GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

IFAD
Investing in rural people

Resilient
FOOD SYSTEMS

Resilient Food Systems

Programme highlights 2018-2019

AGRA Growing Africa's Agriculture
Bioversity International
CONSERVATION INTERNATIONAL
FAO
THE WORLD BANK
UNDP
UN environment
UNIDO
World Agroforestry

Resilient Food Systems Highlights 2018–2019

| December 2019 |

Design and Layout: Debra-Jean Harte and Jodie Watt

Editing and Production: Sabrina Chesterman, Rodrigo Ciannella and Jonky Tenou

For more information: www **resilientfoodsystems.co**
Rodrigo Ciannella | R.Ciannella@cgiar.org
Jonky Tenou | Y.Tenou@ifad.org
Jean-Marc Sinnassamy | Jsinnassamy@thegef.org

Cover photo: © Georgina Smith, Hugh Rutherford (CGIAR Photography)

Produced by World Agroforestry (ICRAF)

The Resilient Food Systems programme is enhancing long-term sustainability and resilience for food security in sub-Saharan Africa.

Photo: © Olivier Asselin (FAO)

Smallholder farmers are supported to strengthen soil health, access drought-tolerant seeds, adjust planting periods and cropping portfolios, and enhance on-farm agrobiodiversity.

Photo: © Georgina Smith (CGIAR)

Contents

Foreword

GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

Sub-Saharan Africa is faced with unprecedented challenges through the coming decades. The demand for food will dramatically increase to meet the needs of a growing population, which is projected to reach 2.6 billion by 2050. Yet the region has been identified as one of the most vulnerable to climate change, because of the inherent rainfall unpredictability. Furthermore, smallholder farmers that represent 80% of farms and account for most of the region's food production, are extremely vulnerable to environmental degradation, especially in the dryland regions where the threats are exacerbated by climate change and variability.

While these challenges are not intractable, they will require innovative solutions applied through a coordinated approach to maximize potential for impactful outcomes at scale. This was an important rationale behind the program on fostering sustainability and resilience for Food Security in Sub-Saharan Africa, which was launched by the GEF to advance the integrated approach to tackling environmental degradation in smallholder agriculture. The program consists of a 12-country partnership – Burkina Faso, Burundi, Ethiopia, Ghana, Kenya, Malawi, Niger, Nigeria, Senegal, Swaziland, Tanzania and Uganda – jointly engaged in drylands where the threats of environmental degradation and food insecurity are greatest.

IFAD is the lead agency for the GEF-supported Resilient Food Systems programme and is working in partnership with Conservation International, UNEP, UNDP, and UNIDO. The combined strengths of these institutions enabled the program to engage further a wide range of technical and development partners, including two Centers of the Consultative Group on International Agricultural Research (Bioversity and World Agroforestry) and the Alliance for a Green Revolution in Africa (AGRA). The programme is set up for strengthening institutional frameworks for multi-stakeholder engagement, scaling up successful practices and innovations, and monitoring and assessment of global environmental benefits and resilience. The collaborative effort has also engendered an adaptive learning process in advancing the integrated approach, which is key to achieving long-term sustainability and resilience of production systems.

This report covers the first two years of implementation and provides an encouraging overview of activities underway across the 12 countries. It also highlights the considerable scope for learning and knowledge sharing to catalyze large-scale transformation in the drylands, which will help smallholder farmer communities to achieve productive gains with improved management of land, soil, water, and agrobiodiversity for sustainability and resilience.

Gustavo Fonseca

Director of Programs, The Global Environment Facility

IFAD
Investing in rural people

Over the past two years, IFAD has embarked on the Resilient Food Systems programme (RFS) with a commitment to support a systemic shift in African agriculture to enhance smallholder farmers' resilience and achieve food and nutrition security. I am delighted to share our progress in achieving these objectives which stems from the collective effort of our partners at all levels. This report highlights our achievements since June 2017.

In a context of growing complexity and uncertainty in sub-Saharan Africa attributable to climate change and unexpected shocks, the security of food supplies systems remains a main priority for all African countries. Promoting mechanisms for multi-stakeholder coordination, planning and investment in sustainable agriculture at scale and fostering supportive policies and incentives for smallholder farmers to adopt sustainable and resilient practices are key areas of collective action and support that will have greater impact on the ground.

Over the years, IFAD has elevated environmental sustainability and climate change to crosscutting priorities that are mainstreamed throughout its investments in rural areas. The Resilient Food Systems programme through its integrated approach represents an effective platform to aid in the achievement of this mainstreaming objective.

In the face of mounting challenges, I am proud of the fruitful collaboration and partnership between the GEF and IFAD and would like to personally thank all our partners and colleagues who are working hand-in-hand to make it effective.

Ms Margarita Astralaga

Director of the Environment, Climate, Gender and Social Inclusion Division - IFAD

Section 1.

Programme Background

Photo: © RFS Niger

Chapter 1

Background

Food insecurity in Africa is likely to intensify in the coming decades. Demand for food will increase sharply as the population is set to double by 2050 in a region that already struggles with a chronic food deficit, where one-quarter of the population are undernourished. On the supply side, smallholder farmers face increasingly poor soil quality and the lowest crop yields in the world. Climate change is further exacerbating the risks facing agriculture, as farmers have limited capacity to adapt.

Resilient Food Systems (RFS) is one of the three **Integrated Approach Pilots** funded by the Global Environment Facility (GEF). Through RFS, GEF seeks to position the management of natural capital as a priority in ongoing efforts to transform the agricultural sector and ensure sustainable food production in sub-Saharan Africa. **Implementation is led by the International Fund for Agricultural Development (IFAD), in collaboration with 12 African countries and several regional partners.**

RFS has engaged twelve African countries (Burkina Faso, Burundi, Eswatini, Ethiopia,Ghana,Kenya, Malawi, Niger, Nigeria, Senegal, Tanzania and Uganda), all of which are located in the dryland regions of sub-Saharan Africa where the threat of environmental degradation and climate change is a major constraint to food production. The countries are well placed to harness good practices for long-term sustainability and resilience of food production by reducing land degradation and biodiversity loss, recovering natural vegetation and increasing soil carbon.

The five-year programme is committed to **fostering sustainability and resilience for food security in sub-Saharan Africa**, contributing to a paradigm shift in the continent's agriculture: one which emphasises the importance of natural capital and ecosystem services to enhance agricultural productivity.

The programme directly engages 12 countries in sub-Saharan Africa in the integration of natural capital management and ecosystem services through investments that aim to improve smallholder farming and food security.

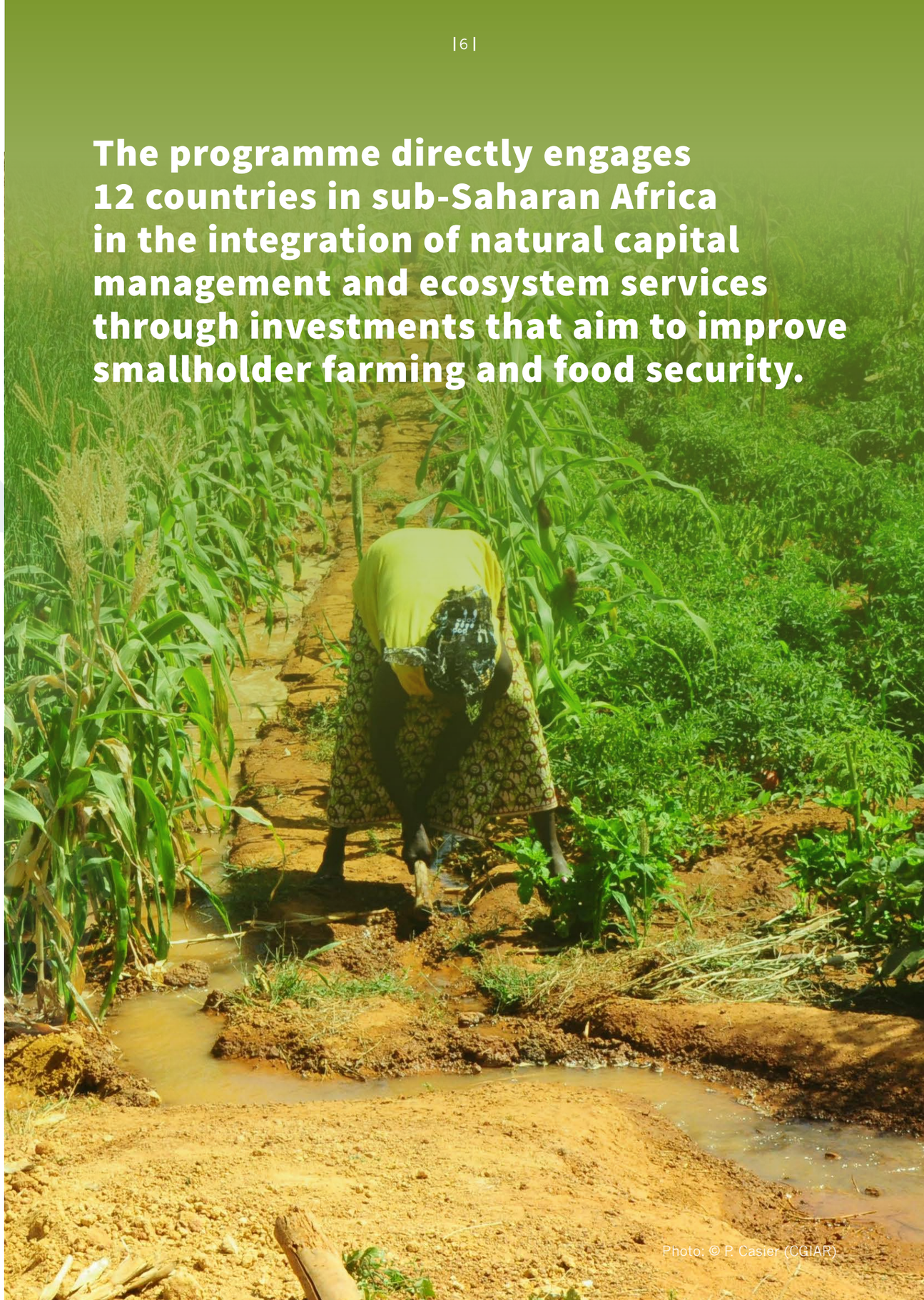


Photo: © P. Casier (CGIAR)

The Integrated Approach Pilots

GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

WHAT MAKES THE **INTEGRATED APPROACH PILOT** (IAP) DIFFERENT

- The IAP programmes are designed to be anchored in geographical contexts that reflect the nature of the drivers and associated threats being tackled: the Food Security IAP programme (RFS), operates in dryland regions where the risk of degradation is exacerbated by effects of climate change.
- The IAP programme is facilitating a 'community of practice' that serves as a platform for joint learning and implementation of an integrated approach to promoting sustainability and resilience across the dryland countries.
- At a system level within a country, the IAP programme approach facilitates joint planning and implementation by the government ministries dealing with agriculture, natural resources and environment, with engagement by diverse stakeholders from the development community, private sector and civil society.
- It initiates dialogue among the various entities where it does not yet exist, and develops joint action where it does exist.
- The stakeholder engagement process has emerged as an important programme addition that in the future will lead to more inter-sectoral integration, for achieving system-level changes and economies of scale.
- Bringing the different stakeholders that work in the landscapes together (governments, private sector, communities, financiers/investors, etc.) will lead to changes at system levels – policy, regulatory and practice levels, that can then lead to the required on-the-ground change at 'local' levels.
- Incremental financing for global environmental benefits leads to system change.

Resilient Food Systems (RFS)

Resilient FOOD SYSTEMS

The programme is designed to promote resilience and sustainability among smallholder farmers by promoting sustainable management of the natural resources critical to food security in Africa. By showing the direct linkages and the nexus between healthy landscapes and resilience and food security in a manner that is understandable to decision-makers, land users and farmers, countries are better placed to deliver multiple environment and development benefits while managing trade-offs.

Global Platform for Sustainable Cities (GPSC)

Global Platform for Sustainable Cities

THE CHALLENGE:

Urban areas are growing at an unprecedented rate, with over half of the world's population (nearly 4 billion people) now residing in cities. Rapid urbanisation provides opportunities, yet challenges come in tandem. How cities respond to this fast-paced growth will have a long-lasting impact on the global environment.

THE INTEGRATED APPROACH SOLUTION:

The Global Platform for Sustainable Cities (GPSC) is a partnership and knowledge platform that promotes integrated solutions and cutting-edge support for cities seeking to improve their urban sustainability. The platform currently comprises 28 cities across 11 countries. The GPSC works with practitioners and thought leaders from around the world to develop solutions for sustainable urban growth. Together, our partner cities can advance towards their visions and goals of being cities that are competitive, inclusive and resilient.

Good Growth Partnership (GGP)

GOOD GROWTH PARTNERSHIP

THE CHALLENGE:

Soy, beef and palm oil are considered to be among the biggest drivers of tropical deforestation today. The consequences include the loss of habitats and biodiversity and rising carbon dioxide levels, which contribute to climate change as well as to the degradation of essential ecosystem services such as clean water and fresh air, which we depend on for our very survival. For these reasons, it has never been more important to forge new ways of doing business that enable 'good growth' without the associated environmental consequences of unsustainable agricultural production and deforestation.

THE INTEGRATED APPROACH SOLUTION:

Working with a full range of stakeholders, from small-scale producers to national governments and global corporations, the Good Growth Partnership promotes a holistic approach to sustainability that encompasses entire commodity supply chains. Instead of treating production, demand and investment interventions as separate tracks, the Partnership looks at where the layers of the supply chain integrate and overlap to enhance financial incentives and demand for sustainably produced agricultural commodities. By combining forces, the Good Growth Partnership aims to provide a model of wide-scale systemic reform which capitalises on the strengths of each partner.

Why we need to improve resilience in African food systems

Africa faces a major demographic shift, with the continent's population expected to double by 2050 to an estimated 2.6 billion people.

Africa has 60% of the remaining **uncultivated arable soils worldwide.**

However, extensive land degradation and **unsustainable agricultural practices are underway** and there is a rapid decline in soil fertility.

Climate variability and seasonal extremes threaten food and nutrition security.

Declining yields on small-holder farms in drylands.

Focus on staple foods has trade-offs in the availability and affordability of nutritious foods and impacts biodiversity.

Low agricultural productivity results in low return on investment and income for millions of smallholder farmers that comprise a large part of the food system in Africa.

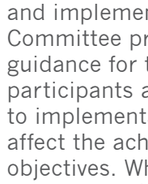
Unsustainable dependence on imports, with Africa **currently importing cereals at a cost of US$20 billion per year.**

Increasing agriculture productivity is a critical ambition for all countries in Africa.

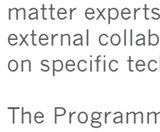
Rural economic development through agriculture needs to play a significant role in creating jobs for the 10–12 million youth entering the labour market each year.

The Resilient Food Systems Programme

Implementation structure



5 Years
Programme Length
(2017 · 2022)



12
Country Projects
+1
Regional Hub

The RFS initiative is being implemented from 2017–2022. The Global Environment Facility (GEF) led the programme design and provides its core grant financing (US$116 million). The programme counts an additional US$785 million in co-financing provided by technical agencies, governments and other partners. The International Fund for Agricultural Development (IFAD) leads the implementation of the whole programme and is the GEF agency responsible for Burkina Faso, Eswatini, Kenya, Malawi, Niger and Tanzania country projects, in addition to co-leading (with UNIDO) the Senegal project.

In terms of governance, the RFS programme benefits from strategic and policy guidance provided by a Consultative Committee comprising senior policy makers from all 12 countries and representatives from funding and implementing partners. The Consultative Committee provides strategic and policy guidance for the programme, advising participants as and when required with regard to implementation and other issues that might affect the achievement of the programme's objectives. When needed, technical advisory groups are also constituted with subject-matter experts from selected partners and external collaborators to guide the programme on specific technical or scientific issues.

The Programme Coordination Unit, comprising members of the Regional Hub partners, is hosted by World Agroforestry (ICRAF) in Nairobi, Kenya.

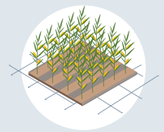
Intended global environmental benefits

The RFS programme brings together various stakeholders – including local farming groups, governments, private entities, and research and development partners – to promote sustainable land management (SLM) to strengthen food security in sub-Saharan Africa while generating global environmental benefits (GEBs).

Key programme targets include:

1.1 million hectares
under improved production practices

Avoiding emission of
59 million metric tonnes
of CO_2



15–25% improvement
of genetic biodiversity on smallholder farms

2.1 million hectares
under SLM

2 million households
benefiting from the programme

FUNDER AND PROGRAMME DESIGN

The Global Environment Facility (GEF) led the programme design and has provided its core grant financing ($116 million), along with strategic guidance. The GEF was established on the eve of the 1992 Rio Earth Summit to help tackle our planet's most pressing environmental problems. Since then, it has provided close to $20 billion in grants and mobilized an additional $107 billion in co-financing for more than 4,700 projects in 170 countries. Through its Small Grants Programme, the GEF has provided support to nearly 24,000 civil society and community initiatives in 128 countries. The Global Environment Facility is an international partnership of 183 countries, international institutions, civil society organisations, and the private sector working to address global environmental issues.

GEF PROGRAMME LEAD AGENCY

IFAD leads the implementation of the whole programme and is the GEF agency responsible for Burkina Faso, Eswatini, Kenya, Malawi, Niger and Tanzania country projects, as well as a co-lead (with UNIDO) of the Senegal project. The Fund's comparative advantage lies in its work related to land degradation, rural sustainable development and integrated land management, and its role in the implementation of the UN Convention to Combat Desertification. IFAD has been working intensively in marginal lands, degraded ecosystems and in post-conflict situations.

GEF IMPLEMENTING AGENCIES

Conservation International (CI) is an executing partner of the Regional Hub project, being responsible for the development of frameworks for multi-scale monitoring and assessment of ecosystem services and socio-economic benefits, as well as for operationalising a framework for monitoring global environmental benefits in all target geographies (Components 3.1 and 3.2, Regional hub). CI works globally with governments and engages with all sectors of society to achieve the ultimate goal of improved human wellbeing, particularly focusing on the essential services that nature provides. The foundation leverages its science, experience in innovative finance and community-based solutions, as well as its network of partnerships, to effectively tackle challenges in the areas of biodiversity, climate change adaptation and mitigation, land degradation and international waters.

The Food and Agriculture Organization of the United Nations (FAO), along with the UN Environment, co-leads the creation and strengthening of integrated institutional frameworks and mechanisms, in particular the development of the Science–Policy Interface (Component 1.1, Regional Hub). FAO also promotes (with UNDP and AGRA) the scaling up of integrated approaches, targeting specifically the wide-scale and enhanced uptake of integrated natural resource management (INRM) to foster sustainability and resilience in production landscapes and agroecosystems (Component 2.1, Regional Hub). In addition, FAO is responsible for implementation of the national projects in Burundi and, along with UNDP, Uganda. As an agency of the United Nations aiming at defeating hunger, FAO provides technical support, is a source of knowledge and information, and helps developing countries and countries in transition modernise and improve agriculture, forestry and fisheries practices, ensuring good nutrition and food security for all.

The World Bank oversees the implementation of the Sustainable Land and Water Management Project (SLWMP) in Northern Ghana. The World Bank Group is a leading international financial institution at the global scale in a number of sectors, having strong experience in investment lending, focusing on institution building, infrastructure development and policy reform across all the focal areas of the GEF.

UNDP co-leads the scaling up of integrated approaches, along with FAO and AGRA, focusing particularly on greening regional food value chains and improving their resilience across the 12 programme countries (Component 2.1, Regional Hub). Furthermore, UNDP is responsible for implementation of the projects in Ethiopia, Nigeria and, along with FAO, Uganda. UNDP works in about 170 countries and territories, helping to achieve the eradication of poverty, and the reduction of inequalities and exclusion. It helps countries develop policies, leadership skills, partnering abilities, institutional capabilities and build resilience in order to sustain development results.

UN Environment collaborates with FAO in the development of institutional frameworks, leading in particular to the establishment of a scientific knowledge support interface to provide options to promote and underpin innovations for sustainability and resilience of agroecosystems (Component 1.2, Regional Hub). The organisation also works with Conservation International (CI) and Bioversity International on the monitoring and assessment of global environmental benefits and resilience (Component 3.3, Regional Hub). It focuses in particular on strengthening national capacity to apply appropriate tools and practices for monitoring resilience at multiple scales. UN Environment coordinates the United Nations work on environmental activities, assisting developing countries in implementing environmentally-sound policies and practices. It brings to the programme a range of relevant experiences, proof of concept, testing of ideas, and the best available science and knowledge upon which it can base its investments. It also serves as the Secretariat to three of the Multilateral Environmental Agreements, for which the GEF is the/a financial mechanism.

UNIDO is responsible, with IFAD, for implementing the Agricultural Value Chains Support Project in Senegal. UNIDO is the specialised agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalisation and environmental sustainability. Its comparative advantage for the programme lies in its capacity to involve the industrial sector in relevant areas, as well as in its extensive knowledge of small and medium enterprises (SMEs) in developing and transition economy countries.

EXECUTING PARTNERS

AGRA collaborates with UNDP on greening regional food value chains and improving their resilience (Component 2.1, Regional Hub). AGRA is an alliance of partners – including farmers and their organisations, governments, agricultural research organisations, the private sector, local non-governmental organisations and civil society – working to significantly and sustainably improve the productivity and incomes of smallholder farmers on the continent.

