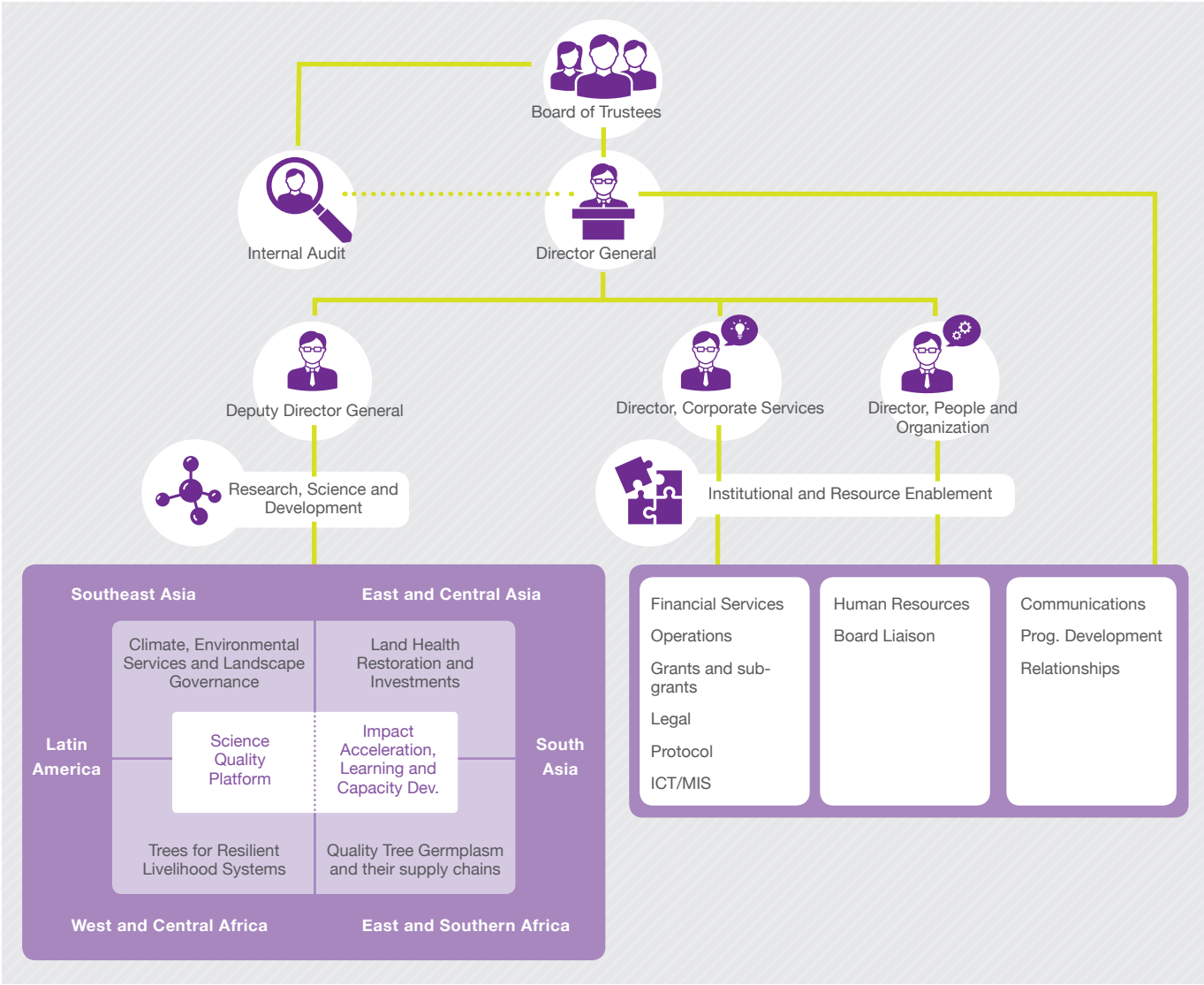
To derive the best utility from agroforestry interventions it is considered best to design and implement research for development that accepts that we are dealing with complex adaptive systems. This requires research to be embedded within development investments and interventions that are prepared to ‘learn as they do’, in order speed up adaptation and lower the risks of failure. The results are better development investments and improved responsiveness on the part of practitioners and implementers alike.

05 Our institutional entities and operations

The following diagram (Figure 2) represents our refreshed organogram depicting how the research, development and enabler dimensions of our institution comprise an integrated, impactful and accountable whole.

In order to effectively govern and manage the Centre and achieve greater success, each of the units in the organogram as well as aggregations of them, set performance targets and metrics which are reviewed annually. These performance measures comprise a performance dashboard which is used to help take management and oversight decisions. Furthermore, the performance targets allow us to compare the cost of doing business with our results to drive better value for money for investors around efficiency, effectiveness, equity and economy.

Figure 2. ICRAF Organogram



During the 40 years of ICRAF's existence, we have worked predominantly through a research lens by building up tools and methods, as well as the provision of knowledge products. Over the next 10 years we will continue to build on this past work with two major shifts of:

(1) More balanced provision of both knowledge products and knowledge services – for some time many commentators in the field of development have remarked that the world has abundant knowledge which just needs to be applied. Whilst we see knowledge gaps and new knowledge needs emerging in agroforestry, we do agree there has been a sub-optimal use of existing knowledge. Much of this sub-optimality could be ascribed more to lack of understanding on how to apply the knowledge than in the inherent utility of the knowledge itself. Thus we see great opportunity in the next 10 years to fulfil a service function to help design and promote the use of new and existing knowledge; and

(2) Capitalizing on our wide regional and country presence with greater demonstration of impact at scale by advancing a 'research in development' paradigm and testing R&D agroforestry hypotheses through large programmes and supporting developing countries to meet their 2030 goals. This involves linking the science of discovery to the science of delivery, or as some put it, connecting the first mile with the last mile. These efforts also seek to align with collective actions of the CGIAR at individual country level.

ICRAF's theories of change and changing theories

In order to drive our research towards measurable outcomes and impacts ICRAF requires all its projects to test one or more of the following three types of hypotheses, which are:

A. Theories of change understanding: A family of hypotheses that revolve around explanations of how the world and its problems are changing in order to focus research on areas that are most likely to be amenable to the kind of change that would deliver the desired outcomes and impacts.