Bioversity International works with UN Environment and Conservation International (CI) to strengthen capacity to apply appropriate tools and practices for monitoring resilience at multiple scales (Component 3.3, Regional Hub). The organisation also collaborates with UN Environment and FAO on activities related to establishing a Science–Policy Interface and a scientific knowledge support interface, as well as on promoting wide-scale and enhanced uptake of integrated natural resource management (INRM) (Component 1.2, Regional Hub). Bioversity International delivers scientific evidence, management, practices and policy options to use and safeguard agricultural and tree biodiversity to attain global food and nutrition security.

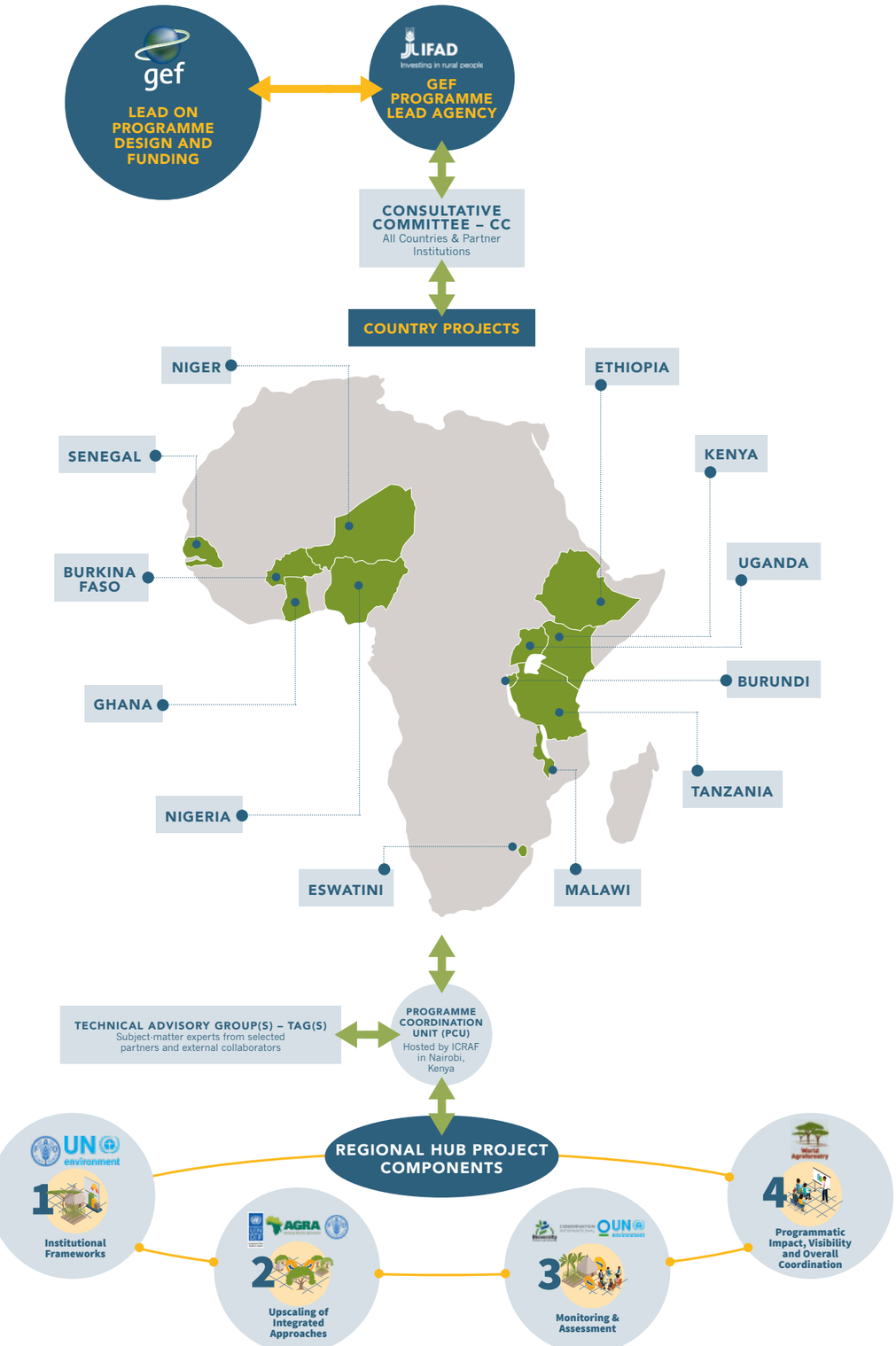
World Agroforestry (ICRAF) hosts and manages the Programme Coordination Unit at its Nairobi headquarters, ensuring coordination, reporting and general management functions across all 13 projects for programmatic impact, visibility and coherence (Component 4, Regional Hub). ICRAF brings to this initiative 40 years of scientific excellence that harnesses the benefits of trees for people and the environment. Leveraging the world's largest repository of agroforestry science and information, ICRAF develops knowledge products and practices, from farmers' fields to the global sphere, to ensure food security and environmental sustainability.

TECHNICAL ADVISORY PARTNERS

ESA collaborates with the Regional Hub on the monitoring and assessment of the programme impact at multiple scales. In particular, its Earth Observation for Sustainable Development (EO4SD) initiative supports and complements key programme resources, with Earth Observation (EO) services and capacity for land monitoring and assessment at both country project and regional levels. The EO4SD project contributes, in particular, with information on biomass production, agricultural water productivity, water consumption and deficit, as well soil erosion potential, among other information designed for monitoring sustainable and integrated land management to inform the Programme-Level Indicators. Through the EO4SD Agriculture and Rural Development Cluster, ESA aims at mainstreaming the use of EO information products and services at large scale for international development projects.

GEF STAP contributes to the programme in a technical advisory capacity, providing guidance on scientific and technical issues related to achieving global environmental, socioeconomic and food security benefits at programme level. GEF STAP comprises several expert advisers supported by a Secretariat, who together are responsible for connecting the GEF to the most up-to-date, authoritative, and globally representative science.

Resilient Food Systems Programme organisation



Geographic focus for the programme

Resilient Food Systems targets four geographies in sub-Saharan Africa that are seriously affected by environmental degradation and loss of ecosystem services, resulting in persistently low crop and livestock productivity, and increased food insecurity.

SAHEL

The Sahel is dominated by agropastoral and cereal-root crop mixed farming systems. Cereal yields are low and stagnant and the prevalence of food inadequacy (where the population is not consuming enough calories for normal activity) is more than 30 percent in countries such as Burkina Faso and Senegal.

There is a need to reduce the vulnerability of the population to food insecurity by stabilising yields and reducing risk through water harvesting, adjusting timing of planting, and better integration of crop, trees and livestock.

HORN OF AFRICA

The Horn of Africa is covered by arid, pastoral and agropastoral systems. This is often described as the most food-insecure region in the world due to recurring droughts and armed conflict. Prevalence of food inadequacy is thus very high – 44 percent in Ethiopia and 72 percent in Eritrea.

In order to reduce vulnerability and risks and improve food security, there is potential for diversification of the agropastoral systems and to improve market access for smallholders. Management of grazing is critical throughout this area.

EAST AFRICAN HIGHLANDS

The East African Highlands cover a range of ecosystems due to the diversity of elevations, climatic conditions and soil types. Population densities are very high, and plot sizes tend to be very small – below one hectare on average. Population pressure is causing high levels of deforestation and unsustainable management of natural resources, such as soil on farm plots. Prevalence of food inadequacy is very high and ranges from 36 percent in Kenya up to almost 77 percent in Burundi due to stagnating yields and high population growth.

To increase yields, smallholders need better access to inputs, such as improved varieties of maize, wheat, teff and barley that can increase yields up to three times compared to traditional seeds, but availability and cost remain significant obstacles, as well as access to extension services and information. In order to reduce the vulnerability of the population to risks of crop failure, farming systems also need to become more diverse and resilient to changing and unpredictable rainfall patterns.

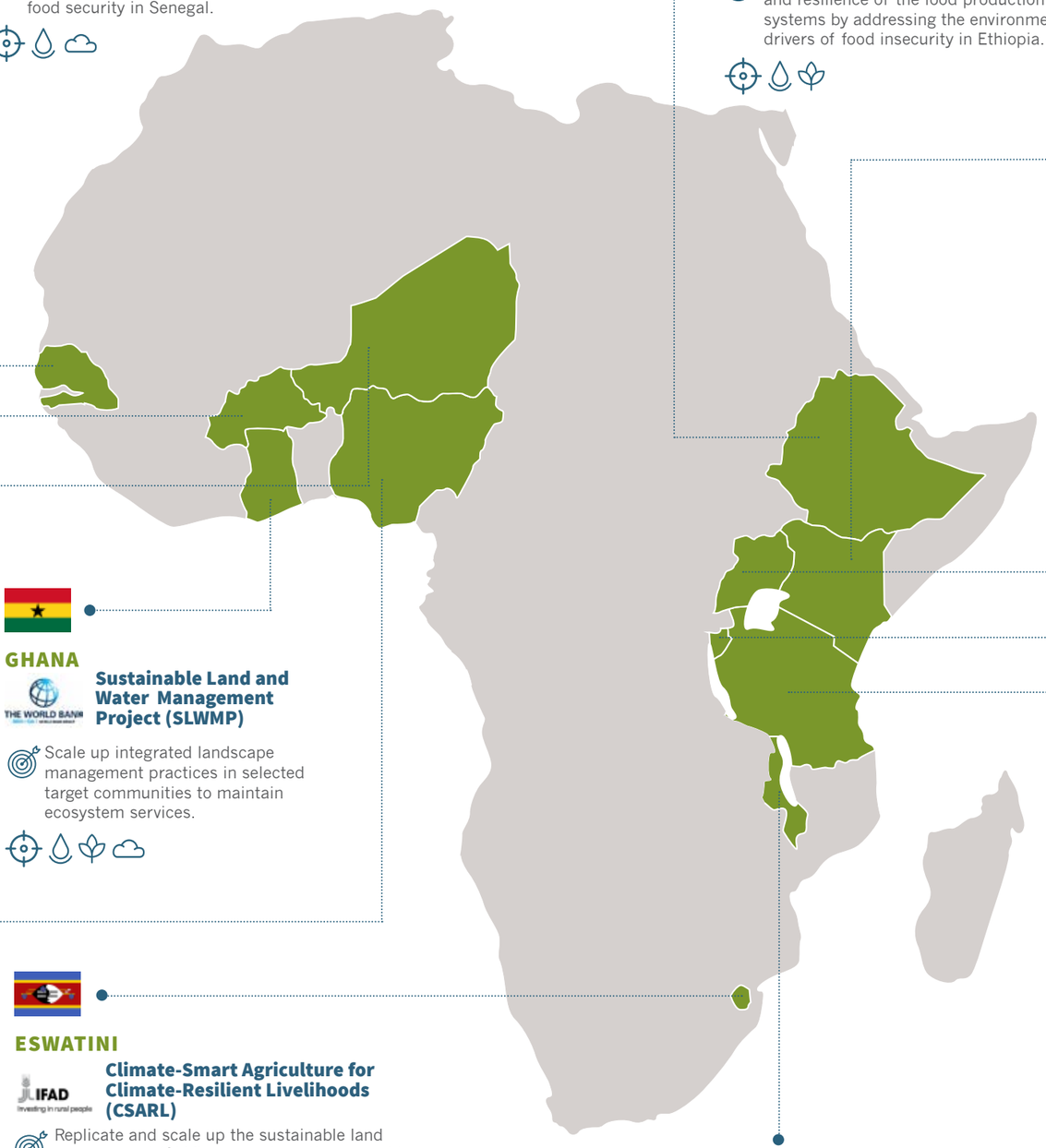
SOUTHERN AFRICA

The Southern Africa target geography is a high-potential zone for agricultural growth and poverty reduction with the maize-mixed system being a priority, as it represents an important share of the agricultural sector in several countries in the region. This is dominated by smallholders, but in several countries there is also a well-established, large, commercial farming sector with access to improved seeds, fertilizer and pesticides, and better road access to markets than in many other parts of sub-Saharan Africa. This is reflected in much higher crop yields per hectare than in the other target geographies. Food inadequacy is over 40 percent in most of the rest of the region, and close to 50 percent in countries such as Malawi. Maize production is becoming increasingly vulnerable to heat and water stress linked to climate change.

The introduction of drought-tolerant crops, scaling up of soil and water management and diversification are priorities in this region, coupled with improved market access for smallholders.

Country projects

RFS directly engages 12 countries in the integration of natural capital management and ecosystem services through investments that aim to improve smallholder farming and food security. The programme works towards a common understanding of ecological sustainability and resilience, the basis for achieving economic sustainability and resilience of the production sectors themselves.



SENEGAL

Agricultural Value Chain Support Project (PARFA)

Increase sustainability and resilience of agriculture and value chains for enhanced food security in Senegal.

BURKINA FASO

Participatory Natural Resource Management and Rural Development Project (Neer-Tamba Project)

Promote sustainable ecosystem services management to ensure food security and increase smallholders farmers' resilience.

NIGER

Family Farming Development Programme (ProDAF)

Ensure sustainable food security and strengthen smallholder farming resilience.

GHANA

Sustainable Land and Water Management Project (SLWMP)

Scale up integrated landscape management practices in selected target communities to maintain ecosystem services.

NIGERIA

Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience in Nigeria

Enhance long-term environmental sustainability and resilience of food production systems in order to ensure improved national food security.

ESWATINI

Climate-Smart Agriculture for Climate-Resilient Livelihoods (CSARL)

Replicate and scale up the sustainable land management (SLM) approach on the ground to increase or maintain ecosystems service flows for sustained crop, livestock and forest production, and conserve biodiversity. The project would also endeavour to build climate resilience households.

ETHIOPIA

Integrated Landscape Management to Enhance Food Security and Ecosystem Resilience

Enhance long-term sustainability and resilience of the food production systems by addressing the environmental drivers of food insecurity in Ethiopia.

KENYA

Upper Tana-Nairobi Water Fund (UTNWF)

A well-conserved Upper Tana River Basin with improved water quality and quantity for downstream users (public and private); maintaining regular flows of water throughout the year; enhancing ecosystem services, specifically food security, freshwater and terrestrial biodiversity, and improving human wellbeing and quality of life for upstream local communities.

UGANDA

Fostering Sustainability and Resilience for Food Security in Karamoja Sub-Region

Improve food security by addressing the environmental drivers of food insecurity and their root causes in Karamoja sub-region.

BURUNDI

Support for Sustainable Food Production and Enhancement of Food Security and Climate Resilience in Burundi's Highlands

Improve diversified production systems for sustainable food security and nutrition through integrated sustainable landscape management and establishment of sustainable food value chains.

TANZANIA

Reversing Land Degradation trends and increasing Food Security in degraded ecosystems of semi-arid areas of central Tanzania (LDFS)

Reverse land degradation trends and increase food security in central Tanzania through supporting sustainable land and water management and ecosystem-based adaptation.

MALAWI

Enhancing the Resilience of Agro-ecological Systems (ERASP)

Enhance the provision of ecosystem services to improve productivity and resilience of agricultural systems.

KEY

- GOALS
- FOCAL AREAS
- LAND DEGRADATION
- BIODIVERSITY
- CLIMATE CHANGE

Regional Hub Project

Activities in these countries are coordinated by a Regional Hub with the aim of prioritising the management of natural capital in ongoing efforts to transform the agricultural sector in sub-Saharan Africa and ensure sustainable food production. The Regional Hub is a cross-cutting project whose core functions are to provide technical and scientific support, as well a to coordinate the 12 implementing countries and improve learning among them.

This aims to ensure programme additionality, as per the IAP model, bringing different stakeholders working in common landscapes together (governments, private sector, communities, financiers/investors, etc.), to build coherence and momentum to changes at system levels – policy, regulatory and practice levels – that can then lead to the required on-the-ground change at 'local' levels.

In partnership with a range of actors and via existing platforms in sub-Saharan Africa, the Regional Hub helps address barriers to the inclusion of ecosystem services approaches into policies and investments for improved and sustainable smallholder agriculture and food value chains.

The focus is on facilitation of dialogue, models, metrics, and practices that bridge the agricultural and environmental agendas at various scales. This involves, where possible, strengthening of existing partnerships and institutional frameworks, learning and scaling successful methods, and facilitating the creation and strengthening partnerships and engagement with multi-stakeholder science and policy platforms across the continent, as well as tracking progress and impact for improved learning and upscaling of successful methods.

REGIONAL HUB

The 12 country projects are connected by the Regional Hub. The Hub has four key components, led by institutional partners with key technical expertise to support science–policy linkages, implementation and monitoring within the country projects. The Hub project aims to ensure overall coordination by facilitating the exchange of knowledge and upscaling of best practices, as well as joint tracking of impact at national and regional levels.

COMPONENT 1

INSTITUTIONAL FRAMEWORKS

Create and strengthen integrated institutional frameworks and mechanisms for scaling up proven multi-benefit approaches

1.1 FAO
1.2 UNEP

COMPONENT 2

UPSCALING OF INTEGRATED APPROACHES

Scaling up integrated approaches and practices

2.1 UNDP in collab. with AGRA
2.2 FAO

COMPONENT 3

MONITORING & ASSESSMENT

Monitoring and assessment of global environmental benefits and agro-ecosystem resilience

3.1, 3.2 CI
3.3 UNEP in collab. with Bioversity

COMPONENT 4

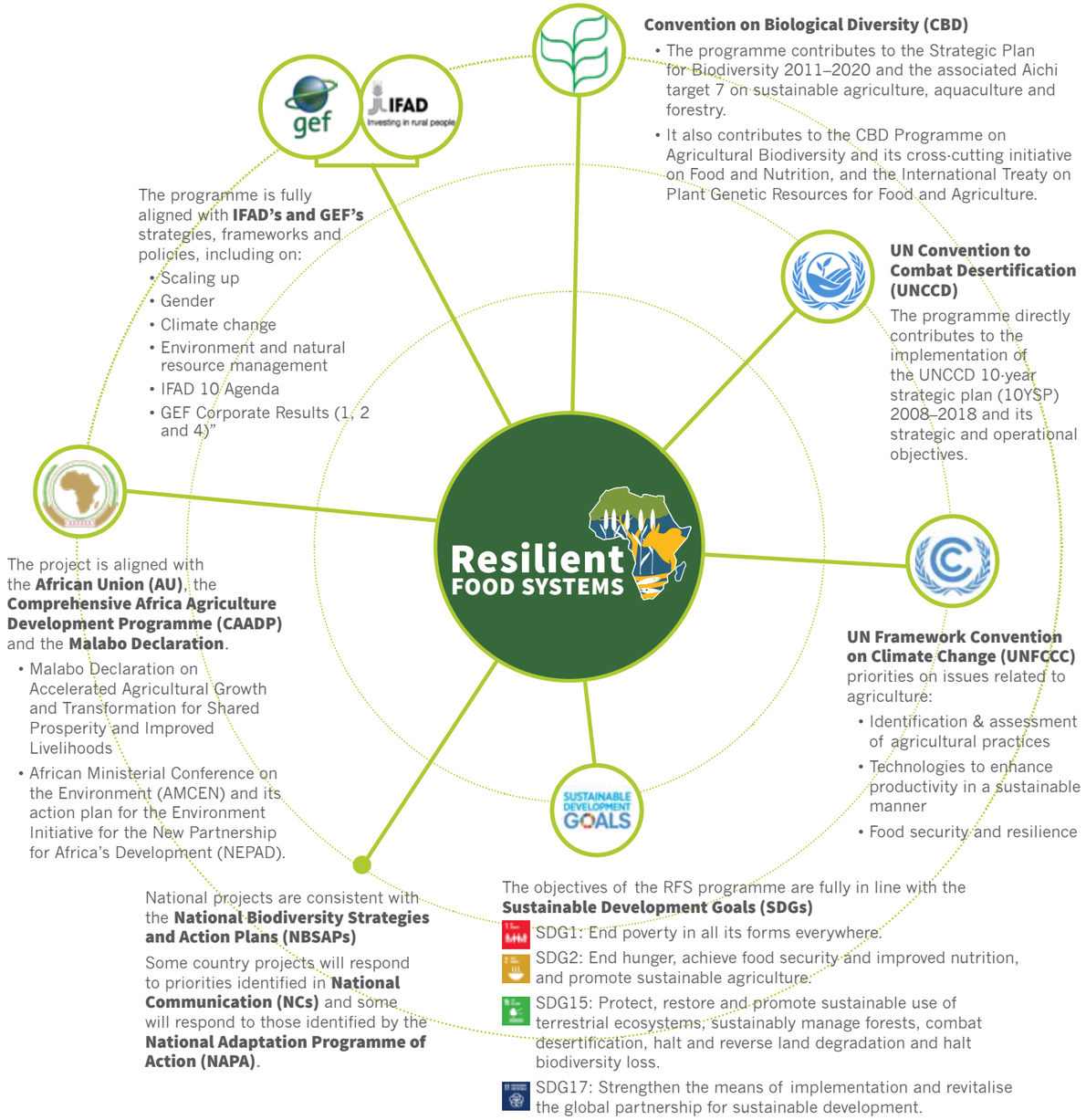
PROGRAMMATIC IMPACT, VISIBILITY AND COHERENCE

Coordination, reporting and general management functions across IAP projects for programmatic impact, visibility and coherence

4. ICRAF

Alignment with national and global goals

RFS is directly aligned to existing global priorities as part of the UN Sustainable Development Goals 1, 2, 15 and 17, with the focus on fostering long-term sustainability and resilience through integrated management of natural capital – land, water, soil, and genetic resources – in the drylands of sub-Saharan Africa. Through the integrated approach, country projects under the Programme also contribute to several other SDGs, such as 6, 8 and 13. Gender equality (SDG 5) and mainstreaming are also targeted throughout the programme implementation, by taking into consideration the differences in needs, roles, responsibilities and opportunities for equal engagement of women and men. These programme interventions aim to reflect the growing need to empower women and unleash their capabilities in tackling major drivers of environmental degradation. In addition to the SDGs, RFS addresses the commitments from the three Rio Conventions on Biological Diversity (CBD), Combating Desertification (UNCCD), and Climate Change (UNFCCC).