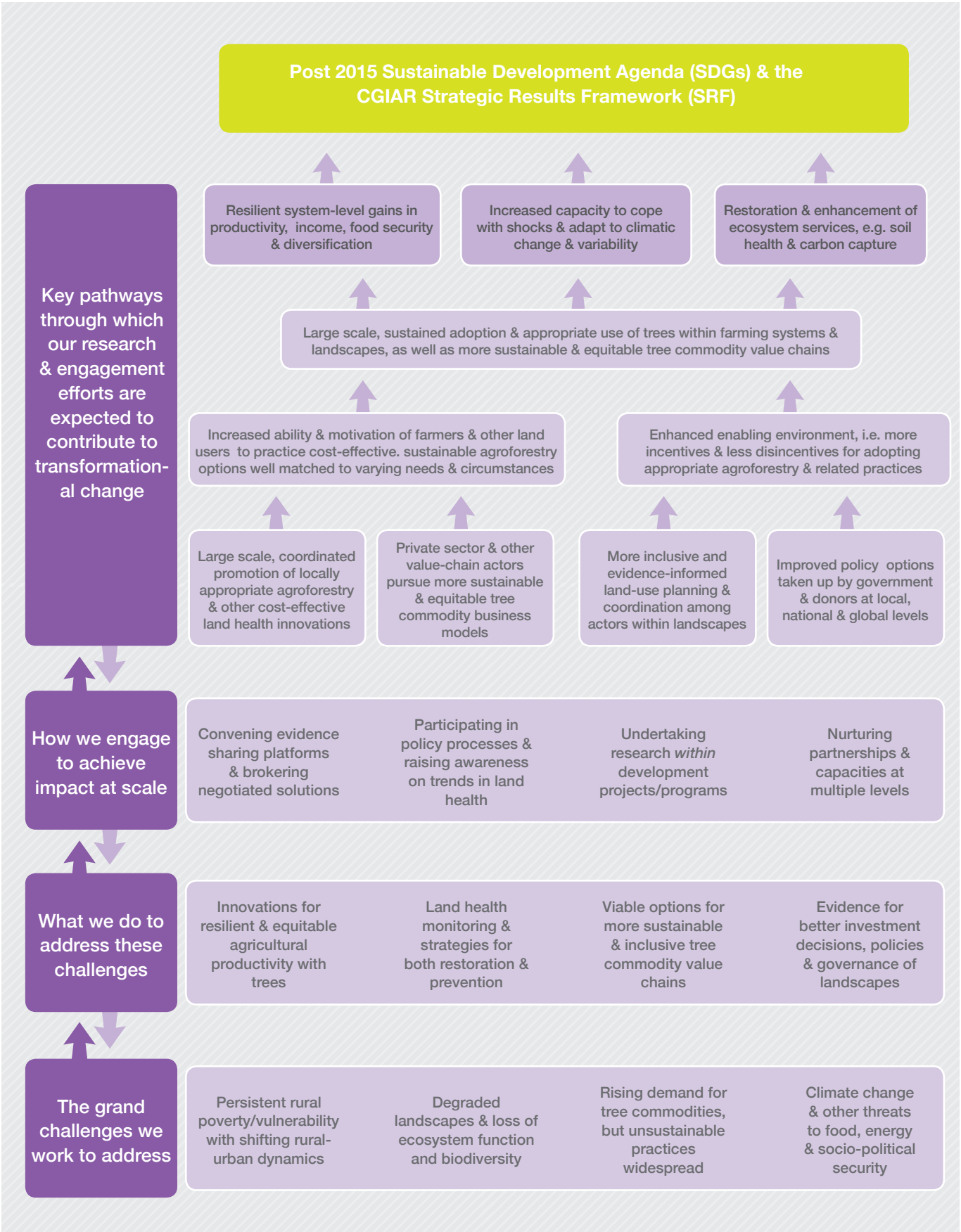
B. Theories of place: Hypotheses related to the way geographic, biophysical, social or economic contexts affect our ability to deliver desired development impacts, and consequently what might be done about this.

C. Theories of intervention success (or induced change): Hypotheses that lay out the impact pathways between investment and expected outcomes – the plausible causal links that justify making research (or development) interventions in the ways proposed.

We recognize that to adequately combine the research and development components to accelerate impact we need to better frame our work around both research hypotheses and/or development hypotheses. In essence, unless our commissioned work is testing a premise, a knowledge gap, an assumption, or an intervention option then it should probably not be undertaken by us. Our intention is to frame the research and development hypotheses around one or more of the six key domains of productivity, profitability, environmental sustainability, social inclusion, good governance and sound management. As we develop these hypotheses and link them to performance metrics it should help us with others to deliver more impact at scale. Yet we can only do this at scale through broader and more inclusive partnerships.

Within this overall hypothesis-framed approach, ICRAF employs an overarching theory of change (Figure 3) which explains how key pathways contribute to the transformational changes we seek.

Figure 3. ICRAF's Overarching Theory of Change



Priority themes and their key elements

The research, development and impact evaluation agenda of ICRAF are focused on four priority research and development themes (RDTs) which integrate across our regional and country operations, as well as our laboratory and office-based analytic work. We recognize that we are currently strongest in the biophysical sciences and advancing these themes will need us to boost our social science competencies in order to fully deliver on this Strategy. The four priority themes are:

1 Theme: Improving governance of tree crop landscapes for resilient green economies, climate change and sustainable environmental services

The aim of this theme is to enable transformative change in the delivery of the SDGs at global, national and landscape scales. This is achieved through knowledge and evidence-based innovations in the value chains of key tree-based commodities, and in the functioning of landscapes in which these tree commodities are produced.

The theme has four sub-themes arranged as follows:

- Tree-Crop landscapes and environmental services;
- Tree-Crop landscapes and climate change;
- Tree-Commodity landscapes and green economies; and
- Governance, policies and institutions for greening tree-crop landscapes;

Together the four sub-themes contribute to six major outcomes, namely:

1. Increased tree-crop productivity by at least 50% for 5-10 million smallholder farmers in the humid and sub-humid tropics;
2. Incomes of tree-crop commodity farmers doubled for at least 10 million farmers;
3. At least 20 tree commodity plantation companies adopt and integrate sustainable intensification practices at farm and landscape scales in 5 countries;
4. At least 10 sub-national level jurisdictions adopt and implement sustainable landscape approaches;
5. An open access transdisciplinary knowledge hub for powering the transformation of tree commodities in the SDG agenda;
6. A monitoring hub for tree-crop contributions to SDGs at multiple levels (global, regional, national and sub-national/landscape level).

2 Theme: Land Health Evaluation, Restoration and Investment Decisions

Our Land Health Decisions theme aims to support the growing political momentum for large-scale commitments to prevent land degradation, and to restore or regenerate degraded natural resources and ecosystem services. This will contribute to an unprecedented change in national and global agendas, and a unique opportunity for research to influence policy and action.

The theme contributes to the ICRAF Strategy by supporting wise stakeholder decision-making on climate-smart land management options that work towards a more equitable world where all people have viable livelihoods supported by healthy and productive landscapes. These options include harnessing the multiple benefits trees provide for agriculture, livelihoods, resilience and the future of our planet, from farmers' fields through to continental scales.

The goal of Land Health Decisions is to improve evidence-based decision-making on land health management, by harnessing the latest scientific and technological advances for providing appropriate data and its interpretation towards optimal environmental and development outcomes. The target domain is farming landscapes in lower income countries across the tropics, with emphasis on Africa, South Asia, and East and Central Asia. Impact pathways are through: (i) policies catalyzing change through guiding policy

decisions and demand-led research; (ii) investments supporting change through joint priority setting, evaluation and monitoring; (iii) awareness creation through global agenda setting and networking; and (iv) supporting uptake through participatory research and capacity development.

The theme has three sub-themes comprising:

- Land Health Surveillance, an evidence-based framework for helping stakeholders better plan, monitor and evaluate interventions for preventive and restorative actions.
- Soil Health and Carbon Restoration which focuses on soils and the ecosystem services they provide, including their capacity to sequester carbon and store and regulate water and nutrients.
- Decision Analytics which involves wise planning and evaluation of land restoration options.

The three sub-themes target the following outcomes:

1. National and regional partners in over 20 countries have improved capacity to manage land degradation risks.
2. At least 20 countries and sub-national jurisdictions implement effective land restoration practices.
3. Better targeting of soil fertility management and climate-smart agriculture programmes in 20 or more countries.
4. More than 1,500 researchers globally use our tools and databases for soil-plant spectroscopy and decision analysis.

3 Theme: Resilient productivity and profitability of agricultural systems with trees

The Systems theme aims for more productive and sustainably-managed tree and forest cover across the tropics, contributing to people realizing better livelihood outcomes and thereby reducing hunger and poverty. Where appropriate, it seeks to embed systems research in development praxis to develop diverse and inclusive agroforestry options. These options help better manage tree and forest cover, enabling people to realize better livelihood outcomes including higher incomes and greater food and nutrition security.

This theme seeks to increase our understanding of how better management of tree and forest cover can enhance people's livelihoods across the tropics, including consideration of socially differentiated groups of people (women, young people, different ethnicities).

The theme has five sub-themes comprising:

- The science of scaling (development and application of the options x context approach) in Africa, Asia and Latin America to match options to fine scale variation in sites and farmer circumstances.
- Improving returns from smallholder timber, food, fuel, fodder and NTFP production and marketing, and appropriate policies required to unlock their potential.
- Rejuvenation and sustainable intensification (diversification) of tree crop commodity production systems.
- The role of trees in system intensification of dryland and sub-humid agriculture.
- Functions of trees in improving the productivity and sustainability of livestock production and animal welfare.

The expected outcomes of this theme are:

1. Two million households reached by development partners using systems theme options and affected by policy changes that enable adoption of systems theme livelihood opportunities.
2. Access of over 500,000 people to systems theme technologies, market interventions and/or policy or institutional innovations that can demonstrably increase their income by at least 25%.

3. At least 350,000 smallholder households with access to systems theme innovations that can demonstrably improve food production and dietary diversity.
4. Five million hectares of land reached by systems theme innovations that can demonstrably avoid degradation, restore productivity of degraded land and improve equity.

4 Theme: Tree Productivity and Diversity - Realizing economic and ecological value from tree genetic resources

Tree productivity and diversity aims to deliver on the best science and best proofs of concept required for safeguarding tree diversity, domesticating trees and delivering suitable tree planting material to growers. This falls within an overall framework of sustainable supply chains for enhancing social, economic and environmental benefits. Through co-research and co-development of decision support tools and by capacity building, stakeholders are better able to define priorities, select methods and improve and implement practices and policies.

This theme will boost the availability and access to quality tree-planting materials (foods, fodder, timber, medicinals, etc.) suited to location and purpose which are serious global constraints to tree planting. It achieves this by co-developing effective and affordable methods, technologies (including clones and varieties), gender-responsive guidelines, decision-support tools and proofs of concept in partnership with relevant institutions and networks. Under this theme work on the African Orphan Crops Consortium is also undertaken which supports the application of advanced breeding techniques to a wide variety of agroforestry trees and annuals and is designed to improve and enhance nutrition in Africa.

The Trees theme has three sub-themes which include:

- Promoting diversity through managers and policy-makers adopting knowledge, decision support tools, practices and monitoring methods developed to promote use and conservation of tree diversity (intra and interspecific for trees of different functional uses, i.e., timber, food, fodder, medicinals, etc).
- Breeding and value chains of agricultural and horticultural crops with R&D and private sector partners adopting cost-effective selection and breeding approaches for impacts (e.g. CC adaptation, nutrition, income, etc).
- Delivery systems involving private companies, national governments, extension services and SMEs who adopt cost-effective and equitable tree-planting material delivery approaches.

The theme and sub-theme work under Trees will produce the following outcomes:

1. National partners have established new breeding/production seed orchards for the multiplication of quality planting materials for at least 20 tree species globally;
2. Policy-makers have incorporated appropriate certification standards for quality tree germplasm into delivery systems in at least 10 countries;
3. National extension partners, private companies and others involved in large-scale agroforestry and restoration initiatives in at least 10 countries have adopted best practices for sourcing quality tree planting materials;
4. ICRAF Genebanks will support global and regional strategies for tree genetic resources conservation of at least 10 globally-important and 100 regionally-important food or income-generating tree species;
5. Business plans will be developed to guide investments, value chain governance product development and value addition for at least five prioritized tree species.
6. Guidelines and decision-support tools on domestication approaches will be adopted by national research partners and NGOs in at least 10 countries.

Cross-thematic initiatives

ICRAF is conscious of the need to avoid silos and independence of its four priority Research and Development Themes. We further see the need to work across multiple CRPs within the CGIAR SRF. Accordingly, we plan and execute much of our work around cross-thematic and cross-programmatic initiatives. These in themselves are not distinct but rather inter-dependent topics within a wider development setting. These initiatives are typically: (a) complex; (b) require ICRAF and partners to work in tandem; (c) inter- and trans-disciplinary; (d) not time-bound; or (e) geographically constrained to small areas. The initiatives may evolve and expand in number over time as new demands, evidence, techniques and opportunities emerge.

As an example, ICRAF is working on the following two cross-thematic initiatives:

1. **Tree crop commodities** - Many major tree crops, such as cashew, cocoa, coconut, coffee, gum arabic, oil palm, rubber and timber, are cultivated predominantly or significantly by smallholders. Together they cover 80 million hectares and earn over US$70 billion annually. And most of these small-holder plantations occur as diversified agroforestry systems. Yet, most tree crops have lagged behind programmes involving cereals, pulses, roots/tubers and livestock in terms of awareness, prioritization, investments and conducive policies. A new approach is needed to embrace the entire tree crop landscapes and value chains and not individual farms, villages or districts, or individuals markets. The new approach also calls for long-term co-investment, co-location and co-design of plans, solutions and actions amongst the entire array of stakeholders. These stakeholders must include government, investors, farmers, coops, input suppliers, NARIs, IARCs, NEXIs, NGOs, aggregators, third-party verifiers and processors.

2. **Land use management** – The total global land area is principally made up of: rangelands and pastures (2.8 billion ha); tropical forests (2.2 billion ha); temperate forests (2.0 billion ha); deserts (1.9 billon ha); croplands (1.5 billion ha); wetlands (1.3 billion ha); and urban areas (0.8 billion ha). These land uses are often not discrete and occur in mosaic landscapes. Planning, resourcing, managing and monitoring management of these landscapes is often non-deliberate and by chance. We believe that an agroforestry frame using integrated concepts allows alternatives, interactions, trade-offs and returns to be better considered. This is crucial for land degradation and land restoration efforts across the spectrum of assessments, designing solutions, targeting interventions and impact evaluation.