Creating institutional frameworks for agricultural development

Resilient Food Systems is helping to strengthen and establish institutional frameworks for implementation at multiple levels:

Regional

The programme is pursuing close engagement with the African Union and other major (sub-)regional institutions and initiatives, to exchange knowledge, build synergies and help leverage opportunities at country level.

Project Portfolio

The actual means to do this is through the Regional Hub project, which builds on technical and scientific expertise and resources from several partners, each with their own entry points for regional processes and initiatives.

Project Specific

At country-level different types of frameworks for agricultural transformation are being utilized, including intra-governmental coordination mechanisms and multi-stakeholder platforms.

Programme approach: Engage – Act – Track

Resilient Food Systems is founded on three guiding principles, which are reflected in the core components of each project. Through a co-coordinating regional hub and network of partners, the 12 countries are well-placed to harness good practices for long-term sustainability and resilience of food production by reducing land degradation and biodiversity loss, recovering natural vegetation and increasing soil carbon.

The integrated approach of Resilient Food Systems focuses on three areas:

ENGAGE

Engaging stakeholders in promoting collective action and coherent policies. GEF's convening power and catalytic role have been invaluable for engaging countries and mobilising diverse stakeholders to advance the integrated approach;

ACT

Intensifying, diversifying and adapting practices for a large-scale transformation of agro-ecosystems; and

TRACK

Monitoring and assessment to inform decision-making for sustainability and resilience in the agricultural sector.

Analyse and facilitate dialogue to promote collective action and coherent policies; disseminate scientific knowledge to inform policy dialogue; strengthen institutional frameworks; and bridge the gap between agricultural and environmental agendas.

Outcomes

1.1 Multi-stakeholder, intersectoral and multi-scale frameworks to facilitate scaling up of integrated natural resources management (INRM) good practices

1.2 Supportive policies and incentives for INRM and diverse and inclusive food value chains

Outcomes

3.1 Capacity and institutions in place for multiscale monitoring of ecosystem services and Global Environmental Benefits (GEBs), with enhanced info/data access

3.2 Framework in place for multiscale assessment of resilience in each target geography

Outcomes

2.1 Increased land area under INRM and Sustainable Land Management (SLM) – sustainable soil and water management, diversified production, integrated crop/livestock systems

2.2 Increased investment flows to INRM from all partners and innovative mechanisms

Section 2.

Engage

Resilient FOOD SYSTEMS

The multi-dimensional nature of agriculture and food insecurity in the African drylands is inherently complex. **Resilient Food Systems (RFS)** is helping to facilitate dialogue among these competing and conflicting players and narratives, and promote cooperation among them to foster collective action at scale.

The **ENGAGE** work aims to bring together the right stakeholders in the appropriate forums, analyse, disseminate scientific and practical evidence from interventions across the 12 countries, and facilitate dialogue to strengthen institutional frameworks. This aims to bridge the gap between agricultural and environmental agendas by promoting integrated approaches that improve smallholder agriculture.

Through the Engage work, the programme is fostering a common understanding of ecological sustainability and resilience as the basis for achieving economic sustainability and resilience of the production sectors themselves.

At a system level within each country, the programme facilitates joint planning and implementation by the government ministries dealing with agriculture, natural resources and the environment, with engagement by diverse stakeholders from the development community, private sector and civil society.

Resilient FOOD SYSTEMS

To achieve a systemic shift in African agriculture, the programme is promoting mechanisms for multi-stakeholder coordination, planning and investment in sustainable agriculture at scale.

In addition, it is fostering supportive policies and incentives for smallholder farmers to adopt sustainable and resilient practices (including low-emission technologies and biodiversity considerations).

Chapter 3

Influencing policy and institutional dialogue processes

Operational partnership with FAO in Uganda

A major achievement for the RFS Uganda project was the signing of the Operational Partner Agreement (OPA) between the Food and Agriculture Organization of the United Nations (FAO) and the Ministry of Agriculture, Animal Industries and Fisheries (MAAIF) of Uganda. In line with this partnership, the **identification of over 2,000 beneficiaries** has taken place, as well as MAAIF signing a Memorandum Of Understanding (MOU) with the Nabuin Zonal Agricultural Research and Development Institute, identifying **1,000 community members to benefit from alternative livelihood activities**.

Alignment of Niger's national policies on environment and sustainable development

Niger's 3N initiative, Nigeriens Nourishing Nigeriens, commenced in 2012 as a result of strong political will to combat hunger and poverty in the country. 3N is a large-scale, cross-sectoral initiative that increases livestock, agricultural and forest productivity, while increasing the resilience of farmers and pastoralists to climate change and food insecurity. **The 3N initiative was created with the objective to eradicate famine and reduce poverty by enhancing sustainable agricultural development and by improving the resilience of rural communities to food insecurity**. As the 3N initiative focuses on sustainable agricultural practices, such as irrigation, erosion control measures and afforestation, these goals directly benefit from the implementation activities of the Family Farming Development Programme (ProDAF) in Niger, which focus on the rehabilitation of degraded lands.

The National Policy on Environment and Sustainable Development's overall objective is to provide favourable general conditions for economic, social and cultural development. It aims to achieve this through the preservation and sustainable management of the environment and natural resources, and through strengthening measures to adapt to the negative effects of climate change in order to ensure the long-term food security of Nigeriens and to improve their living conditions.

Niger's Strategic Investment Framework for Sustainable Land Management (CSIN-GDT) aims, in particular, to scale up good practices in the sustainable management of lands and forests. The Nationally Determined Intended Contribution (INDC) submitted by Niger to UNFCCC, with its **goal of reducing greenhouse gas (GHG) emissions by 34.6%, signals a reduction of 33,400 $GgCO_2eq$ by 2030.** Within the INDC, government has identified the following activities that are likely to reduce GHG emissions within the agricultural sector: SLM; adoption of good farm management practices; assisted natural regeneration (ANR); agroforestry; silvo-pastoral systems; dissemination of improved stoves and the promotion of domestic gas and biogas.

In the regions of intervention by ProDAF, funding from RFS enabled a set of coherent frameworks to be created through a series of consultation meetings and wide scoping of stakeholders involved in sustainable management. The frameworks aim to harmonise interventions and avoid duplicating activities. They have been amalgamated by the Regional Councils in the three regions with support from the project, and consequent partnership agreements have been created.

Scaling and replicating project learning in Ghana

In Ghana, the Minister of Environment, Science, Technology and Innovation significantly appreciated the role of the RFS Sustainable Land and Water Management (SLWM) project in **supporting food production systems through sustainable land and water management**, highlighting a request for additional government resources to scale the initiative, emphasising that *"good projects should not be allowed to die".*

Photo: © Samuel Asare / RFS Ghana

Assessing by-laws for integrated natural resource management

In **Uganda**, the RFS project has been reviewing existing multi-stakeholder platforms and coordination mechanisms in use and their utility. This includes a review of the by-laws in Karamoja, in order to prepare appropriate approaches to positively influence local policy approaches to addressing integrated, natural resource management.

Influencing policies on sustainable land and water management in Eswatini

The RFS project in Eswatini has been actively engaged in creating stakeholder collaboration and providing support to the formulation of Chiefdom Development Plans (CDPs). In addition to support to the CDPs, the project has spearheaded the formulation of a National Irrigation and Drainage Committee, which aims to bring together all stakeholders to influence policies related to sustainable land and water management (SLWM) in Eswatini.


Photo: © RFS Niger


Photo: © RFS Eswatini

As part of regional collaboration initiatives, the Resilient Food Systems programme has been integrated into the regional environment and climate cluster two-years' workplan under the United Nations and African Union Regional Coordination Mechanism (RCM) retreat held in Addis in February 2019.

This offers an opportunity to participate in regional dialogue and influence policy direction, which will be further be consolidated through the Science-Policy Interface (SPI) and the outcome mapping being developed by the Regional Hub - respectively by UNEP/FAO and ICRAF.

Influencing key learning in resilience programming

INTERVIEW INSIGHTS – FUNDING FOR RESILIENT FARMERS

Jonky Tenou – IFAD Task Manager for the Integrated Approach Programme (IAP)

Jonky Tenou is the Task Manager of the Integrated Approach Programme for food security and resilience in sub-Saharan Africa, working with IFAD (International Fund for Agricultural Development) at Environment, Climate, Gender and Social inclusion Division in the Sub-Regional Hub, Addis Ababa, Ethiopia. He has over 15 years of hands-on experience in climate change, disaster risk reduction, environment and natural resources management and in advancing human development in complex development contexts.

Could you introduce how you've been involved in resilience work?

I'm the Task Manager of the Integrated Approach Programme (IAP) on fostering sustainability and resilience for food security in sub-Saharan Africa – Resilient Food Systems (RFS). It's a multi-agency programme funded by GEF (Global Environment Facility) and led by IFAD. Various actors like World Bank, UNDP, UNEP, UNIDO, FAO, ICRAF, Conservation International, Bioversity International and AGRA are all partners of this programme at the regional and country levels.

How does the project contribute to enhancing resilience in the area?

The programme has engaged 12 African countries (Burkina Faso, Burundi, Ethiopia, Ghana, Kenya, Malawi, Niger, Nigeria, Senegal, Eswatini, Tanzania and Uganda). All are located in the dryland regions of sub-Saharan Africa where the threat of environmental degradation and climate change is a major constraint to food production. The programme targets especially smallholder farmers, working to improve their resilience and helping them to strengthen soil health, improve access to drought-tolerant seeds, adjust planting periods and cropping portfolios, and enhance on-farm agrobiodiversity. The 12 country projects have been screened through a resilience angle by emphasising several key principles to ensure consistency across the programme. Investing in rural people and building their resilience to climate change and agricultural risks is the core of our work.

Have end users been involved in design or implementation aspects of the programme?

The programme is advancing an integrated and holistic approach to environmental management for food security, through multi-stakeholder frameworks that engage smallholder farmer groups, private sector entities and government and scientific institutions at all levels. Smallholder farmers as end users are the key players in designing and implementation of the programme and are part of multi-stakeholder platforms that deliver cross-cutting capacities and knowledge services.

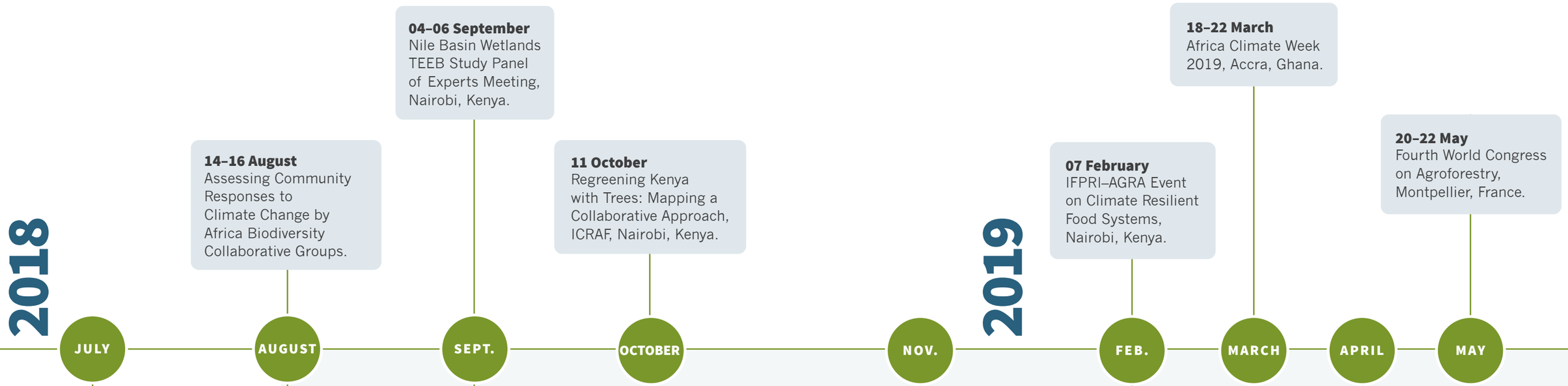
What message do you have for a donor or funder considering whether to invest in resilience building?

Sub-Saharan African smallholder farmers are the most vulnerable to climate change and other extreme weather events. Investing to build smallholder resilience and safeguarding their livelihoods is essential for poverty alleviation in rural areas. This needs an integrated and holistic approach where the donor community, private and public sector and civil society each have an important role to play. The RFS programme strongly believes that more investment in building resilience could lead to a rural transformation and sustainable growth in sub-Saharan Africa.

GLOBAL RESILIENCE PARTNERSHIP

Resilient Food Systems engaging in policy dialogue events

A diverse audience, comprising mostly policy makers, along with representatives from academia, NGOs and the private sector, was reached out to and could learn about the programme through active Hub support (or co-organisation) of the following main policy dialogue events:



Training on climate change and environmental monitoring for policy makers in Burkina Faso

The RFS project in Burkina Faso, in collaboration with the Permanent Secretariat of Agricultural Sector Policies, the Executive Secretariat of the National Food Security Council and the National Chamber of Agriculture (CNA), and with their entities at regional level, has engaged over 500 policy focal points in training in environmental monitoring tools and climate change. This regional training brings together various types of actors, including regional decision-makers, members of the consular structures and representatives of OPA, providing a forum for exchange on policies, their application in the field and lessons learned. Information and sensitisation sessions are also held for members of the sectoral dialogue framework "Rural Development, Food Security and Environment" on the links between food security and the sustainable management of the environment, as well as integration measures on planning instruments. Following the training, the project provides for the routine distribution of notes to the decision-makers for the animation of the consultation frameworks. These notes inform policy-makers on strategic options for sustainable management of natural resources, integration of environmental issues into local and sectoral plans, and national budgets.

Photo: © RFS Niger

Catalysing inter-ministerial collaboration

Several countries, such as Ghana, Uganda and Burundi, emphasised the programme is contributing to inter-ministerial cooperation, as well as to the harmonisation of national policies and strategies (e.g., on land management, water, food security, climate change, renewable energy, etc.). In Uganda, for instance, the RFS integrated approach is being touted to strengthen sub-regional planning and land use plans.

Facilitating multi-stakeholder processes

Capacity building and institutional support for multi-stakeholder frameworks

The RFS project in Burkina Faso has been active this year in providing institutional support to the Regional Chambers of Agriculture (RCA). Activities this year have included financing and training on different themes, distribution of manuals and technical data sheets and the creation of the National Chamber of Agriculture website. In order to give specific support for integrating environmental considerations in the agriculture sector, training was given on the operational strategy for this and on targeted policy dialogue sessions. A key aspect of the institutional support has also been to fund inter-regional visits between Niger, Senegal and Mali attended by 34 diplomatic members.

Specific support has been tailored for the Permanent Advisor in Environment, Climate Change and Communication to assist the National Chamber of Agriculture in its support activities related to environment and climate change.

Stakeholder engagement in rural development and planning processes in Eswatini

The Ministry of Tinkhundla Administration and Development (MTAD) in Eswatini is the key target stakeholder within the project approach to assist in the Chiefdom Development Plan (CDP) process. This engagement by the RFS Eswatini project has resulted in two CDPs being launched, and in building capacity of the ministry community development officers to facilitate further CDP processes, using the skills acquired through the stakeholder engagement process.

Development of integrated landscape management regulatory framework in Burundi

This year, the RFS project in Burundi has seen the establishment of a Sustainable Land Management Group, with 24 dedicated technical government staff in place. In addition there has been an Agriculture and Rural Development Sector Working Group (GSADR) established at national level, and three at provincial level, to strengthen watershed management committees and put in place multi-year intervention plans at project sites. Through a series of nine consultation meetings and data collection in nine watersheds, the working group has helped to establish and develop an Integrated Landscape Management (ILM) regulatory framework for the country.

Facilitating frameworks of stakeholders across 30 municipalities in Niger

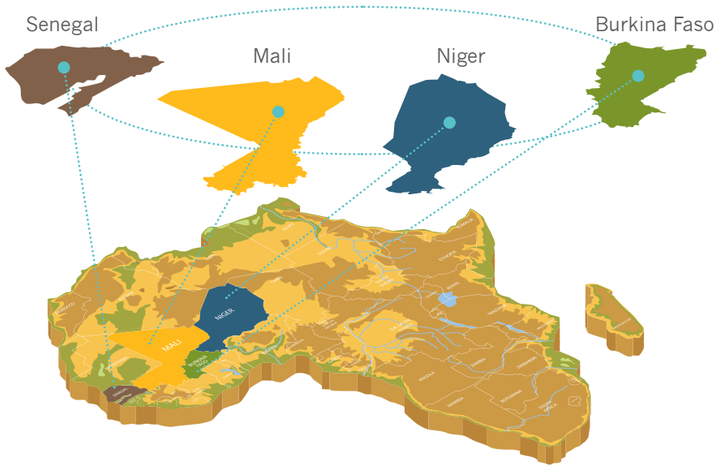
The RFS project in Niger has facilitated Communal Concertation Frameworks of the Stakeholders (CCCA) in 30 municipalities across three regions. The overall objective is to assist the Communes in improving their performance, specifically to discuss the implementation of the 2018–2019 agro-silvo-pastoral and hydraulic campaigns. With technical support from the regional co-ordinator of the country's major policy drive on the 3N initiative, 10 meetings per region were organised, linking over 750 people with the consultation frameworks for stakeholders.

Gender-sensitive and inclusive multi-stakeholder platforms established at federal, state and local levels in Nigeria

As part of the process of establishing inclusive multi-stakeholder platforms to support sustainable agriculture, the RFS Nigeria project was able to convene, with the assistance of the Women Farmers Advancement Network (WOFAN), two state-level summits for food commodities stakeholders. The aim was not only to establish innovation platforms, but also to advance inter-state, food-commodity value chains across the seven project states.

These summits targeted policy makers, financial institutions, millers, agro-dealers and representatives from the State Agriculture Development Programmes (ADPs). One immediate result has been the creation of a platform to link growers and off-takers for mutual collaboration through public-private partnerships.

EXCHANGE VISITS IN WEST AFRICA



Leveraging off national climate change governance structures for locally appropriate adaptation measures in Senegal

The RFS Senegal project, the Agricultural Value Chain Support Project (PARFA), proposes to create local climate change adaptation measures around the Regional Climate Change Committees (COMRECC) and National Climate Change Committees (COMNACC). These mechanisms are major tools for the dissemination and appropriation of adaptation measures. In addition to disseminating and decentralising the principles of the integrated and sustainable approach, the project has held information and awareness workshops at the national and local levels, bringing together decision-makers from the national assembly, economic, social and environmental councils and national government representatives. It also includes an array of development actors at the national level, including IFAD, the National Institute of Pedology, the Centre for Ecological Monitoring, the Directorate of Agriculture, the Directorate of Environment and Classified Establishments, the Directorate of Water and Forest, Hunting and Soil Conservation and FAO. Representatives of beneficiaries, including producers' organisations and livestock farmers' organisations, as well as municipal councillors, were widely engaged in the workshop process. The workshops further helped map stakeholder activities and the project's boundary partners, including actions to be undertaken for their mobilisation and participation in the project's objectives.

Multi-stakeholder platforms to support integration of natural resources management in food production practices in Ethiopia

The RFS project in Ethiopia, Integrated Landscape Management (ILM) to Enhance Food Security and Ecosystem Resilience in Ethiopia, has established a steering committee to oversee functional decision-making and multi-stakeholder platforms across the 12 implementing districts. The district administrators subsequently became members of the federal and national level steering committees to allow for clear transmission of information. The steering and technical committee members regularly monitor the project by conducting meetings and field visits to the project sites.

The project has established two levels of partnership mechanisms at federal and district level.

DISTRICT LEVEL

The district level partnership or steering committees are led by district administrators. The district-level steering members include district-sector office heads drawn from agriculture, environment, finance, education, gender and youth, and cooperative and small and micro-enterprise development officers. Every three months, these officers plan collaboratively and share resources during the implementation of project activities at a landscape level.

The RFS Ethiopia project is also working with six universities and one agriculture research centre. Research collaborations include collecting soil samples and a soil fertility study, understanding tree adaptation to cold environments, controlling soil salinity, establishing nurseries to plan trees in pastoral areas, and addressing bush encroachment.

FEDERAL LEVEL

The RFS Ethiopia project is in partnership with the Ministry of Agriculture, Ministry of Water, Irrigation and Energy, Ethiopia Bio-diversity Institute, National Meteorology Agency and Wildlife Conservation Authority. The objective of this partnership is to enhance integration of actors and resources during the implementation of ILM activities at landscape level. The institutions also offer technical support to the project, namely:

- The National Meteorology Agency provides up-to-date weather information relevant to project implementation areas.
- The Ministry of Agriculture extension workers are integrated into the project implementation structure.
- The project applies the policy for the agriculture and natural resource management activities.
- The project is also applying to the Ministry of Water, Irrigation and Energy technologies for improved, fuel-saving cookstoves and biogas plants.

Policy review and harmonisation in Nigeria

The RFS Nigeria project has undertaken a review on relevant national food security policies in Nigeria, including National Policies on Environment and Agriculture, National Food Security Programmes, and Policy on Food Nutrition. The aim of the policy review is to dovetail complementary implementation opportunities and policy overlaps in order to harmonise existing policies on agriculture and the environment to boost food security in the country. At the same time, an evaluation is also being carried out of relevant, national and state-level institutions: Ministries of Agriculture, Agricultural Development Programme Centres, Commercial Agricultural Development Project (CADP), and the National Programme on Agriculture and Food Security.

Chapter 5

Fostering innovative partnerships and private sector engagement

Within RFS, the role of the private sector has been perceived from two angles. Firstly, it can create an increase in investment flows from financial institutions to support pathways for scaling up options for smallholder productivity, with private sector resources channelled toward pro-poor and pro-environment value chains. Secondly, the participation by companies and businesses in innovative funding mechanisms and approaches can provide incentives for natural resource management. Private sector engagement and financing for smallholder agriculture is a challenge across the continent, which the programme is addressing through the country project engagements. While different models are being explored, issues surrounding risks, market opportunity, and value chain development are amongst the biggest constraints for access to finance by smallholder farmers. Consequently, in their engagement with the private sector, the country projects have mainly focused on addressing these barriers in an effort to work towards increasing financial flows and towards creating market opportunities.

Scaling the Water Fund approach globally: lessons from Kenya

The Upper Tana-Nairobi Water Fund (UTNWF) project represents a first-of-a-kind water fund in Africa, contributing to valuable lessons related to the food, water and agriculture nexus. Strong private sector support from the outset is expected to have major catalytic effects, well beyond its completion.

The project has engaged with the public and private sector actors and established a PPP. It is now moving forward towards institutionalisation of the UTNWF Trust. Spearheaded by The Nature Conservancy (TNC), key achievements in establishing these innovative partnerships include:

Engagement with national partners, such as the Ministry of Environment and Forestry and the Kenya Forest Service, as well as with county governments, so far has leveraged four seconded staff, aligned investments and technical staff for extension services, and MOUs to structure joint water fund and county governments' activities.

Partnerships were established with local NGOs for community mobilisation, input procurement and supplies, cost share collections, farmer learning and exchange tours, and participatory monitoring and evaluation (M&E).

The Water Resource Authority partnership provides a full-time technical officer seconded to UTNWF for monitoring, laboratory and technical expertise in water samples analysis, and partnership with four county governments.

Partnerships have been developed with research institutions, such as ICRAF and academia, including the Jomo Kenyatta University of Agriculture and Technology (JKUAT) and the National Museums of Kenya (NMK). These collaborations have produced robust baselines for monitoring and continued analysis.

Strong collaboration has been established from the outset with the private sector, including companies such as Frigoken, Coca-Cola, BAT, EABL, Caterpillar and UPS Foundation, which support the trust. So far they have contributed US$600,000 and pledged over US$1.5 million to UTNWF's endowment fund.

Smallholder farmers who are key private sector actors, have made a contribution of US$43,843 to the endowment fund.

Private sector support through pro bono professional services in tax, legal and investment advice has continued from Bowmans law firm LLP, Viva Africa Group and GenAfrica Asset managers

UTNWF has maintained its status as a national priority for the Kenyan government. This enables mainstreaming of the Water Fund modality in the government planning process, as well as providing justification for the Kenyan government and its agencies to offer financial and human capacity for achieving the Water Fund goals. A funding mechanism has been developed and adopted by three government agencies (Athi Water Services Board, KenGen, and Nairobi Water and Sewerage Company) defining procedures for public funding of UTNWF activities.

UTNWF's main achievement this year was in getting the Murang'a county government to invest at county level in promoting tree crops that ensure good ground cover, reduced erosion, nutrition and food security for local farmers.

The adoption of quality varieties, with good market demand, will provide additional revenue, estimated at US$8 million annually, once fully established in five years.

Photo: © RFS Kenya

“Even though people say water is life, I have seen it is also wealth. For sure, I would have been a desperate man if I had not taken the advice on water conservation.”

Mr Francis Njoroge Karuru, a 28-year-old smallholder farmer and entrepreneur in Karangi village, Murang’a County, Kenya, on how collaborating with the UTNWF project has impacted his business.

Outcomes with stakeholder engagement

- County governments: Two MOUs have been signed with Nyeri and Murang’a counties. Four county ministers are providing advice and linkages with counties as members of the Counties Advisory Committee (CAC).
- National government: Two representatives from the Ministry of Water, Sanitation and Irrigation and the Ministry of Environment and Forestry are providing policy advice and linkages with national government planning – as members of the Board of Trustees. Three GOK agencies (KFS, WRA, NMK) and the Ministries of Environment, Agriculture and the National Treasury provide policy and implementation advice as members of the Project Steering Committee.

The project has created a large momentum to scale, based on successful experiences, with leaders from other African cities – including Mombasa and Eldoret (Kenya), as well as Cape Town, Port Elizabeth and Durban (South Africa) – requesting guidance in the development of similar Water Funds from the UTNWF. The Water Fund modality has been identified as a best practice for the conservation of Kenya’s tropical water towers by the Kenya Water Towers Agency, which endorsed a proposal for the Kenyan government to allocate funding to support conservation work in three more water towers in the country. This is now under design for GEF Phase 7.

Establishing public–private partnerships with major value chain actors in Nigeria

Private sector actors along the value chains of major crops in Nigeria, including rice, groundnuts and soya beans, have been engaged by the RFS Nigeria project. The target state representatives and the private sector have consequently agreed, in principle, to convene under a public–private partnership (PPP) platform to discuss policy implementation at all tier levels, and to also establish linkages through the creation of innovation platforms. These will provide sustainable structures for the advancement of a win-win interstate commodity value chain for the targeted crops. Key companies from the private sector include Al-Hamsad Rice Mill Limited, Dantata Foods and Allied Products Limited, Sterling Bank and Jaiz Bank. The banking institutions have already indicated support to farmers through cluster alternate banking.

Linking state technical structures with research institutes in Senegal

In the RFS Senegal project, the collaborative approach initiated in the project by the Agricultural Value Chains Resilience Support Project (PARFA) consists of linking research institutes and state technical structures around joint or interrelated activities. Consequently, the dynamic and diversified partnership between Producers’ Organisations (POs), Local Authorities (LAs) and Decentralised Technical Services (DTS) is being pursued. The project is also in discussion with other projects and programmes operating in the intervention area for synergistic and complementary actions, such as with the International Union for Conservation of Nature (IUCN), regarding soil protection and restoration actions.

Partnership approach to stimulate local value chains in Eswatini

The RFS Eswatini project approach has a wide array of partners including government ministries, private companies and parastatals, such as the Ministry of Agriculture, Ministry of Tourism and Environmental Affairs, the Eswatini Environment Authority, Eswatini National Trust Commission and NAMBoard. NAMBoard is a market partner for the horticultural produce, providing marketing and production extension services. The Small Enterprise Development Company (SEDCO) also facilitates market linkages for the indigenous chickens value chain. The partnership resulted in the creation of the Indigenous Chicken Innovation Platform.

The project has also created a novel partnership with the Eswatini Mobile Telecommunication Network (MTN). As a private partner, MTN is funding viable youth businesses through seed capital competitions, including beekeeping businesses.

Eswatini Kitchen and Bulembu Ministries have partnerships with the project in honey production and marketing through entering into contract of sale agreements with honey producers.

A private partnership exists with Mashayinkonjane Goat Abattoir, which buys goats from farmers in the area.

Another example of a private partner is Lulote, which assists in business skills development and training of youth and women in two Rural Development Areas by assisting communities to construct rooftop rainwater-harvesting tanks.

The Youth Enterprise Revolving Fund provides financial support to viable youth agri-businesses in the project area across five value chains: honey, legumes, horticulture, goats and indigenous chickens.

Increasing investment flows towards integrated natural resource management in Ethiopia

The RFS project in Ethiopia is engaging with the private sector to facilitate and advocate for improved implementation of Environmental Mitigation Plans (EMP), promotion of value chain support schemes and support to Private Sector Social Responsibility (PSSR) at landscape levels. The project is planning to leverage the opportunities that arise from the approval of the Payment for Ecosystem Services (PES) bill, expected later this year.

Photo: © P. Casier (CGIAR)

Information access and knowledge sharing mechanisms for scaling out of sustainable agriculture systems

Exchange visits between Burkina Faso and Mali promote engagement and learning about sustainable land management

The RFS Neer-Tamba project has been collaborating with the Burkina Faso National Chamber of Agriculture (CNA) to support learning and exchange trips.

- 10 members from the Northern Regional Chamber of Agriculture (CRA) visited the Koulikoro region of Mali. This regional visit showcased the beneficiaries and results of interventions, such as lowland rice, market gardening perimeters, CES/DRS, and the recovery of degraded land. Members of the executive board of the Northern CRA and those of the CNA participated. This trip was facilitated by the PAPAPE–Mali National Coordination team; and
- An exchange trip to the Haut-Bassins region (Koundougou and Koumbia communes) was undertaken, exploring sustainable land management (SLM) practices for the benefit of 34 participants from the Northern CRA and members of the executive board.

Quarterly newsletter from RFS Senegal

In Senegal, the RFS project, through the Agricultural Value Chains Resilience Support Project (PARFA) initiated a quarterly newsletter 'info-filières' to share information on the progress of activities and their impact on households. PARFA, as an environmental component of PARFA, contributes through the dissemination of press articles and reports. An environmental information web system is also being rolled out, and the site will be accessible to a large target audience.

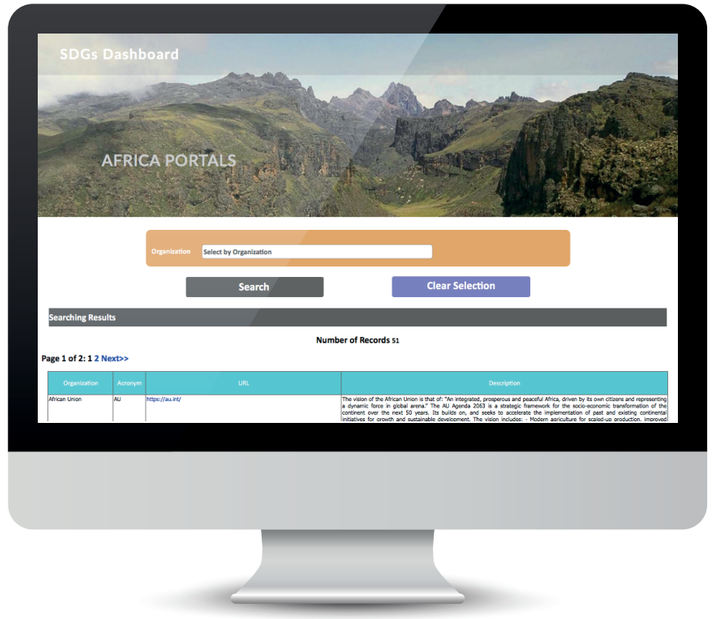
Setting up and operationalising a platform for sharing environmental information

The RFS project in Niger, ProDAF, with support provided by the Zinder URGP to the Regional Technical Working Group / Sustainable Land Management (GTR-GDT) / Zinder, has set up a platform for sharing environmental information.

Science-Policy Interface

Training workshops for technical experts from the 12 RFS countries were organised through component 1 of the Regional Hub project. Participants were provided hands-on information and guidance on existing scientific knowledge support interfaces. The platform developed by UN Environment is a tool for training in Sustainable Development Goals (SDGs), accessing socio-economic data and a repository of organisations working in Africa, linked to resilience and food security. The platform is expected to support decision-making through awareness-raising and capacity building in evidence-based decision-making. It is intended for key environmental and agricultural actors at various levels in science and policy. Two best practices have already been documented, including the best practice from the TerrAfrica SIP projects, as well as the best practice from the Kagera Transboundary Agro-ecosystem Management Project (TAMP).

Within the platform, national environment profiles for the 12 implementing countries of RFS have been prepared using the food security related SDGs and linked targets. The profiles have been migrated to the platform with a live interface to enable regular and continuous updates by the countries.



ASSESSMENTS CONDUCTED BY THE REGIONAL HUB

Several background studies and preparatory activities were undertaken by FAO and UN Environment to strengthen science–policy linkages throughout the programme, including:

- A review of the status of sub-regional knowledge platforms on the continent;
- An analysis of support needs per country project (in terms of advice, capacity development, tools) related to policies, governance and science–policy;
- A study of ongoing initiatives and suggested policy process for the RFS Science–Policy Interface, which led to a strategic plan for the establishment and implementation of the Science–Policy Interface.
- A compendium of the latest scientific and technical knowledge, tools and methods relevant to the programme (made available on the aforementioned platform).

Section 3.

Act

Photo: © RFS Niger

Resilient FOOD SYSTEMS

Leveraging the private sector for scaling up sustainable value chain development

A critical path for RFS to address transformation in African agriculture is to engage the private sector and increase investment in agriculture as a whole. It does, however, represent a major challenge, given the relatively difficult business case for investment in smallholders in the drylands of least-developed countries. The importance of private sector engagement in sustainability and resilience for food security lies primarily in securing a consistent supply in quantity and quality to meet market demand; this is where value chain stimulation and a range of private sector actors is key. Land users and farmers are themselves part of the private sector, and in sub-Saharan Africa represent the largest investors of labour, knowledge and expertise in land management in the target regions of RFS. The programme directly promotes increased private sector investment in climate-resilient and low-emission food value chains.

The value chain approach is an increasingly important way of conceptualising and structuring rural development interventions in the region. This pathway focuses on the value of diversification and low external input options, while still leveraging the power of market opportunities. Country project activities build on existing experience in agro-food value chains on the continent and support strong partnerships.

Photo: ©RFS Niger

Private sector engagement in key value chains

The RFS Eswatini project representatives are working to incorporate RFS lessons into the national agricultural plan to ensure all chiefdoms undertake this kind of integrated planned approach. The Climate-Smart Agriculture for Climate-Resilient Livelihoods Project (CSARL) is developing a platform to promote private sector engagement in key value chains, while supporting the scaling up of the Chiefdom Development Plan (CDP) approach. The project is expected to become key evidence and an example for the government to influence national budgets.

Value chain development in Ethiopia

A value chain analysis study conducted in each of the 12 implementing districts of the RFS Ethiopia project identified potential agricultural commodities for value chain development. The study contributed to policy decision-making at the districts, three of which ended up selecting the development of a diary value chain, while five others opted for engaging in zero-grazing and fattening of cattle and small ruminants. Three districts are working on developing crop and vegetable chains and one district is engaged in the poultry and fish value chain. Boricha district has already succeeded in linking small-scale farmers with markets for their maize and haricot bean products.

Over **1,000 smallholder farmers** are benefiting from value chain improvement in Ethiopia through impacts such as:

- Improved market access has increased the farm gate price of milk by **2 birr (US$0,17) per litre on average**.
- Small ruminant and cattle fattening beneficiaries have received more than **25% net profit per head** of animal.
- Onion producers have **increased their production by 45%** by applying improved quality seed. In addition, the farm price has **increased by more than 50%** due the quality improvement and bulk supply. The onion producers constructed a product bulking centre with the support of the project.
- The groundnut, maize and haricot bean producers have **improved their production by 30–45%** per hectare of land by using improved seeds.
- In an integrated approach to the value chain, maize producers have become **improved seed** suppliers.

Photo: © Katherleen Colverson (CGIAR)

Agricultural marketing and ICT solutions for improved decision-making

The RFS Eswatini project has been hosting flea markets for indigenous chickens and goats in various communities within the project area. In partnership with the Ministry of Agriculture, five flea markets for indigenous chickens, two auction days for goats, eight agricultural shows, and one field day have taken place this year. These flea markets provide an opportunity for farmers to showcase their products in the various value chains, therefore acting not just as a sale platform, but also providing a chance for cross learning between farmers.

In Eswatini, the project has developed an Agricultural Marketing Information System (AMIS), which disseminates varied information on agricultural practices to assist farmers to make informed decisions. Information provided includes weather, climate-smart agricultural practices, and targeted business and market linkages information, disseminated specifically on market days. This AMIS distribution is done through a bulk Short Message Service (SMS) system to expand outreach to farmers in the project area.

Market integration

In the RFS Burundi project, as a result of the project activities this year targeting market integration, 55% of the smallholders in the project implementation area have moved beyond subsistence farming and are now marketing their produce, with the predominant crop being Irish potato.

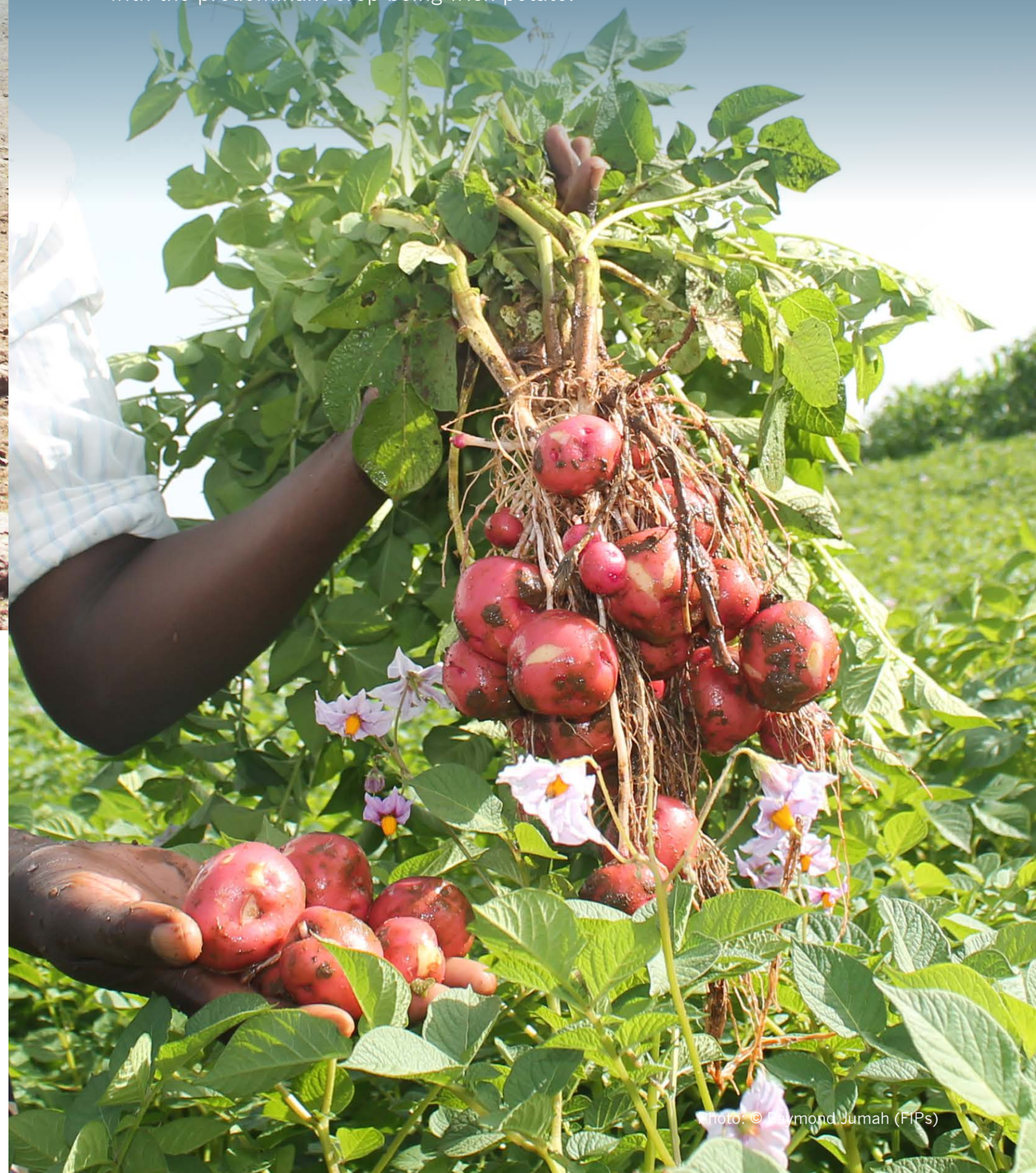


Photo: © Raymond Jumah (FIPs)

Agricultural centres for value-add processing

The RFS Nigeria project has focused this year on building the capacity of farmers to produce high-yielding crops, and on connecting them to relevant off-takers. To enable this, training of trainers and other activities focused on Good Agricultural Practices (GAPs) for rice and groundnut production, targeting extension workers, community health workers and nutrition officers.

As a novel integrated approach in Nigeria across the project implementation areas, 14 hectares have been allocated for construction of agricultural centres. Four centres have been established, four are underway, and six centres are under approval for construction. The agricultural centres act as a central area for harvesting, production and post-harvest processing equipment for rice, maize, sorghum, groundnut and cassava, targeting five communities in each intervention area. They will house an array of equipment including: groundnut oil expellers, decorticator and harvester machines, cassava slicing, pressing and sieve machines, and rice transplanters and milling machines.

The sustainable agricultural centres are designed to demonstrate the viability and benefits of sustainable agricultural practices under integrated natural resource management (INRM), sustainable land and water management (SLWM) and climate-smart agriculture (CSA) across the seven states. On completion, these centres will act as processing points for all the smallholder farmers in the surrounding communities and allow for value addition and income generation.