Other cross-thematic areas under development include nutritive landscapes, the SHARED approach, rainwater harvesting and utilization, rural social inclusion and bio-energy.

Geographic scope of our regional and country agendas

To ensure that our research for development is properly grounded, we operate six regional programmes in Sub-Saharan Africa, Asia and Latin America. These are all regions where the problems of development are severe. In these regions and countries we are not only dealing with very complex and diverse contexts, we are also dealing with varying and variable needs of our clients, partners and beneficiaries. Our presence in about 28 countries of these regions is guided by where past experience and partnerships overlap with opportunities to deliver generalisable products and services and have the potential to be scaled up to benefit the people and agricultural systems in those countries. This means going beyond beneficiaries directly reached by the research.

The process of grounding our work in this way is the result of four decades of trial and error. We have not always got it right; partly because of the complexity of these situations, partly because we were naïve about the importance of having the right partnerships. Time has taught us, but so has our improved approach to delivering reliable solutions: by grounding our 'theories of change' in equivalent 'theories of place' – how geographic contexts and fine scale variation can change outcomes – we are in a better position to offer products, services and advice that truly meet the need of our partners. By explicitly acknowledging the importance of history, context, complexity and partnerships in all we do and being physically located in those regions and countries, we have developed the kinds of knowledge and understanding that has, and we expect will continue to, allow us to offer meaningful, transformational results. Together with our partners, clients and beneficiaries we expect to deliver tangible proof that purposefully selected and rigorously tested interventions – as varied as improved farmer practices, improved planting material, or an investment in a value chain or a new policy – can deliver local and scaleable results in similar contexts.

East and Southern Africa (regional office in Kenya)

Aligned with the African Union's Malabo Declaration of June 2014 on 'Accelerated agricultural growth and transformation for shared prosperity and improved livelihoods', the Eastern and Southern Africa Region (ESAf) currently works in five countries to deliver: (i) Support for quality germplasm supply systems especially targeting trees for fruits, energy and fodder, (ii) Diversified and supportive on-farm tree management, including product processing and marketing, (iii) Effective demonstrations of agroforestry systems at scale, including dissemination of science-based evidence at both farm and landscape scale (iv) Ecological services with a focus on water management under agroforestry systems and v) Strengthened and mobilized partner capacity including joint planning. Areas of focus include (a) Better engagement of youth and women in agroforestry-related businesses, (b) Improvement of cross–sector analyses and collaboration and (c) Improvement of communication, especially in local media and local languages. Cutting across all of these is support to policies that seek to mainstream agroforestry principles and practices into national development plans, strategies and projects and the facilitation of functional country and regional (e.g. EAC, SADC, IGAD), agroforestry networks.

The other five regions focus on most of the same kinds of issues, with regional variants and priorities. It is on the latter that we focus from here on.

West and Central Africa (regional office in Cameroon)

This vast region contains two main agro-ecological zones of (i) the dry Sahel zone, a semi-arid landscape stretching from Senegal to Chad; and (ii) the Humid Tropics (HT), spreading along the coast and extending to the central part of Africa. Activities in the region focus on the role that Farmer-Managed Natural Regeneration plays in delivering agricultural systems that can resiliently improve productivity and livelihoods in the parklands of the Sahel. We also explore how improved planting materials are affecting the contributions of key tree crops to the GDP of humid countries while delivering benefits for climate change and income.

Southeast Asia (regional office in Indonesia)

The Southeast Asia region's priorities are aligned with the Vision and Strategic Plan for ASEAN Cooperation Food, Agriculture and Forestry towards 2025, in which expansion of agroforestry is mentioned as a means to increase resilience to climate change, natural disasters and other shocks.

ICRAF's work in the region contributes to land-use planning for low-emissions development and multiple environmental services and ecosystem services' models, policy development and business cases.

New areas of importance are 'green growth' initiatives that bring together all sectors, including the financial sector, such as is the case with the Tropical Landscapes Finance Facility, which was launched in Jakarta, Indonesia in October 2016. As in other regions we continue to make headway with improving policies and laws, as we did in the case of the revision of the National Forestry Law of Viet Nam.

East and Central Asia (regional office in China)

The newest ICRAF region now covers East and Central Asia. Here, ICRAF operates through a unique partnership with the Centre for Mountain Ecosystem Studies (CMES), a joint laboratory with Kunming Institute of Botany, Chinese Academy of Sciences, and the joint laboratory on Agroforestry and Sustainable Animal Husbandry with the Institute of Animal Science, Chinese Academy of Agricultural Sciences in Beijing. This region leads ICRAF's contributions to landscape restoration after mining operations have ceased, the development of mountain agroforestry systems and a focus on plant species that live under the canopies or in the root systems of trees, such as fungi.

South Asia (regional office in India)

South Asia Regional Programme (SARP) is based in New Delhi, India. The programme places a strong emphasis on implementation with and through the national agricultural and forestry research, education and extension systems of the partner countries including government and non-government organizations, universities, corporate companies, and civic and advocacy bodies. This has resulted in innovative partnership arrangements among CGIAR Centres, the national systems and more recently, enterprises engaged in Corporate Social Responsibility. Our regional team was instrumental in supporting the emergence of the world's first National Agroforestry Policy, in India. The roll-out of this policy and its adaptation in neighbouring countries remains a major focus of the team – demonstrating the importance of presence and context in the delivery of appropriate and relevant solutions and options.

Latin America (regional office in Peru)

The Latin American Region mainly focuses on climate change and applying systems-thinking to livelihood and production methodologies in an environment that is dense with organizations with the capacity to carry out effective research for development. Although poverty remains a problem in pockets of agricultural systems in Central America, the Andes and the Amazon, by far the greatest demand for ICRAF's research comes from the development of effective agroforestry and tree crop systems that can also deliver climate and environmental services benefits. Thus, there is an increasing focus in supporting commodity supply chains that are tree crop-dependent, to also comply with climate or restoration initiatives.

Country Offices

In combination with the six regional offices we have Country Offices nested within regions which are classified as either (a) Full Country Offices; or (b) Country Representation Offices.

Full Country Offices have a complete complement of ICRAF research, development and enabler staff. These offices are where we have: (i) formal hosting agreements with the national government or umbrella organization giving us legal standing; (b) formal MOUs with national institutions; (c) demonstrated demand for agroforestry and specifically ICRAF's knowledge products and services; (d) annual budget exceeding $1 million. Most of these offices are also part of the CGIAR Site Integration initiative.

ICRAF also operates Country Representational Offices with a smaller R&D team. These staff may be international or national in grade, although are often seconded from and working within national partner institutions. These offices may in time qualify as Full Country Offices or assume less importance as grant projects end. New countries may also emerge for time-bound projects.