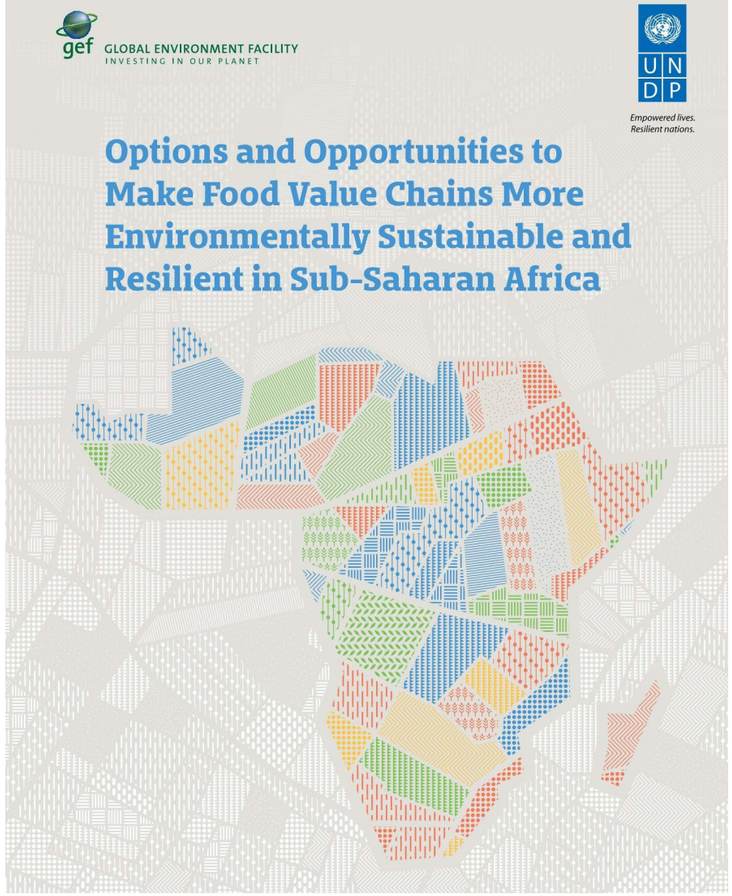
A MODEL BEING SCALED OUT

The example of these agricultural centres is already being scaled out to other states in Nigeria – the Gombe State Governor is planning to construct 114 more agricultural centres, replicating the same structure the project is establishing in all the wards in the state. After seeing initial results from the RFS Nigeria project, the governor decided to adopt this model as of one of the ways to encourage farmers and get the best in terms of food security.

Photo: © Jen Cupp (USAID)

UNDP and AGRA provide training in sustainable and resilient food value chains

Lessons learned through an initial assessment conducted by UNDP and AGRA indicate that eight of the 12 country projects are still setting food value chain implementation specifics, such as farmer targets and sustainable and resilient food value chain (SRFVC) development activity schedules. To respond to this, a regional training workshop on greening agricultural food value chains was hosted by AGRA and UNDP on 17–19 September 2019 in Nairobi. The purpose of the training workshop was to (a) build capacity in the application of value chain concepts to farming operations; (b) raise technical awareness of how to make food value chains more sustainable and resilient; and (c) identify the training needs within country-specific value chains. Over 30 people attended the workshop, including representatives from Hub partners and most RFS countries. Over the course of the 3-day workshop, participants used value chain prioritisation and mapping approaches to identify where and how to integrate resilience-building practices and build value chain actor capacities. Country teams then developed action plans with detailed steps toward building resilience and sustainability within their prioritised value chains. Additional support on offer by both Regional Hub partners includes the development of technical assistance on SRFVCs, joint field missions, and assessment of value chain/stakeholder mapping entry points. The work also builds off a UNDP and GEF paper, *Options and Opportunities to Make Food Value Chains More Environmentally Sustainable and Resilient in Sub-Saharan Africa.*



Job creation in off-farm and on-farm livelihoods based on natural resource management

Activities in value chain promotion in Ethiopia, as a result of the RFS project activities this year, have resulted in significant job creation, with over

7,300 jobs
56% female
7,300 male

3,101 off-farm jobs
16% of which benefit urban settlers
4,209 on-farm jobs

1,056 jobs in value chain development

- **Dairy product marketing**
- **Onion production and marketing**
- **Small ruminate fattening**
- **Cattle fattening**
- **Maize, haricot bean and groundnut production and marketing**

1,379 jobs related to agricultural diversification activities

- **Vegetable and fruit production and marketing**
- **Beekeeping and poultry production**
- **Fishery and seedling production and marketing**

1,774 jobs related to climate-smart agriculture

Photo: ©Tine Frank (USAID)

Rural advisory services

Rural advisory services

The RFS programme is leveraging existing rural advisory services platforms to identify operational and ultimately self-sustaining models of capacity building in the region under INRM for smallholder production.

Climate-smart agriculture demonstration plots

The RFS Nigeria project has developed **250 demonstration plots** for climate-resilient sustainable agriculture across the 50 target communities. Each community has, in turn, held a training session for an average of 50 smallholder farmers, specifically targeting women and youth. Each demonstration plot is 0.25 hectares, and the project has developed a total of 62.5 hectares of demonstration plots to showcase climate-smart agriculture (CSA) practices.

Partnering with government extension and meteorological services

Through the Department of Agriculture Research Services (DARS), the RFS Malawi project is linking to extension staff in selected districts, and this year has **provided training to 34 district-based extension staff.** In addition, through a partnership with the Department for Climate Change and Meteorological Services, training was provided to staff in two districts, focusing on the integration of meteorological forecasts and crop planning using the handbook previously developed by the M-Climes project.

Focus on lead female farmers in Malawi

In Malawi, the RFS project set up three demonstration plots for agrobiodiversity in the five sub-catchments the project is working in. Within the sub-catchments, **training was subsequently provided to 20 lead farmers, 80% of whom were women.**

Indigenous knowledge for participatory mapping of flora and fauna

In the RFS Eswatini project, identification of indigenous species of flora and fauna that provide value to the community is promoted through the active involvement of indigenous people of each of the communities. This is done through participatory resources mapping approaches to **ensure community ownership and conservation of these species.**

SMS extension information

In RFS Kenya, through the Upper Tana-Nairobi Water Fund (UTNWF) project activities, **25,000 farmers receive two extension information messages per week through a mobile phone platform covering the Upper Tana watershed.** These messages disseminate key contextual information and techniques to assist and equip farmers in the region to implement sustainable land management (SLM).

Building capacity and skills to address resilience through agrobiodiversity

Increasing the resilience of local food systems through better use and conservation of agrobiodiversity is key to food security. Ongoing loss of agrobiodiversity leads to higher vulnerability of plants and animals to climate change, pests and diseases, which puts food security and nutrition at risk. Diversification of production systems by using multiple species, breeds or varieties, and integration of crop, livestock, forest and aquatic biodiversity, helps improve livelihoods and nutrition, while reducing the negative impact of pesticides on the environment. As such, RFS has a strong focus on agrobiodiversity to build resilience in agriculture systems.

Through RFS Burundi, the programme addresses sustainable food production and climate resilience in the country' highlands. The negative effects of climate change are increasingly jeopardising water, agriculture, livestock, forest and human health. The decline in crop production is mainly driven by soil degradation, unsustainable practices and agrobiodiversity loss.

The RFS Burundi project aims to help farmers to improve soil health, diversify production systems, strengthen community management of seed, and increase access to seed diversity, which are the key strategies for better resilience and sustainability in smallholder agriculture. FAO, the main implementer of the project, partnered with Bioversity International to conduct training in how to assess diversity and constraints for its better use and conservation, using participatory diagnostic techniques developed under the Diversity Assessment Tool for Agrobiodiversity and Resilience (DATAR).

This decision-making tool was created to help project actors to assess diversity and devise interventions that promote the use of crop, livestock, or aquatic genetic diversity to increase productivity and resilience. More

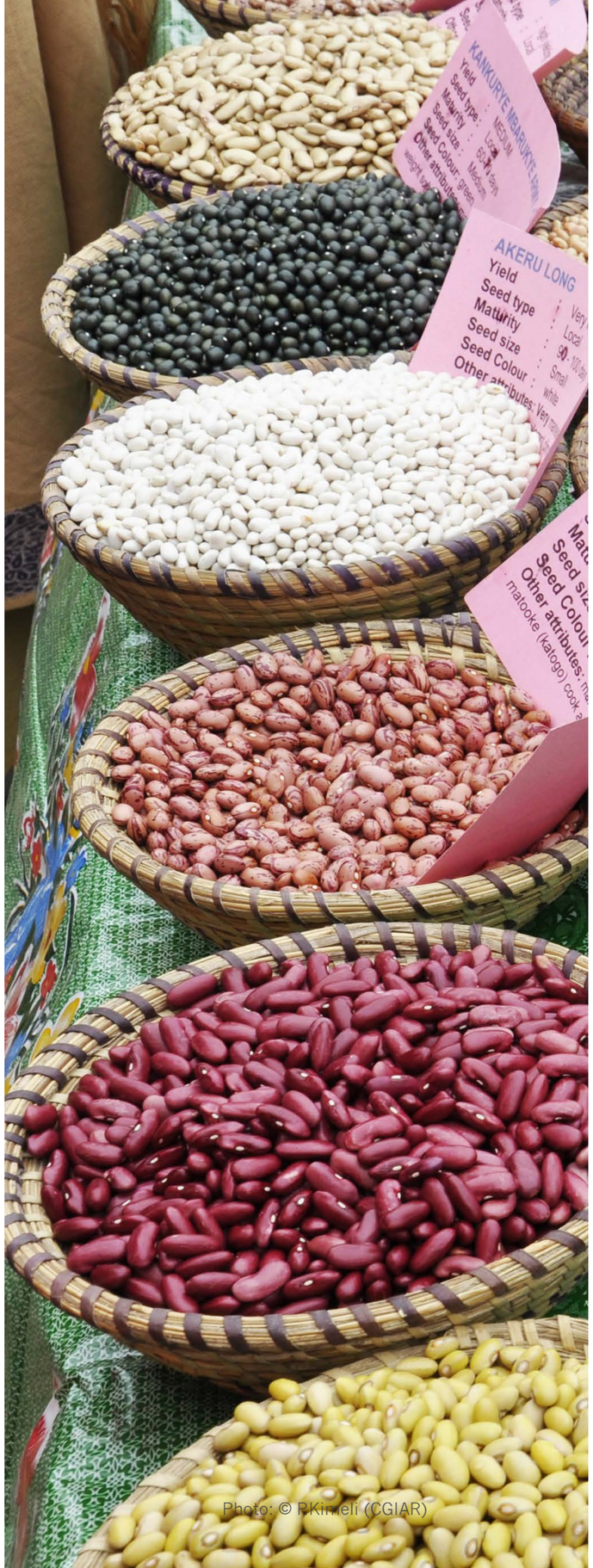


Photo: © RKimeli (CGIAR)

specifically, the purpose of DATAR tools are to identify and characterise local crop varieties and breeds, and to identify ways to improve access, selection, and sharing of crop and animal genetic diversity at the community and national levels. Co-organised by both Regional Hub partners, the training took place in Gitega, one of the project sites, on 20–24 May 2019. Participants included farmers, officers from the agriculture, livestock and environment sectors, researchers and project leaders. They were presented with participatory DATAR tools and gained hands-on experience in using the different methods.

The aim of the training was to equip the participants with knowledge and practical experience in how to collect sound data using participatory diagnostics, as well as how to establish and manage community seedbanks. In addition, the project team gave support to community-level conservation, as the training presented the principles and concepts of community seedbanking, which is a key strategy both for conserving and also for increasing access to good quality seed diversity.

Feedback from participating farmers concluded that conserving and using different varieties of crops is a critical issue, highlighting concerns around the loss of local maize varieties that are productive and resistant to pests and diseases. These local varieties are being replaced by hybrid maize seeds that are expensive, and require inputs that may not be affordable to farmers.


Photo: © RFS Burund


Photo: © RFS Burund


Photo: © RFS Burund


Photo: © RFS Burund

Training in sustainable land management in Ethiopia

Through RFS Ethiopia over **56,000 beneficiaries** have been trained this year in key topical areas for SLM, namely:

- Different options for watershed management technologies;
- Soil fertility management techniques, including crop rotation and producing and making compost;
- Seedling planting and management; and
- Degraded land area closure and zero grazing.

Training country projects and documenting the impact of Farmer Field Schools

As part of Component 2 of the Regional Hub, focused on upscaling of integrated approaches, FAO led a sub-regional training and knowledge sharing workshop on climate-sensitive, agropastoral field schools, which took place in Burkina Faso from 3 to 6 December 2018, involving participants from Burkina Faso, Niger, Senegal, Burundi, Ethiopia and Uganda.

The training was linked with the development of a draft guide for practitioners on how to develop local initiatives on sustainable food systems and value chains, and the role of intermediaries and advisory services. In order to build capacity for Monitoring, Evaluation and Learning (MEL) of Farmer Field Schools (FFS), project representatives from Burkina Faso, Malawi, Ethiopia and Kenya attended a training workshop held in Thailand by FAO.

In collaboration with Wageningen University, **a guide was developed on Climate Change Adaptation (CCA) curricula for participatory agricultural advisory services. Best practices from Burkina Faso, Niger, Senegal and Burundi are included.** In addition, discussion groups were hosted through the FFS platform, involving extension and advisory service practitioners from the 12 RFS country projects. *A Global Survey and Review of Farmer Field School Experiences* was published in two academic papers. The publication includes a global analysis of the impact of the implementation of FFS, considering different dimensions such as socio-political, financial and natural-human. Thematic pages have been placed on the FFS platform website integrating the following themes: livestock, aquaculture, gender, forestry, institutionalisation, business, soils, land management and landscape approach and resilience.

This year, the RFS project in Burundi has provided intensive support to institutionalising and operationalising FFS, in close collaboration with the Government General Directorate for Mobilisation for Self-Development and Agricultural Extension. Thirty FFS facilitators for 43 FFS groups have been redeployed and 32 additional FFS groups targeted for the second round of the training cycle. In terms of institutional capacity building, the project has had key sensitisation events across three agriculture and rural development clusters, in the three provinces where the project is being implemented, with over 150 representatives, including government officials, technical and financial partners, territorial administration officers, NGOs and community representatives.

In order to directly address improvement in livelihoods, over 1,400 households grouped into 43 FFS have conducted training on good agricultural practices, SLM, experimental trials on productivity and agricultural production resilient to climate change, and the conduct of Agroecosystem Analysis (EASA) on various crops. In addition, income-generating activities, involving beans, wheat, corn, potatoes and soybeans, have also been carried out this year.

Operationalising FFS in Burundi

Strengthening by-laws and tenure at village level

In Tanzania, the RFS project has been targeting approval of village and inter-village land use management by-laws to enforce implementation of the land use plans that are in place. **Over 800 people have been trained in the development of village land use plans, negotiations, and in enforcement of by-laws for improved natural resources management.** The targeted individuals for training included members of the Village Land use Planning Committees, Village Natural Resource Management Committees (VNRMCs), village councils, village leaders, and selected elders in the project intervention areas.

This project approach has focused on the implementation of land use management plans through the issuing of the Certificate of Customary Right Occupancy (CCRO).

THESE EFFORTS AT VILLAGE LEVEL HAVE RESULTED IN:

- **4** District Participatory Land Use Management Teams
- **24** Village Natural Resources Management Committees
- **8** Inter-village Village Natural Resources Management Committees
- **17** Village Land Use Planning Committees
- **5** Joint Land Use Planning Committees

In addition to efforts within individual level village planning structures, **35 District Participatory Land Use Management Team members have been trained in facilitating village land use planning and supporting the implementation of by-laws.** At the national level, The National Land Use Planning Commission has been integrated and has undertaken joint village land use planning in four districts in Tanzania to scale up participatory land use planning.

Photo: © Wolff (UN)

In Burkina Faso, the RFS project, in collaboration with the General Directorate of Land Tenure, Training and Organisation of Rural Populations, has had a similar approach to bolstering rural land use planning, supporting town hall meetings for Service of Rural Lands (SFRs) to issue appropriate acts. The combined efforts have resulted in the training of 15 agents of change, allocating SFRs for the communes, training, archiving equipment, and exchange and experience-sharing trips from rural land services (to communes with functional land services).

Village-level Committees targeting improved watershed management

In Malawi, significant progress has been made this year by the RFS project to establish and revamp 35 Village Natural Resource Management Committees (VNRMCs) in the five sub-catchments to develop and implement Village Level Action Plans (VLAPs) for each identified micro-catchment. The communities in the five sub-catchments have developed 23 VLAPs for each identified micro-catchment. The VLAPs are currently being presented to Area Executive Committees and District Councils for approval. **The project has established five Catchment Management Committees in accordance with the Water Resources Act (2013) as a local institution for managing the targeted five catchments.** The project has also revamped/established the VNRMCs at Group Village Headman (GVH) level to facilitate the implementation of catchment management related activities. Previously, projects in Malawi used to form Project Implementation Committees (PICs) at village level to implement such activities, which has proven to be unsustainable once the project phases out.

The Catchment Management Committees, which have been put in place, will work with existing national and local institutions, such as the National Water Resources Authority, District Environmental Sub-Committee (DESC), ADC and VNRMCs to undertake catchment area planning and management. The project also delineated five sub-catchments for the five water resources units. Communities delineated micro-catchments from the five sub-catchments as a basic unit of planning and implementation of catchment area management interventions.

Three Catchment Area Management Planning Teams have been established at district level to guide the communities in planning and implementation of catchment area management plans.

GHANA

The RFS Sustainable Land and Water Project in Ghana has a similar approach at a landscape scale, integrating community watershed management planning.

Extension training on climate change and soil fertility management in Niger

To achieve community resilience against major negative impacts of climate change, ProDAF, the RFS project in Niger, carried out extension services training. It aimed to broadly disseminate knowledge and practical tools on the techniques of Assisted Natural Regeneration (RNA), water and soil conservation techniques and the use of organic manure in the area of intervention. Training sessions included topics such as climate-smart techniques, soil fertility management and integrated pest management. It also promoted the use of **improved seed varieties adapted to emerging climatic conditions** and quality inputs. The training was an innovation in the extension programme to integrate good agricultural practices, including row seeding, fungicidal seed treatment, 3-seedlings thinning and NPK micro-dosing.

Photo: ©ag4impact.org

Photo: ©icrisat.org

Photo: ©RFS Niger

In the RFS Uganda project, extension workers, land officers, district and sub-county council members, and representatives of Community Based Organisations (CBOs) have been identified from each of four districts within the project intervention area and trained in principles and practices of INRM. The hands-on training involved demonstrations of farmer-assisted regeneration of trees, soil and water conservation, and CSA and practices, such as minimum tillage.

2,000+ community members
belonging to 87 FFS were identified, registered and notified of the training plan for SLM and INRM.

60% Female
40% Male

A training needs assessment for these schools was finalised to guide the training.

NIGERIA

70 communities
across the seven states of implementation in Nigeria have agreed, through the state Agricultural Development Programme's (ADP's) advocacy and awareness meetings with community leaders, to collaborate with the RFS programme.

490 cooperative groups
working with the RFS Nigeria project identified.

216 Female
234 Male
42 Mixed

Each cooperative group consists of a maximum of **30 individual farmers** who will build their capacity using the SLM system.

11,833 farmers trained
in integrated agricultural and livestock management practices,

especially in the cultivation of rice and groundnuts across the selected communities in the 14 Local Government Areas (LGAs) by the Women Farmers Advancement Network in Nigeria (WOFAN), a local NGO which is also partnering with the project at the federal level.

In terms of new production technologies, 210 women and youths have been trained on integrated agriculture and livestock management with the focus on SLWM and CSA.

Scaling up innovative solutions and best practices

Scaling SLM and water harvesting innovations

The RFS Kenya project, the Upper Tana-Nairobi Water Fund (UTNWF) has directly reached over 23,000 beneficiary families, with a total of 51,073 hectares of land that was degraded by water-borne erosion now under SLM. The families that farm this land are receiving various project services, including training in SLM, assistance in rainwater harvesting through the installation of over 10,200 farm water pans, and the distribution of over 1.2 million quality tree seedlings. The project is addressing root causes of land degradation, and has designed a drip irrigation system for smallholder farmers, targeting 3,000 rural families, thereby cutting their water usage by an estimated further 50%. This is resulting in higher production, water savings, and healthier rivers with resilience to climatic effects.

Over **18,000 smallholder farmers are being supported by technology in the form of water pans for storing water for irrigating crops during the dry season.** This has a positive impact for the main water supply to Kenya's capital city, Nairobi, by limiting downstream abstraction, and, as a sustainable water supply for crops, it reduces erosion upstream as well. During the intervention period, over 6,900 water pans have been developed in the Upper Tana region.

UTNWF has partnered with Murang'a County to plant one million avocado seedlings over two years. The joint initiative is a duel cost sharing to diversify on-farm incomes and food security for farmers in the watershed, and contribute to well-conserved farms and riparian lands. The Water Fund is embedding capacity within the governance structure at county level in Kenya by supporting county-based technical officers to provide extension services.

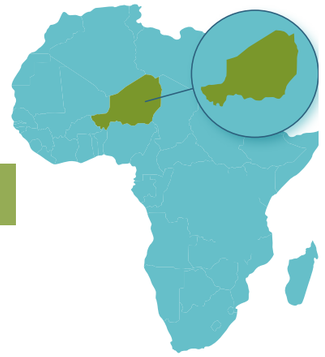
UTNWF's partnership with Murang'a county has already resulted in:

- One million tree seedlings planted through a **50:50 co-investment**;
- Support to county technical officers to provide extension services and the purchase of **500,000 seedlings** for farmers within priority areas; and
- The county government has agreed to significantly scale-up its investment in tree crops. This will contribute to reduced erosion, strengthened nutrition and food security, as well as additional revenue for local farmers, estimated at **US$8 million** annually once fully established.

Photo: ©RFS Kenya

Mapping watersheds for SLM

In Burundi, the RFS project has been active this year in identifying seven watersheds for the implementation of SLM. This was possible through the production of topographic maps by the Rural Engineering Department of the Ministry of Environment, Agriculture and Livestock.



Successful scaling up and innovative solutions – best practice from the Niger project

Family Farming Development Programme (ProDAF)

In a context of high vulnerability of family farming, amplified by the effects of climate change, ProDAF is tackling the main drivers of environmental degradation in Niger through the promotion of a holistic approach to improve the productivity of agricultural systems where food insecurity is directly related to the degradation of the environment. The project focuses particularly on strengthening sustainable family farming and improving market access for smallholder farmers.

At national level, the project is led by the **Ministry of Agriculture and Livestock**, which works closely with the **High Commission for the Nigeriens Nourish Nigeriens initiative (HCi3N).**

Major stakeholders in the project include the Regional Directorate of the Environment, Water User Associations, local authorities (communes), Public Building and Works, regional and departmental services for waterworks, specialised service providers and the Regional Agriculture Chambers. ProDAF is also partnering with local research institutions and centres of excellence, including the National Institute for Agricultural Research of Niger; ICRAF and the International Centre for Research in the Semi-Arid Tropics (ICRISAT), both CGIAR centres, for expertise on agricultural practices and innovative planting materials; in addition to the AGRHYMET Regional Centre, for observation and management of climate risks.

The project also aims to engage over **22,400 households** or close to **157,000 people** (including **30% women** and **30% youth**) as direct beneficiaries.

The RFS investment in ProDAF contributes directly to multi-sectoral targets, such as to:

- Improve infiltration into the water table by reducing water erosion and silting at the level of production basins, enhancing ecosystem sustainability as well as resilience of production systems, with a direct impact on strengthening of food security;
- Mobilise water through 16 Water Mobilisation Works, including 12 thresholds and 4 ponds. ProDAF's total target (including co-investment from other partners) comprises 150 works and the national government target is 700 works;
- Reclaim land of over 8,900 hectares – against ProDAF's total target of 20,000 hectares and a national goal of 200,000 hectares of watersheds to be treated under the i3N national investment plan;
- Strengthen biodiversity conservation, both through the development of pools corresponding to Ramsar sites and passage corridors, where the elimination of the invasive species *Sida cordifolia* will allow a return to original, more diverse ecosystems;
- Strengthen soil carbon storage (1.4 tonnes of carbon equivalent per hectare per year, or 350,000 tonnes of carbon equivalent per year).

Globally, ProDAF is contributing to the following Sustainable Development Goals:

SDG 12, concerning the establishment of sustainable production methods, including the rational management of natural resources;

SDG 13 on combating climate change, including strengthening resilience and coping capacities in the face of climate hazards and natural disasters;

SDG 15 concerning the preservation and restoration of terrestrial ecosystems, including the fight against desertification and the preservation of freshwater ecosystems.

ProDAF is working on integrated solutions to improve food security while addressing drivers of environmental degradation. The project is demonstrating and scaling up innovative approaches to enhance resilience and climate adaptation, particularly through actions related to integrated natural resources management and land restoration, as well as improvement of rural infrastructure. In particular, ProDAF's expected impacts include, at the national / local level:

SCALING UP SUSTAINABLE LAND MANAGEMENT

The recovery of degraded lands has been one of ProDAF's most successful activities, especially due to the strong involvement of beneficiaries. The approach adopted allows the poorest to access the activities and to take the best advantage of them. A success case has been ProDAF's work in collaboration with WFP and GEF to improve the management of degraded sites through the control of invasive plant species.

Another important focus of ProDAF and its partners has been on the establishment and operationalisation of an exchange platform on environmental and agricultural information. Dissemination of information regarding best practices for INRM and SLM has been greatly successful. Among the most well-known and practiced methods by smallholder farmers are:

Assisted Natural Regeneration (RNA; 71%), half-moon (58%) and zai (42%).

These three practices are highly popular due to their contributions to increase in yields, which can be even tripled depending on the combination of technologies adopted. The latter include improved seed varieties adapted to new climatic conditions.

The project has also focused on the acquisition and adoption of innovative monitoring techniques. Various partners at all levels of implementation and decision-making were trained in geographic information systems (GIS), allowing the use of a new software to monitor and report the project's impact.

Additional efforts in knowledge management and capacity development include the organisation of several workshops to share regional concerns in Food and Nutrition Security. With high level of participation (nearly 900 representatives from regional and departmental levels), these events have been effective in taking stock of achievements, sharing experiences, and preparing for irrigated crop seasons in the region.


Photo: ©RFS Niger

IMPACTS TO DATE IN NIGER FROM THE PRODAF PROJECT

- 10,491 ha
  (i.e., 50% of the total target) of degraded land recovered upstream from the watersheds (of which 3,267 ha under RFS financing)
- 75,065 ha
  of assisted natural land regeneration (RNA), (i.e., 39% of the total target of which 20,670 ha under RFS financing)
- **Realisation of water mobilisation works:**
  3 built and 28 studied
  out of 150 planned in all categories
- **Increase of arable and grazing land, boosting the agropastoral production and /or productivity of the sites treated:**
  75% increase
  of biomass rate in the Maradi region (compared to 2017 control)
  63% average soil recovery rate
  78% recovery rate of 2018 plantations on average in Tahoua
- **Strengthening of biodiversity with the introduction and/or appearance of new varieties of herbaceous, tree and animal species:**
  39% resurgence rate
  of woody and herbaceous plant species that had disappeared due to climate change
- **Increase in agricultural production:**
  up to
  3 times higher yields
  through the adoption of SLM best practices
  Halving of the lean season
  from 4 to 2 months (depending on location) by using remuneration received to pay for food, small ruminants and developing income-generating activities
- **Increase in household income:**
  XOF 70,000
  (approximately US$117) per year through the sale of products and by-products
- **Reduction of GHG emission:**
  currently estimated at
  -6.3 tCO_2eq per hectare
  per year for biomass, and
  -5.3 tCO_2eq per hectare
  per year for soil (GEF / PASADEM completion study report)

KEY LESSONS LEARNED

Three major challenges identified which are key to the success of the land restoration process relate to:

- ✓ Respecting construction standards;
- ✓ Ascertaining land tenure; and
- ✓ Improving the functionality of management structures of recovered sites, such as Water User Associations and Management Committees.

Engaging scientific institutions in impact monitoring allows for:

- ✓ Improved quality assurance and "scientifically recognised" monitoring and evaluation of ecological impacts; as well as
- ✓ Effective communication of ecological benefits.

Successful replication and scaling up of best practices depend to a large extent on effective and efficient multi-stakeholder collaboration to build on synergies and create the conditions for achieving impact on land restoration, as well as enhancing biodiversity and adaptation to climate change.


Photo: ©RFS Niger

Section 4.
Track

Photo: © Georgina Smith (CGIAR)

Resilient FOOD SYSTEMS

Multi-scale monitoring and assessment of global environmental benefits and socio-economic progress

Data aggregation and comparison to demonstrate impact at scale

At the Regional Hub, and with overall guidance from the **Technical Advisory Group (TAG)** on monitoring and assessment (M&A), Conservation International (CI) led the development of a conceptual framework for multi-scale M&A of the project, providing guidance on methods and indicators for assessing ecosystem services and socio-economic benefits arising from the programme at regional and national levels.

It proposes indicators of change in ecosystem services, socio-economic benefits, and resilience of food security that could be adopted for a holistic assessment of the country projects. It also provides recommendations on how to assess these indicators at two levels: country level and regional level. The country level data will be aggregated and compared with the measurements at the regional level to demonstrate impact at scale. The European Space Agency has also contributed to this process, as part of its Earth Observation for Sustainable Development (EO4SD) initiative.

Several Hub partners contributed to the exercise as well, advising for instance on topics related to agrobiodiversity (Bioversity International), gender mainstreaming (ICRAF) and food and nutrition security (FAO).

GIS in Ethiopia

The RFS project in Ethiopia is working to establish a web-based, GIS embedded system for multi-scale monitoring of ecosystem services and global environmental benefits (GEBs). The monitoring database will be based at the federal Environment, Forest and Climate Change Commission and six regional environment bureaus. The system will have a data collection and submission centre at district level. Trained project coordinators and development agents will enter up-to-date data, using tablets, in the database online, either using the internet or by sending an SMS.

The system will use WoredaNet, which is a government-owned and run internet network system. The system will also get additional, satellite-based data on a quarterly basis to show the changes in land use, land cover, degradation level, soil fertility and underground water level. The database will be accessible for regional, federal and Project Management Unit (PMU) professionals to view and process the data, so as to provide decision-makers with meaningful information.

SHARP in Uganda

The **RFS** Uganda project applied the Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists **(SHARP)** tool to establish basic indicators of resilience, and to understand strengths and weaknesses of the target households. The resilience indicators highlighted included production systems and practices, environment, and social and economic status. The baseline data collection is focused on current values of acreages of cropland/rangeland / forest under integrated natural resources management (INRM) and sustainable land management (SLM) per district; current yields; current water availability levels; gender disaggregated land users and their alternative livelihood options; use of indigenous crops; fodder sources; agroecological and social resilience status; and levels of risk and vulnerability in the project area.

SHARP is a self-assessment survey for farmers and pastoralists. Each question in SHARP is linked to individual resilience indicators, which can be used as a proxy for the level of resilience of farmers and pastoralists to climate change. SHARP involves three major phases:

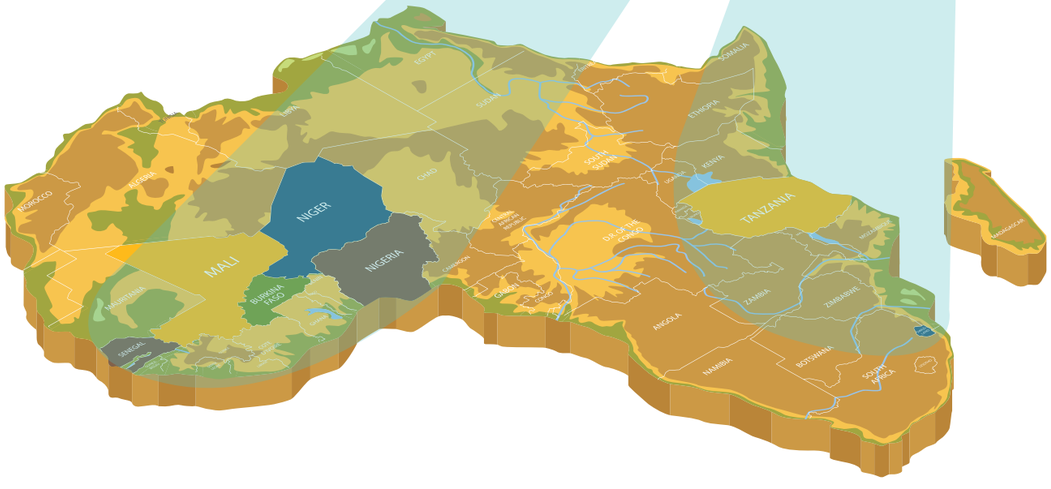
- A participatory self-assessment survey of smallholder farmers and pastoralists regarding their climate resilience;
- A gap analysis and assessment of the responses at both the local level with the farmers and pastoralists in a rapid assessment; and also through a cross-sectional review of multiple assessments, which includes engagement with local government officials and policy makers to assess agricultural and pastoral policies regarding effectiveness and gaps; and
- Use of this information in conjunction with climate and scientific data to inform and guide farmers' practices as well as curricula and local and national policies.

Monitoring resilience using satellite data

Progress has been made towards tracking GEBs and socio-economic benefits in project countries and sites. Baseline data from global datasets, including from CI and the European space Agency, have been made available online through the RFS Resilience Atlas and the Trends.Earth platforms.

The Resilience Atlas allows for overlays of various datasets for decision-making on different factors (e.g., climate, land cover, stressors and shocks, as well as assets and capacities) affecting food security. Trends. Earth measures land degradation by remote sensing imagery, and allows for customised datasets to improve localised analyses to better inform decision-makers.

Several RFS country project teams are already accessing and using the information within the Resilience Atlas. Representatives from Nigeria, Ethiopia, Burkina Faso, Eswatini, Niger, Senegal and Tanzania reported that they have accessed useful information on land degradation, land cover, land productivity, forest change and rainfall patterns, according to a recent survey. Further training sessions with the country teams will be organised to improve the use of the platforms.



WAYS OF ACQUIRING DATA TO ASSESS INDICATORS

Social surveys and qualitative data collection: Draws on individual and household surveys, interviews and focus groups

Earth observation: Uses sensors on satellites or other platforms to gather information on characteristics of earth surface (land cover, productivity, etc.)

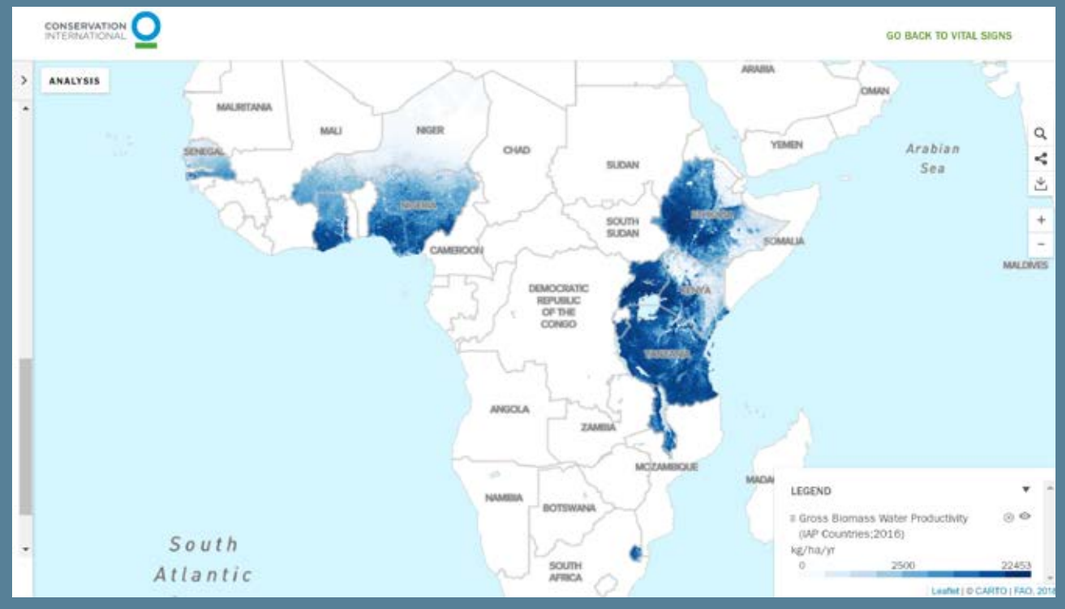
Modeling: Draws on mix of datasets, and uses statistical or computer models to assess biophysical or socioeconomic information

COMPONENTS OF MONITORING FRAMEWORK AND THEIR DATA SOURCES

Ecosystem services: The benefits humans derive from functioning ecosystems (such as hydrological and climate regulation, nutrient and carbon cycling, pest and disease control)

Socioeconomic benefits: Benefits of project activities to households and communities, disaggregated by gender

Resilience of food security: Ability of food system to maintain food access, availability, and utilisation in the face of chronic and acute stresses and shocks



Example indicators of contextual factors

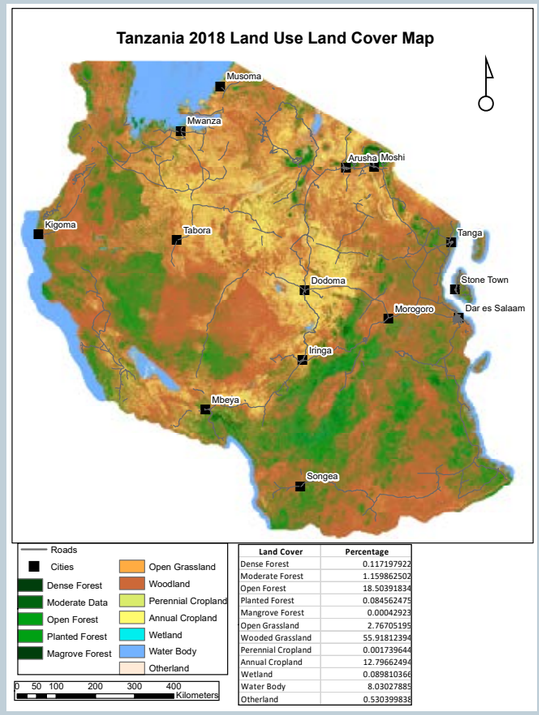
Land cover maps

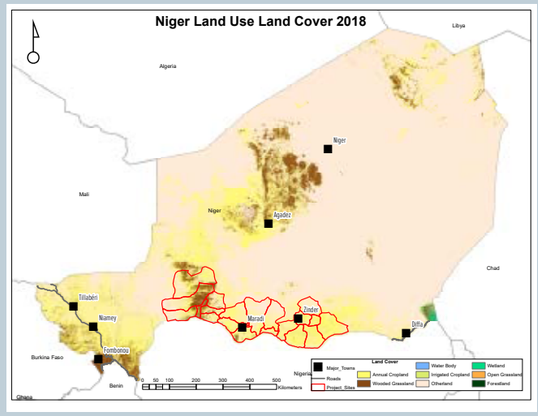
Land cover maps for all the participating countries of the RFS programme were developed using Sentinel 2 imagery and 2018 satellite data. The maps will serve as the baseline for the land cover status for these countries, both to guide implementing project activities, and to monitor the impact of project interventions on land cover between the initial year and the final year of the project.

These maps will also aid the projects in implementation of land improvement activities and in monitoring changes in the project sites. In addition, they can be used by individual countries in spatial planning for disaster management and biomass estimation; and also for mapping land degradation, erosion, crop production estimation, changes in forest cover, carbon sequestration, etc.

The map for **Kenya** was produced jointly with the Department for Resource Surveys and Remote Sensing. **It is already being used for reporting GHG inventories by the Climate Change Directorate in Kenya and also by the Kenya Forest Service to implement and monitor REDD+ projects.**

All the land cover maps produced are now available at https://foodsecurityiap.resilienceatlas.org/map. The participants gave initial feedback on the maps, identifying areas that had been excluded, and those that did not reflect the reality on the ground. This information will be used together with other literature to validate the maps.





Chapter 11

Strategic partnerships and co-financed investments in project monitoring

Co-investing in earth observation

In 2016, the European Space Agency launched the Earth Observation for Sustainable Development (EO4SD) initiative to increase the uptake of Earth Observation (EO) information for sustainable development. Being part of the EO4SD initiative, the Agriculture and Rural Development Cluster project aimed to demonstrate that EO-based products and services can enhance the effectiveness of investments in agricultural and rural development.

The central question on the future of global sustainable development is, therefore, how can the expected vast increase in food and agriculture commodity supply be achieved in a sustainable way? Most of the increase in food production may need to come from greater land and water productivity as well as expansion of arable and irrigated areas.

Also, the positive and negative impact of farming systems and rural development need to be addressed. To do so, governments and development agencies need to improve agricultural sector diagnostics, development indicators, programme monitoring and service delivery.

This requires access to unbiased quantified information at a large scale. This is now increasingly available because of the advancements in satellite technology, such as data obtained from Copernicus, the Earth Observation programme of the European Union. Combining EO data with sophisticated analytics, information and other support tools, allows decision and policy makers to make more well-informed decisions because they now have data at scales, resolution and frequencies previously unavailable.

EARTH OBSERVATION SERVICES FOR AGRICULTURE AND RURAL DEVELOPMENT

- Agriculture and ecosystem services
- Food security and agricultural risk management
- Irrigation management
- Land degradation
- Agricultural production
- Rural infrastructure
- Impact of commodities on deforestation
- Environmental and social safeguards

PARTNERSHIP WITH RFS

EO4SD has developed a range of land information services that have been delivered to RFS stakeholders in the form of mapping and monitoring tools and training activities. EO4SD contributed to the programme's Resilience Atlas with high resolution layers including land cover / land use, biomass production, agricultural water productivity and soil erosion risk assessments. The EO4SD team participated in several programme workshops to inform and build awareness among workshop participants of the use, benefits and potential constraints of using EO information services in programme operations.

ProDAF partners with the 3N initiative and the National Centre for Environmental and Ecological Monitoring in Niger

In Niger, the RFS ProDAF project has been developing strategic and operational partnerships at both national and regional levels for innovations in monitoring. The partnership with the National Centre for Environmental and Ecological Monitoring (CNSEE) has made it possible to set up a geo-local environmental monitoring system in order to consolidate the impacts of the programme on the biophysical and human components in the intervention area.

In addition, under the agreement with the Office of the High Commissioner for the 3N initiative (Nigeriens Nourish Nigeriens), several activities were carried out to boost capacity in monitoring efforts, namely:

- Updating Geographic Information System (GIS) software – with the objective of equipping HC3N (GIS division of DSEC) with GIS software. This acquisition enabled the division to acquire ARCGIS 10.5 software with the Spatial Analyst extension;
- Organising training sessions for monitoring and evaluation stakeholders by DSEC; and
- Training regional stakeholders in the Automated Monitoring and Evaluation System of the 3N initiative, 3N (SASE-i3N).