Table 2. ICRAF country offices

REGION	FULL COUNTRY OFFICES	SMALLER COUNTRY REP OFFICES
East and Southern Africa	Kenya, Ethiopia, Uganda, Tanzania, Malawi, Zambia	Rwanda
West and Central Africa	Cameroon, Mali, Cote d'Ivoire	Burkina Faso, Niger, Sierra Leone, DR Congo
Southeast Asia	Indonesia, Philippines, Vietnam	Thailand, (Myanmar)
East and Central Asia	China	Kyrgyzstan
South Asia	India, Sri Lanka	Bangladesh, Nepal
Latin America	Peru	Brasil, Costa Rica

In addition to the 28 countries listed above, we also interact with several other countries through our regional hubs and HQ offices. We see a need for regular review of our country presence to avoid being over-stretched and also responding to new priority needs.

Research and Development Support Platforms

To support the work of the four Priority Themes and six Regional Programmes, ICRAF maintains two support platforms, namely: (i) Science Quality Platform - comprising aspects of research and data design, knowledge management and geospatial analyses; and (ii) Impact Evaluation, Acceleration, Capacity, Learning and Partnerships.

Science Quality Platform

As a specialized service under the authority of the DDG-Research, the Science Quality Platform (SQP) provides guidance and support to ICRAF scientists and their partners. The platform was created to foster research excellence and high quality science delivery in our work. The SQP aims to capture and document approaches and best practices for bringing more transparency and discipline to the research process by fostering principles of reproducible research. In order to enhance science quality, the SQP assists staff and partners with relevant plans, methods, tools, procedures, design and reviews. When monitoring science quality, the SQP provides assurance to ICRAF's management on compliance with research policies and procedures. By connecting the business component processes of the research life cycle as continuous value chains, the SQP promotes ICRAF's value proposition through sustained science quality. The Science Quality Platform has three units within it of: Knowledge Management; Geospatial Studies and Research Methods.

The Knowledge Management Unit provides knowledge services to help enhance the Centre's science quality and accelerate the use and impact of its research. Knowledge services and learning processes, together with the related system infrastructure, are designed to embed, enhance or extract value added from the Centre's science-based knowledge. These processes and systems are set up to enable the availability, utility, and value of the knowledge services for both internal use to accomplish Centre goals and objectives and external use to transfer knowledge products and/or services with intrinsic value and potential usefulness to end-users. The knowledge services are intended to be used both professionally within research programmes to benefit their project work and by individuals for personal knowledge management by increasing the capture, use, and sharing of know-how, information, and experience from the Centre's research-in-development efforts. As an integral part of the ICRAF Business Framework, knowledge management is subjected to regular assessments to ensure high-quality monitoring, evaluation, and learning to improve its performance in supplying or fulfilling demands for knowledge services.

The Geospatial Unit works towards the application of GeoScience in real decision contexts, such as climate change adaptation, hydrological effects of changes in climate and land cover, targeting of agroforestry interventions, provision of soil fertility and surveillance advisory services for smallholder farmers, digital soil and land use/cover mapping, and measuring impacts of interventions, all using open source software.

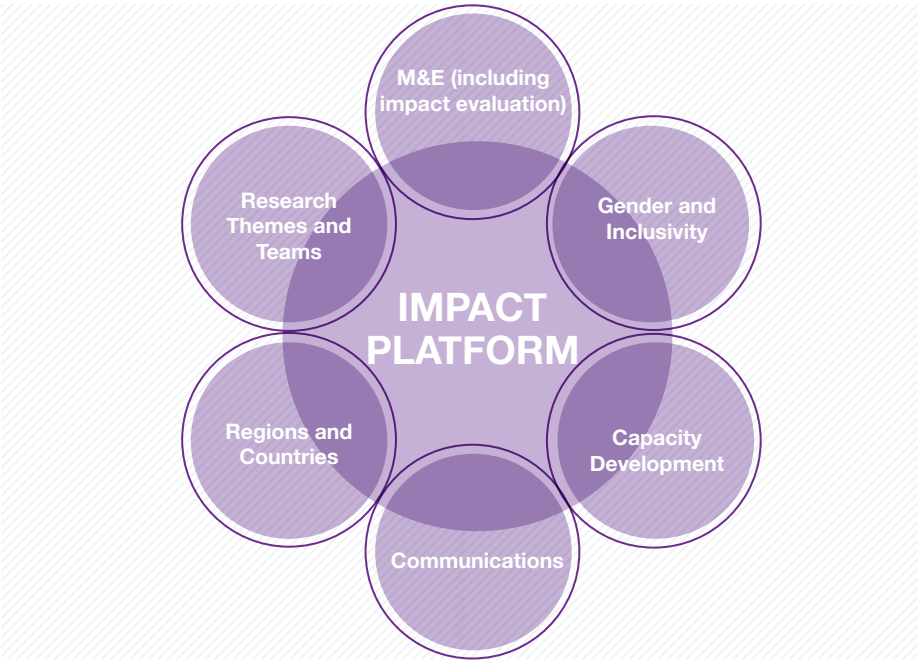
The Geospatial Unit focuses on tools, methods and services around:

- Time-series analysis
- Toolkits for interactive modeling
- Mapping of phenology
- Species abundance mapping
- Species diversity mapping (e.g. trees)
- Vegetation analysis
- Soil mapping (e.g. SOC, pH, etc.)

The Research Method Group operates through an interdisciplinary team based both at HQ and in the regions. In partnership with the SQP, RMG designs, manages, monitors and provides technical support to project development, research design, data management, data analysis and publication of research results. Its main mandate is to contribute to enhancing the Centre's science quality through developing and testing appropriate methods towards building a scientifically rigorous, reproducible, inclusive and robust evidence base for all aspects related to agroforestry. The activities of the group are organized around four major clusters:

- ICRAF projects are based on appropriate research designs and apply high quality research methods to deliver their outputs
- Scientists have access to research quality systems that are helpful
- RMG staff leading or contributing to high value data products, scientific publications, and other outputs that are part of research projects deliverables
- RMG staff leading or contributing to high value data products, scientific publications, and other outputs that contribute scientifically rigorous, reproducible, inclusive and robust evidence for all aspects related to the Centre's strategy, based on experience, lessons learnt and syntheses of work with projects.