Technical Advisory Group (TAG) engages in resilience and food security monitoring

Under the guidance of the TAG on monitoring and assessment, ICRAF in collaboration with Bangor University undertook a detailed review of the 12 country projects. As the RFS is designed to promote sustainability and resilience among smallholder farmers through the sustainable management of natural resources – land, water, soils and genetic resources – that are crucial for food and nutrition security, the programme aims to establish a common framework for assessing project impact on resilience and food security of the target populations.

The assessment by ICRAF used the Resilience, Adaptation Pathways and Transformation Assessment (RAPTA) framework to asses the 12 country project designs. Resilience thinking is characterised by the following features:

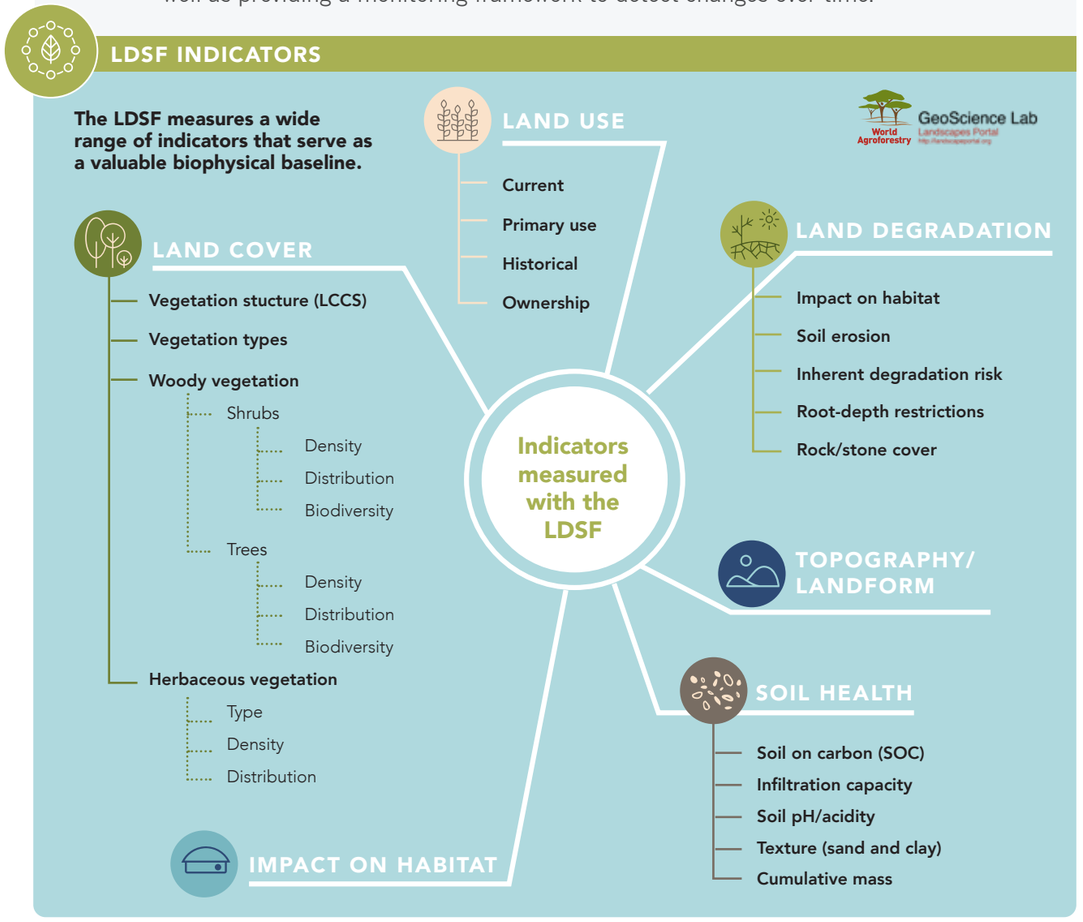
- Goal-oriented approach
- Systems view: focus on process-level system functions
- Consider linkages between scales – nested approaches
- Apply Theory of Change to identify impact pathways
- Consider trajectory, risks, proximity to thresholds
- Consider adaptation/transformation options
- Devise interventions, and their implementation pathways, to steer away from undesirable futures
- Multi-stakeholder engagement, learning, knowledge management embedded throughout

Partnering with ICRAF to monitor land degradation

Earth Observation has greatly evolved with increased platforms and diversified sensors for systematic assessment and mapping of land health characteristics. ICRAF scientists have developed and applied the Land Degradation Surveillance Framework (LDSF) over the past 15 years to systematically collect land health data using a robust indicator framework and consistent sampling. With over 250 data collection sites globally, the LDSF provides a biophysical baseline at landscape level, and a monitoring and evaluation framework for assessing processes of land degradation and the effectiveness of rehabilitation measures for its recovery over time. With co-financing from IFAD and ICRAF, this framework is already being adopted by some RFS country projects, such as Kenya and Eswatini, with significant potential for expansion across the programme portfolio.

WHAT IS THE LDSF?

The LDSF forms a comprehensive method for field-based assessment of land and soil health. Land health generally refers to the degree to which the integrity of the soil, vegetation, water and air, as well as ecological processes, are balanced and sustained. The LDSF provides a field protocol for measuring indicators of the 'health' of an ecosystem. These include: vegetation cover; structure and floristic composition; historic land use; land degradation; soil characteristics, including soil organic carbon stocks for assessing climate change mitigation potential, and infiltration capacity; as well as providing a monitoring framework to detect changes over time.



Land Degradation Surveillance Framework (LDSF)

In Kenya, ICRAF conducted land health baselines for the Upper Tana River Basin, with particular focus on the Upper Tana-Nairobi Water Fund (UTNWF) priority watersheds, which are being targeted for interventions to improve, and sustain, the supply and quantity of water to the city of Nairobi and surrounding areas. The LDSF was applied in five 100 km_2 sites in the upper parts of the Basin, namely, in Sasumua, Ndakaini, Maragua, Gura and Sagana.

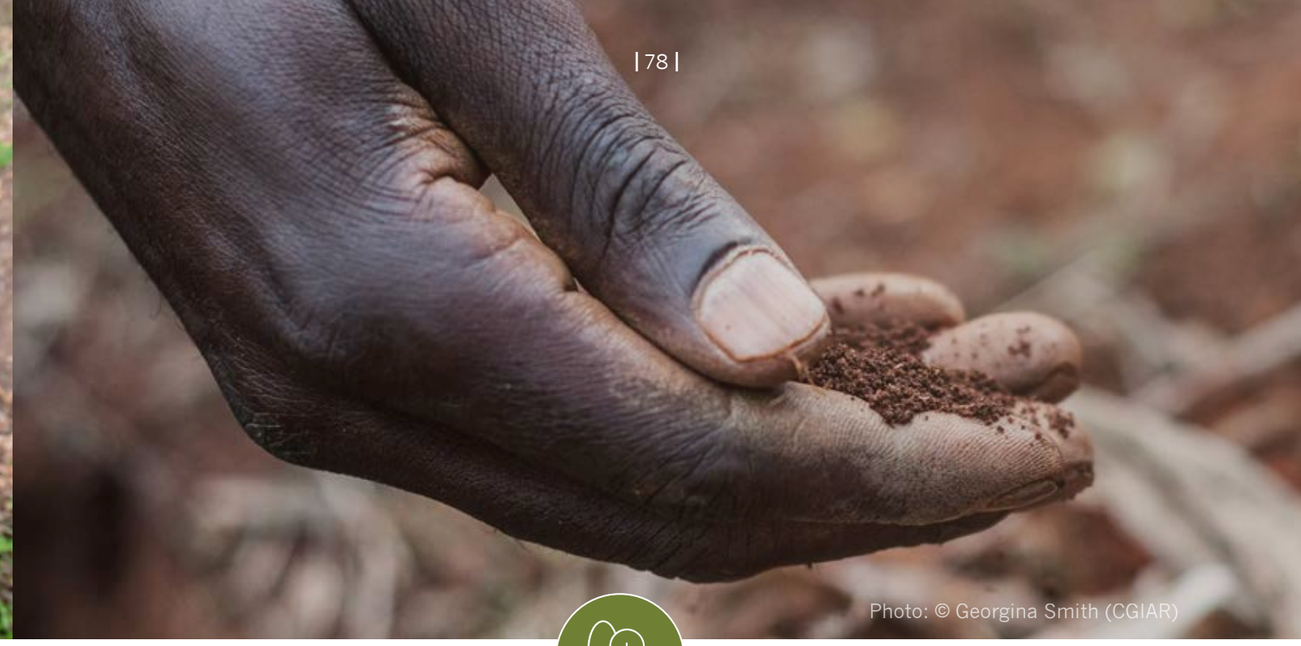


Photo: © Georgina Smith (CGIAR)

1 HOW DATA IS COLLECTED IN THE FIELD

Assessing land health in landscapes using multiple indicators at the same time (e.g., land use, land cover, soil properties, soil erosion, etc) requires multiple perspectives to understand how these indicators vary at different spatial scales. Data is therefore collected from four nested spatial scales: sites, clusters, plots and sub-plots, as illustrated below.

Sites [100km²] are selected at random across a region or watershed, or they may represent areas of planned activities (interventions) or special interest. Each site is divided into 16 tiles of 2.5km x 2.5km each.

Within each tile, random centroid locations are generated for clusters. **Clusters [1km²]** are the basic sampling units and are made up of 10 **plots [1000m² or 0.1ha]**. Using each cluster centre-point, the sampling plots are randomised to ensure comprehensive cover and accuracy of the data collection.

Each plot consists of four **sub-plots [100m² or 0.01ha]**.

At plot level, basic site characteristics are described and recorded:

- Slope, landform, presence/absence of soil and water conservation structures
- Land use
- Rangeland health (applied where needed)
- Topographic position
- Soil samples

At sub-plot level, soil erosion and herbaceous cover are observed and recorded:

- Vegetation measurements (woody cover rating; tree and shrub densities)
- Visible erosion recorded and classified
- Topsoil and subsoil samples collected (160 per site) and composited into one topsoil and one subsoil sample per site

ASSESSING LAND DEGRADATION IN KENYA THROUGH THE UTNWF PROJECT

1. Provide a baseline of soil and ecosystem conditions in the Upper Tana watershed;
2. Identify ecological constraints affecting land, and hence agricultural, productivity;
3. Assess land degradation processes;
4. Produce landscape-level maps of the soil condition, land health and land degradation measures for targeted management interventions;
5. Provide the UTNWF with interactive and up-to-date maps of important land health indicators; and
6. Build capacity among project partners on data analysis and land health assessments, including:
   - Soil condition (soil organic carbon (SOC), soil pH, soil fertility parameters);
   - Land degradation soil erosion prevalence and root-depth restrictions;
   - Soil physical properties (texture); and
   - Vegetation cover.

Assessing land degradation in Eswatini

The RFS project in Eswatini has also collaborated with ICRAF to establish LDSF sites. They will provide a biophysical baseline at landscape level and a monitoring and evaluation framework for assessing the process of land degradation, ecosystem health status, and the effectiveness of rehabilitation measures over time.

MONITORING INNOVATIONS USING THE LDSF – STRENGTHENING NATIONAL CAPACITY AND EMBEDDING APPROACHES INTO THE CHIEFDOM DEVELOPMENT PLAN

- Agricultural land and rangelands in the country are affected by livestock grazing, burning and firewood collection.
- These activities result in widespread land degradation through overgrazing and accelerated soil erosion rates.
- Degradation of agricultural land and rangelands has consequences for the resilience of ecosystems and their productivity.
- Furthermore, land degradation negatively impacts water resources and supply.
- Hence, SLM is of critical importance, including sustainable agricultural and livestock production.

The LDSF will be applied for landscape level assessment and studies of land degradation, soil carbon dynamics, vegetation changes, soil fertility and soil hydrological properties.

The GEF funded Climate-Smart Agriculture for Climate-Resilient Livelihoods (CSARL) project is integrated within Smallholder Market-led Project (SMLP).

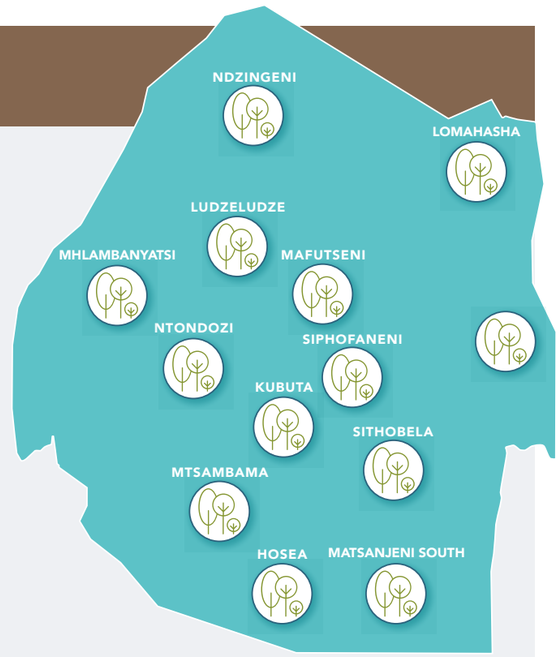
The integration aims to strengthen climate resilience, ecosystem health surveillance and monitoring, as well as sustainable natural resources management, ultimately resulting in the identification of land degradation hot-spots.

KEY ACTIVITIES

Thirteen LDSF sites have been identified around the country.

Site selection was conducted jointly by ICRAF and Eswatini Water and Agricultural Development Enterprise (ESWADE) and the Ministry of Agriculture (MoA), using existing data from Eswatini as well as models developed at the ICRAF Geo-Science Laboratory.

The LDSF will be applied to assess land degradation, soil carbon dynamics, vegetation changes, soil fertility and soil hydrological properties.



The LDSF is in a process of establishing a National Land Degradation and Ecosystem Health Surveillance system to improve monitoring of agricultural land and rangelands.

The National Surveillance Framework will be developed into an Eswatini Decision Dashboard that will be tailored to the needs of different stakeholders.

The dashboard will assist in reports to such United Nations Conventions as United Nations Framework Convention on Climate Change (UNFCC), Convention on Biological Diversity (CBD) and United Nations Convention to Combat Desertification (UNCCD).

TO ADDRESS SUSTAINABILITY OF THE LDSF THE FOLLOWING STEPS ARE BEING UNDERTAKEN

1. Advocate for allocation of resources dedicated to land degradation assessment within the MoA budget
2. Collaborate with the Ministry of Information Communication and Technology to establish a portal to host the LDSF
3. Local soil testing and analysis – these steps will allow the country to conduct its own
4. Training is a critical component for officers. This will ensure that the LDSF approach is repeated in different Chiefdoms in the country

In Eswatini, LDSF baselines are being combined with predictive maps to improve tracking of agricultural land and rangeland performance over time, better informing project activities and government interventions.

Photo: © Georgina Smith (CIAT)

IFAD's co-investment in rural poverty assessment

The Multidimensional Poverty Assessment Tool (MPAT) is the result of a collaborative, international initiative begun in 2008, and is led by IFAD. MPAT provides data that can inform all levels of decision-making by facilitating a clearer understanding of rural poverty at the household and village levels. As a result, MPAT can significantly strengthen the planning, design, monitoring and evaluation of a project, and thereby contribute to rural poverty reduction.

11 MPAT SURVEY MODULES AND INDICATORS

IFAD
Investing in rural people

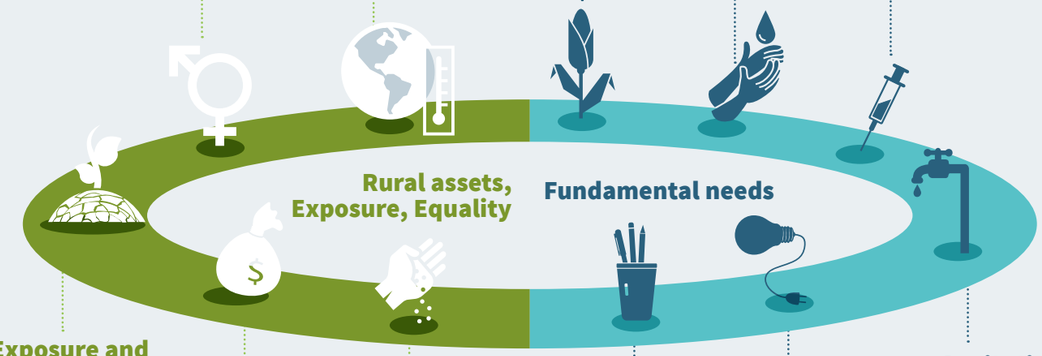
Food and nutrition security
- Consumption
- Access to stability
- Nutrition quality

Gender and social equality
- Access to education
- Access to healthcare
- Social equality

Adaptation to climate change

Domestic water supply
- Quality
- Availability
- Access

Health and healthcare
- Health status
- Access & affordability
- Healthcare quality



Exposure and resilience to shocks
- Exposure
- Coping ability
- Recovery ability

Non-farm assets
- Employment & skills
- Financial services
- Fixed assets, remittances

Farm assets
- Land tenure
- Land quality
- Crop inputs Livestock/ aquaculture inputs

Education
- Quality
- Availability
- Access

Housing, clothing and energy
- Housing structure quality
- Clothing
- Energy sources

Sanitation
- Toilet facility
- Waste management
- Hygiene practices

UTILISING MPAT

Lessons learnt: MPAT's utility can be maximised by using it in conjunction with biophysical data from the Land Degradation Surveillance Framework (LDSF). Data on land cover, soil condition, land degradation, and biodiversity enable project stakeholders to understand trends between biophysical and socio-economic indicators.[1]

World Agroforestry

1 Preparation

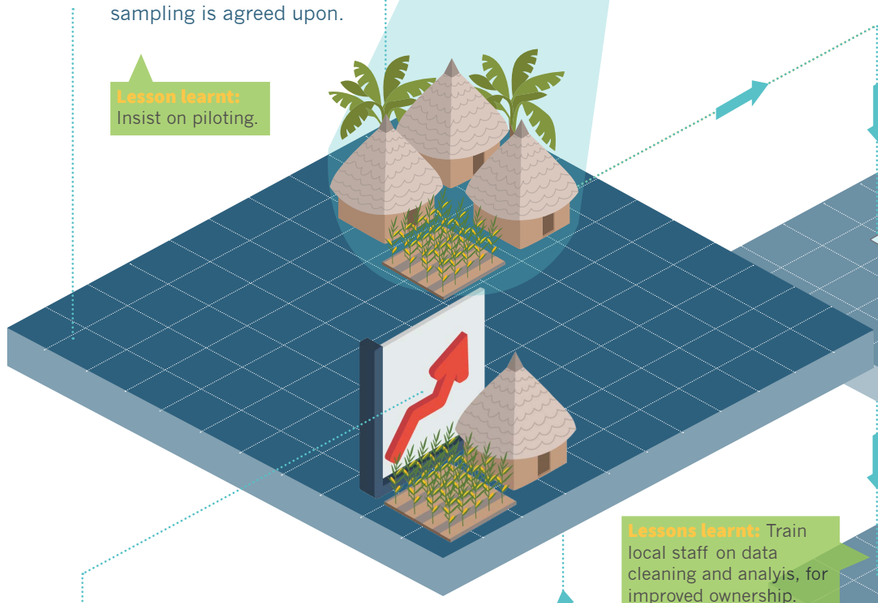
Basic information on the aims and scope of MPAT is provided to the appropriate local officials. The size and scope of sampling is agreed upon.

Lesson learnt: Insist on piloting.

2 Data collection

MPAT's survey instrument has 143 questions that cover the 11 focus areas described on the previous page. Households are interviewed as a participatory means to integrate smallholder farmer perceptions and needs in project design and implementation, in order to effectively achieve household resilience.

Lessons learnt: Smaller data collection teams are more effective; Targeting strategies and village lists make sampling easier.



Data uploaded to a server daily, for remote data quality control by IFAD consultant.

Lessons learnt: Train local staff on data cleaning and analyis, for improved ownership.

Daily data cleaning and clarifying through interactions between IFAD consultant and local staff.

3 Data analysis

The MPAT tool kit includes an Excel analysis tool that produces results comparable across projects. The tool weighs, combines, and normalises results to produce a limited number of summarised scores, ranging from low to high. Analysis can be globally comparative and also context specific.

Scores across households	Average	[min, max]
Food & Nutrition Security	82.3	[16.6, 100.0]
Domestic Water Supply	63.2	[21.1, 99.4]
Health & Health Care	55.9	[21.8, 98.8]
Sanitation & Hygiene	67.4	[46.5, 83.0]
Housing, Clothing & Energy	63.0	[20.5, 93.4]
Education	72.2	[37.5, 95.0]
Farm Assets	71.7	[10.0, 96.2]
Non-Farm Assets	52.0	[31.0, 84.6]
Exposure & Resilience to Shocks	44.2	[10.0, 100.0]
Gender & Social Equality	87.5	[37.7, 100.0]
Adaptation to climate change	52.7	[22.2, 81.9]

[1] Further information on the LDSF can be found at http://landscapeportal.org/blog/2015/03/25/the-land-degradation-surveillance-framework-ldsf/

MPAT in action – Kenya and Eswatini

APPLICATION IN KENYA (UPPER TANA-NAIROBI WATER FUND)

In 2017, a socioeconomic baseline household survey for the Upper Tana-Nairobi Water Fund (UTNWF) project was carried out using MPAT, with approximately 30 additional questions in the project baseline survey on soil and water conservation practices. The objective of the survey was to provide baseline measurements of human wellbeing and water and land-use practices in water fund communities.

Data collection

After dividing each micro-watershed into quadrants, supervisors and enumerators selected every fifth household. If no household member was found at a selected household and were not nearby, the next (sixth) household was selected for an interview. The field supervisor, with the help of village elders, made introductions and assigned the household to an enumerator. Eligible respondents had to be at least 18 years old and spend at least 9 months of the year in the household. Enumerators collected all data for the household survey using Android tablets.