Impact Platform



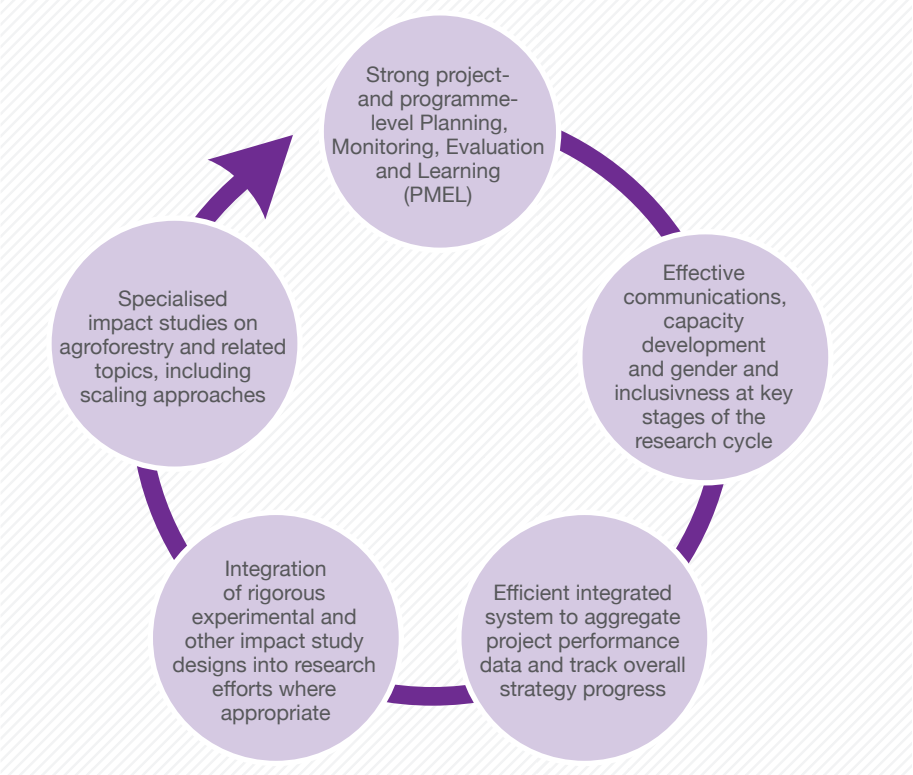
Our ability to effectively fulfil our mission and, in turn, make a significant contribution towards realizing our vision largely depends on the extent to which the new knowledge and innovations we co-generate with our national and global partners are appropriately used by others (e.g. policy makers, the private sector, NGOs and farmers). To this end, ICRAF has put in place a dedicated platform to facilitate this to support, accelerate, and evidence the effective and efficient translation of ICRAF's research efforts into inclusive development outcomes and impacts at the project, programme, and strategic organizational levels.

As a research-for-development organization, we explicitly recognize that our ability to both generate and deliver evidence for development impact necessitates consolidated efforts on a number of fronts. Monitoring and Evaluation (M&E)—or what many organizations have expanded to include Planning, Monitoring, Evaluation, and Learning (PMEL)—is critically important. For instance, if a research effort is not well planned from the onset with a development impact focus, monitoring and evidencing progress towards delivering such impact will likely prove to be difficult. Credibly evaluating the extent to which a research effort has made a positive difference in the 'real world'—through rigorous, yet fit-for-purpose, impact evaluation methods—is also essential for both accountability and learning purposes. The more we can learn about what works and what does not in facilitating the 'research to impact pathway', the more effective we can become in both accelerating and intensifying our delivery of development impact and value-for-money more generally.

However, there are other important functions housed within our organizational structure which are also key to facilitating the research to impact pathway. Stakeholder engagement, partnerships, and capacity development, for instance, are needed to build ownership among targeted end users and other stakeholders over the research process and facilitate the appropriate use of key research findings. Effective communications is also critical, so that end users, NGOs, the public, and other stakeholders understand our key recommendations and the research processes that led to them. We also strive to ensure that our research is designed, implemented, communicated, and scaled out in such a way that any resulting impacts are inclusive and equitable, thereby bringing gender and inclusion into the picture. Finally, to be effective, key functions of the platform must be embedded, owned, and driven by our research teams, rather than viewed as an imposition from the outside (e.g. solely our headquarters teams).

ICRAF's Impact Learning, Evaluation, and Acceleration Platform (iLEAP), then, is not a standalone, independent entity or unit but a platform that brings together and interfaces with multiple relevant organizational functions (including the individuals responsible for these) to drive ICRAF's development impact agenda.

Figure 5. Five strategic pillars underpin ICRAF's Impact Platform



ICRAF's main value offer

Over the past four decades, ICRAF has built up an unrivalled set of partnership networks, tree germplasm collections, knowledge base, institutional capacities and technical expertise. These can be broadly categorized as knowledge products and knowledge services. A full list of more than 6,200 knowledge products is provided on our webpage (outputs.worldagroforestry.org/).

Going forward we see four main value propositions for our work based around:

- Providing Evidence and Analyses
- Making available Technical and Social Solutions
- Assistance with Design, Decisions and Delivery
- Developing Capacities, Convening and Partnerships

To capitalize on these value offers we feel it essential to have structured learning at multiple, often nested, scales across a wide variety of situations and contexts. This is the first major step in the process of ensuring that any value generated by the research is likely to be resilient in the face of shocks. This is 'systems research' within agriculture that promotes development. Grounded in the realities of those it seeks to benefit, it must deliver both actionable and measurable results where risks of failure are explicit and honestly considered. We consider this the cutting edge, an edge that helps us slice open windows of opportunity at the heart of failing land-use systems and value chains, and insights into systems that appear to be functional but are in danger of tipping over.

Ultimately, our aim is to generate lasting, measurable value for our clients and beneficiaries through cutting edge, actionable and integrative agricultural systems research on agroforestry. Our main entry point and strength for this is our understanding of the productive role trees can play in agricultural landscapes. We do this through our four priority themes and cross-thematic initiatives. The thematic work at an activity, output, programme or project level brings together individual or different combinations of knowledge products and knowledge services as required.

The indicative elements of these four value offers are described below in Figure 6.

Figure 6. ICRAF's Four Main Value Offers and their Indicative Elements

Our core values and operating principles

ICRAF undertakes its work within the context of four core values and ten broad operating principles.

The core values are:

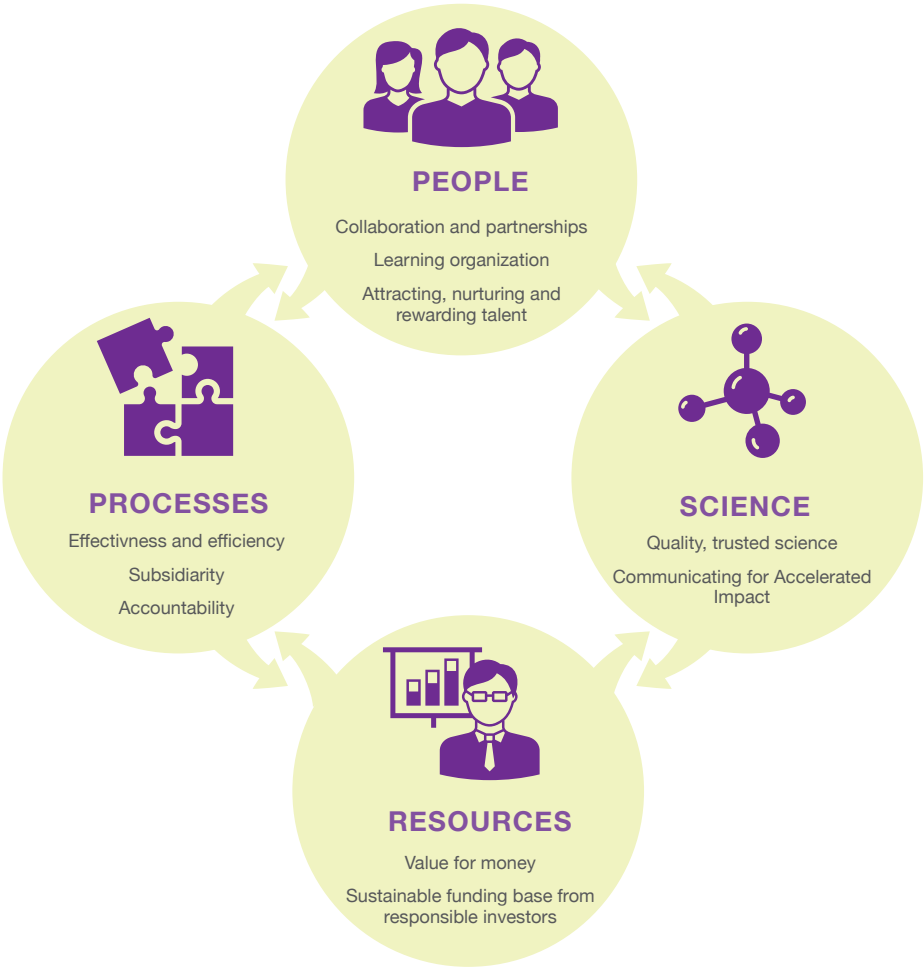
i **Professionalism.** We uphold the principles of integrity and trustworthiness throughout our work. We aspire to achieve and hold ourselves accountable for the highest standards of professionalism in our research, communications, fiduciary management and operations; high levels of personal, professional and governance integrity; transparency and equity in our methods and approaches; and fairness in sharing credit.

ii **Mutual Respect.** We commit ourselves to an environment of mutual respect and collaboration with partners, donors and colleagues. We embrace and genuinely respect all those with whom we work, irrespective of nationality, gender, religion, age, profession or workplace seniority. We celebrate the achievements of our colleagues and partners. We support a work environment that fosters trust, teamwork and diversity.

iii **Creativity.** We promote a culture of innovation, continuous learning, problem solving and independent thinking. We believe that success in living and fostering these values is fundamental to maintaining a vibrant organization, contributing to science and achieving impact.

iiii **Inclusiveness.** We strive to be highly inclusive as a value and an organizational practice, providing an open environment for full participation, a sense of belonging, mutual commitment and supportive engagement for all.

Figure 7. Our Operating Principles



These four core values underpin our operating principles across people, processes, science and of:

a **ONE ICRAF**. As ICRAF staff, we understand that in order to be successful, we must collectively work towards our common vision through quality interactions across scientific disciplines, regions, and between people conducting and enabling research and scaling.

b **Collaboration and Partnership.** We recognize that our commitment to tangible improvements in the world requires us to partner with many different kinds of organizations and individuals and we therefore pursue collaborative research with a range of appropriate partners who share our values and goals.

c **Learning Organization.** We understand that we work in a complex, changing world where uncertainty is constant and requires us to learn, react and adjust quickly and effectively.

d **Attracting, Nurturing and Rewarding Talent.** We consider people our most valuable resource and seek to find and nurture high quality staff and to incentivize and reward excellent performance.

e **Quality Science.** We maintain and equip a strong body of quality and diverse scientists that generates rigorous, reproducible, inclusive and robust evidence that is pushing boundaries of global knowledge.

f **Communicating for Accelerated Impact.** We increase the visibility and accessibility of our research through quality (effective) communications to generate accelerated development and scientific impact.

g **Value for Money.** We strive to deliver value for money by monitoring and reporting on tangible and intangible returns on investments.

h **Efficiency & Effectiveness.** We track and reward enhanced operational efficiency and transparency that enables effective delivery of core business systems while minimizing cost and risks. At the same time, we recognize it is not enough to be efficient and our investors and clients expect us to also be effective in realizing the changes and results we promise.

i **Accountability.** We will hold ourselves accountable for our actions and decisions and the way we conduct ourselves at all times, and in all parts of the organization.

j **Subsidiarity.** Our decisions will be made at the lowest level where resolution can be effected responsibly, with accountability by those who have authority. Further we delegate authority and responsibility to all levels as appropriate and hold people accountable for using that authority wisely.

05 ICRAF's strategy: Making it happen

The primary purpose of the Strategy is to provide overall direction and guidance to the institution and its staff, whilst avoiding being overly prescriptive or soon becoming outdated. As such the Strategy is supported by policies, guidelines, systems and processes operating at sub-annual, annual and supra-annual cycles. Our intention is to use the Strategy to help provide a focus and aggregation of effort rather than a collection of small and dispersed efforts. We believe that to have big impact we need to think big and align big.

A learning business framework and business model

To achieve the Centre's vision and mission as well as deliver on its value propositions to stakeholders, ICRAF must continually and deliberately evaluate its business model, business processes and business operations to determine whether they remain formal integrated, adaptive, balanced and fit-for-purpose. Underlying these aspects are the formal policies and procedures, as well as the more informal organizational culture. Much of the organizational culture derives from our values and operational principles.

The **ICRAF Business Framework (IBF)** integrates various elements of the Centre's Corporate Strategy, the business model, performance dashboard and the institutional environment, thereby enabling the effective and efficient development of management systems that adapt to the changing business and operating environments. These systems support prudential oversight of ICRAF's business operations and performance thus providing for sound decision-making and governance. Anticipating change, remaining flexible and innovative are critical for the Centre's success.

ICRAF's Business Model is based on nine elements which partly overlap with the Corporate Strategy. These nine elements are: (i) value propositions; (ii) donor relations; (iii) investor typologies; (iv) dissemination plans; (v) key activities; (vi) key resource needs; (vii) key partners; (viii) cost structure; and (ix) revenue streams. The business model is periodically reviewed and checked when any major change takes place such as alterations in revenue streams or key activities.

The **Performance Dashboard** at ICRAF serves four objectives: (a) understanding where we are as an institute at any point in time; (b) driving performance; (c) revealing trends in direction and rate of performance; and (d) evaluating returns on investment. Each operational unit at ICRAF develops a range of key performance indicators (KPIs) as well as appropriate metrics (dimension and units). These are updated and reviewed by management and the Board of Trustees at monthly quarterly or yearly intervals depending on the KPI.

The **Institutional Environment** at ICRAF comprises two dimensions: risks and controls, as well as informal organizational culture and norms. The formal dimension falls within a set of 35 institutional polices as well as their related guidelines, manuals, protocols and workflows. They are guided by clearly defined authorities and accountabilities, and form the basis for many organizational processes including Internal Audit, Risk Management, linked management information systems (i.e. One Corporate System - OCS).

Risk Appetite and Risk Management

ICRAF operates in complex and diverse environments where it is necessary to accept risks in pursuit of its strategic objectives. ICRAF's risk appetite reflects its overall approach to risk management. In order to successfully implement our Strategy it is important that all decisions and actions taken by ICRAF align well with our risk appetite. Our risk appetite and risk management philosophy is used as we engage with donors, partners and beneficiaries as well as in our own staff and unit workplans.

Table 3. Levels of Risk Appetite

	Level	Definition
3	Engaging	We accept and encourage opportunities presenting risks of failure if the likelihood of risks materializing combined with their potential impact make benefits more than offset losses
2	Cautious	We accept opportunities presenting a risk of limited underachievement if the likelihood of risks materializing combined with their potential impact make benefits more than offset losses
1	Averse	We are not willing to accept excessive risks that would significantly impact achievement of our objectives

ICRAF manages its risks within a risk management policy framework where the top 50-70 institutional risks are identified, assessed and managed effectively to achieve the Centre's goals. These risks fall under one of nine risk areas that correspond as well to Centre functions and performance dashboard areas. Risk appetite can vary by individual risk but an overall risk appetite is applied to each of the nine major risk areas as shown in the table below.

Table 4. Overall Risk Appetite by Major Risk Area

AVERSE	CAUTIOUS	ENGAGING
Governance	Communications	Research*
ICT	Partnerships	Resource Mobilisation
Finance		
Operations		
People		

*Research is shown with an overall engaging risk appetite due to the need to allow failure for learning and stretch goals for scientific investigation. However, within the overall Research area when it comes to social/community research and on-farm research with beneficiaries our risk appetite is averse so as not to endanger their livelihoods.

Based on these nine risk area risk appetites, ICRAF accepts an overall averse-cautious risk appetite.

Partnerships

Partnerships are fundamental to ICRAF's work. Throughout the world, in addition to its 14 sister CGIAR Institutes, ICRAF has over 100 substantive partners with whom it collaborates in long term projects and programmes. Through both the Regional and Country offices we work through strong engagement with national governments and other country based actors (NGOs, CBOs, private sector, other policy/research/development organizations). Our ultimate clients though are men and women farmers (and other land/resource users) from different cultural, social and economic backgrounds. Their roles, responsibilities, capacities and needs shape their perceptions and management of natural resources, the livelihood strategies that they chose to pursue and their interaction with the landscapes they live in. Enabling the production of gender-responsive knowledge and innovations is especially important. Here we recognize the potentially different priorities and needs

of men and women, as well as the inequalities in participation, access and control over resources and benefits that are often based on age, ethnicity, and other factors of social differentiation; and taking these into account in research design, implementation and communication of results.

The predominant partnership model in ICRAF in the past was mainly of a contractor; with the Centre sourcing funds and sub-contracting partners to implement the work. However, this is slowly changing with the availability of more funds for ICRAF to play the role of service provider to other initiatives. However, the future of ICRAF's partnerships is unlikely to be in the sole role of grant manager where ICRAF receives the money and sub-contracts 'partners' to deliver on a given project. More likely a bigger future for ICRAF will be in participating and contributing in broader global and regional dialogues around big themes, where the organization through its excellence becomes a centre of attraction where people will want to go to for advice and for provision of key knowledge products and knowledge services.

ICRAF's role will most likely shift even more towards service provision and strategic leadership in clearly defined areas within the key global topics through its knowledge and competence. This scenario and our 'Research in Development' paradigm means that ICRAF will increasingly integrate itself into the national, regional and global agendas, understand the demand of a variety of actors and networks and will then focus its research and service provision to that demand. The Centre will develop critical core competencies around the global topics, prepare knowledge products which resonate with the demands and position itself as a partner of choice. Examples of the major areas include: landscape restoration, soil carbon, public-private partnerships, tree commodities and value chains, 'research in development' paradigm, and blended finance initiatives.

ICRAF will have to define, more clearly, its value addition to development programmes (e.g. action research to improve development interventions) and to global dialogues and develop these niches further. The organization's core strategic partners would be identified based on the strategic functions and thrusts and consist of organizations which share common interests and commitments, and bigger programmes. The current project-based partnership and grant management model will not disappear, but remain only as part of project delivery.

ICRAF in future will be stronger in following through and evaluating partnerships. It needs to become more rigorous in learning about partnership management through regular reflection with the partners and systematizing a process for reflecting on lessons learned from partnerships. This will include developing effective methodologies for M&E, process documentation and capturing, learning from and sharing knowledge. Partnerships need to be oriented towards a more systematic capture of knowledge on process and knowledge flows.

Financial resources

ICRAF receives its financial revenue from institutional, programmatic and project funding windows. Until 2011, it received approximately 30% core funding through an institutional window. This has fallen to approximately 2% as unfortunately OECD bilateral donors have largely now minimized such funding. Despite limited potential sources in today's declining funding environment, ICRAF plans to prudently seek and pursue flexible funding to build up resources for innovation and new research opportunities.

The CGIAR has developed 12 CRPs for the period 2017-2022. ICRAF is active in five of the CRPs. Total programmatic revenue of CRPs is currently around US$200 million per annum (2017) of which ICRAF expects to receive US$6-12 million annually depending on shifting donor priorities and benchmarked programme delivery. This equates to approximately 5-15% of the Centre's total revenue. These funds are viewed differently by different donors as either upstream more strategic research funding or flexible funds to leverage other co-financing project funds.

Project-based funding either as direct grants to ICRAF or sub-contracted awards from third parties make up the bulk of the funding (i.e. > 85%) at the beginning of this Strategy period. These projects mainly fall into one of three types: (a) open and competitive calls for proposals often with a less than 5% probability of success; (b) phase (n+1) of an existing phase (n) grant – although multiple phase grants are becoming less popular with donors; (c) invited calls where ICRAF has a unique or advantaged chance of securing a grant based on an invitation from a donor or a partner.

In the immediate future we see difficulties in maintaining existing resource mobilization patterns and institutional budget growth due to: dwindling total ODA; European migration crisis; CGIAR uncertainties and changing national partner expectations and capacities. Thus we foresee minimal budget growth for the first quarter to half of the Strategy followed by a strengthening thereafter as our knowledge products and services are more greatly sought.

Future strengthening of ICRAF's budget will depend on communicating our results as much as the research process we undertake. It will also depend on bolstering our reputation with large climate, land restoration, nutrition or private sector initiatives. Third party endorsements from investors and the private sector should also help to strengthen our reputation. Sourcing harder-to-secure funds will also require a stronger effort on communications and convening of events – both stand-alone events and those linked to resource mobilization. New blended finance opportunities can also generate a good reputation and financial returns for ICRAF.

To successfully implement this ambitious refreshed Strategy in a resource-constrained world, we will also have to be smarter at in-kind contributions, business incubators, secondments and leveraging.

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