The field supervisors conducted quality checking surveys for 10% of all interviews using an abbreviated version of the survey instrument. Survey data from each enumerator was uploaded daily to be quality checked by an MPAT expert from IFAD, who then communicated outliers, errors, and other suspicious data to the field supervisors for corrections. The field supervisors met with the enumerators every day to review field results, communicate feedback from the data quality checker, and plan the next day's activities.

Challenges in data collection

- The estimated number of households based on remote sensing proved high. This created difficulties in obtaining the intended sample size in several watersheds. Where this was the case, instead of selecting every fifth household as planned, every fourth was selected. In micro-watersheds where the over-estimation was highest, the 'extra' interviews were re-divided over other micro-watersheds.
- A few respondents were reluctant to reveal household member names for fear that their names could be misused in the upcoming general election. When this occurred, enumerators re-read the consent form.
- Some respondents were concerned about the tablet recording their data or their images. In these cases, enumerators explained the use of the tablet and told them about research ethics.
- A few respondents feared that their land could be taken by the government and were therefore not ready to report on the size of their land. In these cases, enumerators again explained the purpose of the survey.

1,000 households surveyed

average interview time: 50minutes

(shortest interview: 9 minutes
longest interview: 63 minutes)

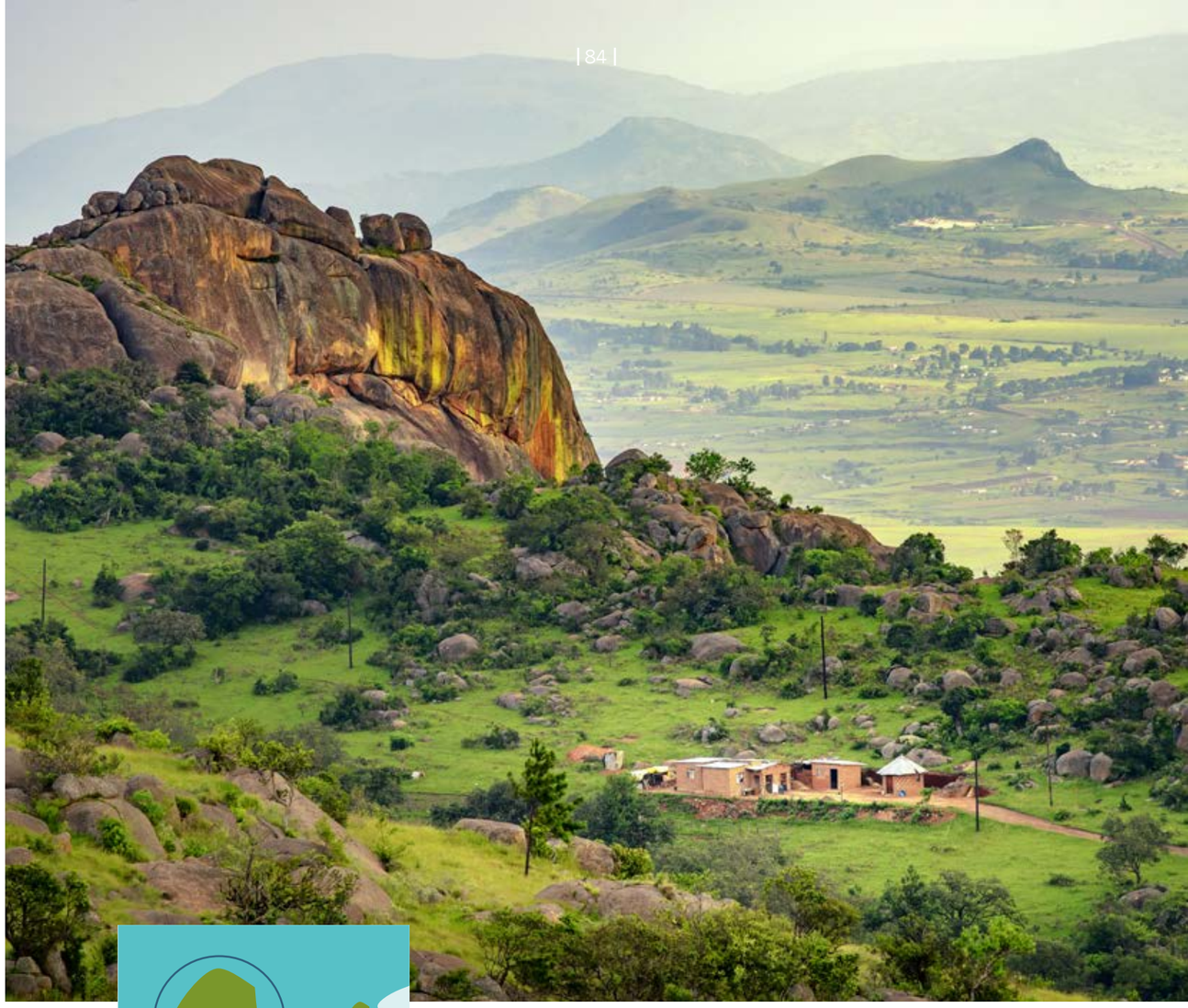
Highlighted findings

Female-headed households (FHH) on average have a greater reliance on farming as their primary livelihood than male-headed households (MHH) (86% vs 65%).

Fewer FHH than MHH believe they could acquire a loan from a bank (46% vs 69%).

More FHH than MHH indicated they would not have the resources or ability to recover from a negative event (10% vs 3%) or rebuild their houses if destroyed in a disaster (32% vs 16%).

Conservation and soil erosion measures usually cover less than 50% of the land, regardless of the slope.



980 households surveyed

72% of the households are familiar with the term climate change and have heard it from the radio, which is the best used means of communication that the households have access to.

63% of the households own livestock.

APPLICATION IN ESWATINI (SMALLHOLDER MARKET-LED PROJECT, CLIMATE-SMART AGRICULTURE FOR CLIMATE-RESILIENT LIVELIHOODS)

Using MPAT, the Smallholder Market-led Project (SMLP) carried out a baseline survey within the project development area in Eswatini, from February to June 2018.

The objective of the SMLP is for smallholder households in the Chiefdoms Development Plan (CDP) to sustainably enhance food and nutrition security and incomes through diversified climate-resilient agricultural production and market linkages. The Climate-Smart Agriculture for Climate-Resilient Livelihoods (CSARL) project is fully integrated into the overall SMLP and ensures that resource planning and agricultural production are underpinned by SLWM. The CSARL project also strengthens national capacity for both promoting and monitoring the impacts of SLWM, which provides a sound ecological base for production. This will be specifically achieved through CSA approaches.

KEY RESULTS FROM THE ESWATINI BASELINE SURVEY

The most common sources of water in the dry season are
boreholes 34%
and, in the rainy season,
rivers 33%

63% of households
do not treat their water

The primary source of light is electricity, at
52% across Tinkhundla

The most used source of cooking fuel is
wood/sawdust/grass at 93%

The most commonly used toilet is an
enclosed pit at 55%

82% of households
do not share toilets

An average of 58%
discard non-edible waste within 25 metres of the household

The capacity of communities to withstand arduous conditions stands at
22% can, 40% cannot

An average, 58%
wash their hands before eating a meal
34% sometimes do, while
2% rarely wash their hands.

Of interviewed households
87% have access to land, with
89% of them through common law tenure

Most of the project development area land is sandy
69% drought type
46% of the land is gently sloped

The main sources of income are;
26% casual labour
22% social welfare
19% formal labour
16% small business

98% of households
have adequate footwear and sufficient clothing for extreme weather

Negative weather events:
Drought/lack of water = 54%
Winds and storms = 34%

KEY HIGHLIGHTS FROM THE SURVEY

FHH
on average, have a greater reliance on farming as their primary livelihood than do MHH
86% vs 65%

More FHH
than MHH indicated they would not have the resources or ability to recover from a negative event
10% vs 3%,
or rebuild their houses if destroyed in a disaster
32% vs 16%

Fewer FHH
than MHH believe they could acquire a loan from a bank
46% vs 69%

Conservation and soil erosion measures usually cover less than
50% of the land,
regardless of the slope

Chapter 12

Enhancing capacity of stakeholders to apply appropriate tools and practices for monitoring resilience

Closing capacity gaps

Efforts have been made to ensure that key individuals and agencies have capacity to use appropriate tools and frameworks for monitoring project impact at country level, for instance by properly collecting and/or analyzing baseline datasets. An assessment was conducted by the Regional Hub (led by Conservation International) to identify the capacity needs of country projects in developing and implementing monitoring and assessment frameworks.

The results indicated that most countries had identified the tools and methods for assessment in their projects. However, there were capacity gaps in using the tools and in deploying large-scale data collection and analysis. Certain countries, including Ethiopia, Kenya and Uganda, relied substantially on consultants and other local institutions to carry out the monitoring and assessment functions for their projects.

Example indicators of socio-economic benefits

Indicator	Scale	Source
Income*	Individual (household if not available)	Social surveys
Land area under integrated management	Household	Social surveys
Membership in co-ops, farmers organizations, and advisory networks*	Individual	Social surveys
Employment (status, occupation, type)*	Individual	Social surveys
Richness of traditional crop varieties and animal breeds	Household	DATAR

Example ecosystem service indicators

Service Type	Service	Indicator	Source
Provisioning (products obtained from ecosystems)	Fodder production	Productivity of grassland areas	Earth obs.
	Crop production	Productivity of agricultural land	Earth obs.
Regulating (benefits from regulation of ecosystem processes)	Climate regulation	Change in soil carbon	Modeling
	Climate regulation	Aboveground biomass	Earth obs.
Cultural (non-material benefits from ecosystems)	Tourism	Visitor numbers	Logs, proxies
	Aesthetic value	Area of natural land cover types	Earth obs.

Training clinics for RFS country teams held in March 2019 in Ghana

EARTH OBSERVATION FOR SUSTAINABLE AGRICULTURAL DEVELOPMENT

(eLEAF, DHI GRASS, Ethiopia)

The EO4SD team supported by UNDP Ethiopia provided an information session on "Earth Observation for sustainable agricultural development" that informed and built awareness among the RFS workshop participants of the utility, benefits, and potential constraints of using Earth Observation (EO) information services in the programme operations.

Based on practical examples from Burkina Faso, Ethiopia, Niger and Uganda, the focus of this session was on harnessing EO information services as demonstrated under the ESA Earth Observation for Sustainable Development (EO4SD) initiative.

The presentations were organised according to the project cycles: design, operation and impact. After each presentation, the country teams were asked a number of questions related to current use and future needs of EO data. Presentations where given by the EO4SD partners eLEAF and DHI GRAS and by the RFS Ethiopia representative Tesfaye Haile from UNDP.

Tesfaye Haile gave an overview on how EO aided him in his project work and presented the EO-based monitoring system currently under implementation in Ethiopia. Roughly 30 representatives from various country teams and organisations participated in this infosession.

The feedback of the roundtable questions showed that various countries already assigned a budget for EO in the design phase, mostly for the institutionalisation of the LDSF, but also for other biophysical assessments, such as land cover mapping, erosion risk or vegetation cover monitoring. Almost all of the teams see the value of EO for future projects in terms of M&E for mid-term and end-term evaluations if the method is quicker and cheaper than traditional approaches.

During the workshop, various portals were presented to access information. The feedback received from the participants of the infosession emphasises that data should be provided via one platform or linking of different platforms should be enhanced in order to facilitate data access. The question on which EO products should be made available to all teams via the Hub project revealed the following data: land cover/land use maps including crop types, status of vegetation cover and forest resources, biomass productivity, degree of land degradation, soil fertility, water availability, biodiversity cover and rainfall/seasonal trends.

Tesfaye Haile from UNDP Ethiopia presenting the concept of the EO-based environmental monitoring system currently under implementation in Ethiopia during the EO4SD infosession.

EO4SD infosession participants working on small assignments after the presentation.

TRAINING CLINIC 2
DECISION DASHBOARDS

A training module, Co-designing decision dashboards: responding to project user needs and requirements for data, evidence and interpretation, was offered to all country projects as part of the Resilient Food Systems Workshop in March 2019, in collaboration with ICRAF, the Stakeholder Approach to Risk Informed and Evidence Based Decision Making (SHARED), as well as the Malawi and Eswatini projects. In Eswatini the development of the dashboard is part of a national adoption of land use planning, using data from ICRAF's Land Degradation Surveillance Framework (LDSF), The dashboard development is being integrated into the Ministry of Agriculture.

Training objectives

- Introduce the co-design framework and decision dashboards.
- Present the co-design process underway in Malawi and Eswatini to build tailored project level dashboards.
- Discuss user needs and capacity for data access and interpretation.

Why use a dashboard

- An important tool for communicating data availability and data requirements, and forming a clear and accessible way to display and enable key stakeholders to interact with information and data.
- Increase ownership of data and resource mobilisation towards key priority areas.
- Central location to systemise, store, access and share available data online – dashboard can be used to upload project data for tracking and monitoring purposes.
- View data on multiple topics at the same time to support decision-making, enhancing capacity to interpret, discuss and use data, while supporting an evidence-based culture for planning and decisions.

Examples from work underway with RFS Eswatini and RFS Malawi projects

Climate-Smart Agriculture for Climate-Resilient Livelihoods (CSARL)

Stakeholder engagement is a key element of the dashboard, and is achieved through a facilitation method called SHARED, developed by ICRAF. SHARED ensures that evidence can be critically evaluated and interpreted to inform decision-making.

The first stage in the co-design process includes understanding the current context for decision-making and defining the information needs.

The dashboard allows in-country stakeholders to define their information needs – for example, for agriculture those could include soil information, meteorological data, etc.

Currently, a Land Degradation Surveillance Framework (LDSF) is being developed to provide scientific evidence on soil health among other parameters. A Land and Water Inventory is also being carried out to provide scientific evidence on suitable sites for earth-dams with adequate land for downstream development, also providing information on soil types.

At the chiefdom level, the dashboard provides information on degraded areas and degradation prone areas for appropriate targeting of project interventions. The dashboard also provides biophysical information and periodic changes from surveys, which in turn provide information on land use changes for farmers. Sources of this information are also indicated in the dashboard.

For sustainability, the LDSF and the dashboard will be hosted by the Ministry of Agriculture. Evidence from the dashboard, even while it is still under design, has resulted in the formulation of research questions for university students – one from Bhutan and three from UNESWA.

ICRAF approach to building decision support dashboards

SCIENTISTS AND TOOL DEVELOPMENT TEAM

Multi-disciplinary team of scientists, including land health, soil, gender and economists contribute to analysis. Lead data scientists code and build the tools, data integration and visualisation

SHARED USER EXPERIENCE AND BEHAVIOURAL SCIENCE SPECIALISTS

Run a structured engagement approach to understand context, user requirements and ongoing user testing to feedback design requirements

TARGET USERS

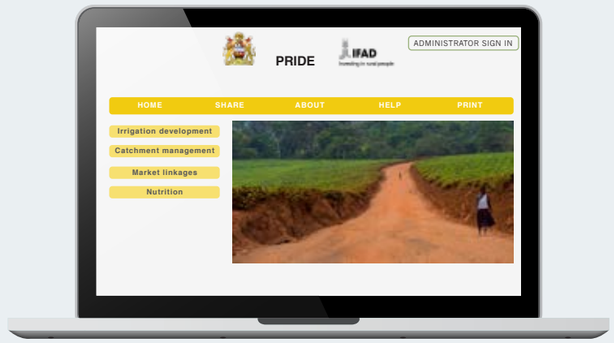
Wide scoping of potential users and engagement of core stakeholders to outline use and design requirements

The Programme for Rural Irrigation Development (PRIDE)

PRIDE is working with ICRAF to co-design a decision dashboard for the project to store, visualise and use information and data.

"The co-design team in the project is led by the M&E unit, to bring together how we want data to be organised and reviewed and to easily track progress. [...] We need to have data accessible to make decisions on project progress and implementation."

This work also contributes to the GEF-IAP-FS ERASP project, which builds primarily on PRIDE as its main co-financing baseline investment.



Innovative monitoring solutions

DATAR

A framework for developing diversity, the Diversity Assessment Tool for Agrobiodiversity and Resilience (DATAR), which uses a heuristic framework for assessment and decision-making, has been developed. This tool includes several linked files, including context and pathways, that link constraints to the use of crop, livestock, or aquatic genetic diversity; actions and interventions that do use crop, livestock, or aquatic genetic diversity to promote productivity and resilience; sectors and sub-groups; diversity assessment tools, including methods and purpose and data analysis tools; as well as indicators to measure both diversity and impacts on interventions. An initial design for a DATAR app. that can be used on cell phones, tablets and computers is underway. The DATAR app. includes an interface with the heuristic framework for decision-making, which includes crop varietal diversity and livestock breed diversity.

Monitoring innovations in use in Kenya, Senegal and Burundi

The UTNWF, in partnership with the Water Resource Authority and Jomo Kenyatta University of Agriculture and Technology, have upgraded 26 river monitoring stations, located on major rivers, with automated equipment that records flow every 30 minutes. Seven of the stations were installed with telemetric links that relay data every two hours. The data being received at the Nairobi Water Company's office is assisting in tracking water quality and informing chemical usage, resulting in efficiency and great savings.

The project is undertaking sediment sampling by deploying a combined team from both the UTNWF and Kenya Water Resource Authority for suspended sediment sample capture. All analysis is conducted at the IFAD-supported Water Resource Authority's laboratories in Murang'a and Embu.

The RFS Kenya project is also partnering with the Jomo Kenyatta University to undertake long-term hydrological monitoring, and train postgraduate students.

The project has worked with Safaricom (East Africa's leading telecommunication company) to develop low-band SIM cards for telemetric equipment that ensures timely relaying of data, irrespective of the equipments' location in the river valleys or the weather. Six stations have been installed.

Each week, 25,000 smallholder farmers receive two extension information messages through a mobile phone platform covering the whole of the Upper Tana watershed, communicating useful information, and facilitating household polling. The Farm Specific Action Plan Tool is used for collecting routine monitoring data for beneficiaries.

The RFS Senegal project is partnering with the Ecological Monitoring Centre (CSE) and this year has been engaged in several activities including:

- Drafting of water quality study reports;
- Assessment of biomass in pastoral units;
- Land use mapping; and
- Deployment of the Environmental Information System.

In the RFS Burundi project, four specific monitoring tools are being applied by the project, targeting key SLM stakeholders' ability to collect data. Key tools in use include LADA-WOCAT, EX-ACT, Collect Earth and DATAR.

Using outcome mapping to track behaviour change

An Outcome Mapping (OM) framework of key boundary partners of the programme was prepared by ICRAF in the second quarter of 2019, building on feedback collected from all programme stakeholders at dedicated sessions held during the Resilient Food Systems Annual Workshop (and subsequent follow-up with country teams). The report was shared with the TAG for review, and discussion is ongoing on how to extend this study to targeted regional boundary partners, such as the African Union Commission (AUC) and The New Partnership for Africa's Development (NEPAD).

Regional and national policy and decision-makers	This group contains central national level policy and decision-makers and regional policy-makers linked to regional fora, such as AU and RECs.
Local Governance organisations	This group contains local policy actors, e.g., decision-making at province/state or district level or Village Chiefs.
Smallholder farmers	Local private decision-makers such as farmers and local entrepreneurs.
Non-Government Organisations and Universities (where applicable)	This group contains potential 'influencers' who can accelerate uptake of lessons learned.

Major questions covered in the intentional design phase of Outcome Mapping for the III GEF-IAP-FS workshop.

Section 5.

Learning exchanges and cross-cutting issues

Resilient FOOD SYSTEMS

Photo: © Neil Palmer (CGIAR)

South–South learning

Learning and exchange visit between Uganda and Kenya country projects

In May 2019, the RFS Uganda team travelled to Kenya in order to see first-hand the technologies and approaches that the Upper Tana-Nairobi Water Fund (UTNWF) is implementing to help improve smallholder access to water for irrigation and restore degraded riverbanks.

The UTNWF has focused on providing alternative sources of water to communities and farmers in order to relieve pressure on the riverbanks and maintain river buffer zones. After meeting with Kenyan authorities and discussing implementation progress with Regional Hub partners at the Programme Coordination Unit (PCU), the RFS Uganda team visited several farmers who, through the support of the RFS Kenya project, have relocated their farms from the riverbanks and have adopted rainwater harvesting technologies to irrigate their crops.

KEY TOPICS COVERED BY HUB VISIT

Green value chain concept

Green value chain concept, which addresses environmental greening throughout the entire value chain, as supported by UNDP and AGRA.

Monitoring and assessment indicators

The development of a monitoring and assessment indicator framework, the Resilience Atlas, land cover maps and carbon mapping, by Conservation International (CI).

Linkage of science–policy

The linkage of science–policy interface on ecosystem resilience and SDGs, by UN Environment & FAO.

Gender

Applied research and gender mainstreaming considerations, by ICRAF.

Land degradation surveillance

Land degradation surveillance and mapping and the development of tailored dashboards to access land health information, by ICRAF.

Tools

Technologies and tools available for improving soil quality testing (as demonstrated during the ICRAF soil lab tour), such as Opus soil testing kit, spectrometer accessories, total X-ray fluorescence, and DNA screening.

KEY LEARNING AND REFLECTIONS FROM THE UGANDA TEAM

Farmland Planning Tool
A farmland planning tool is being used by the agricultural extension staff to guide implementation of agricultural activities on the farm in an organised way.

Agricultural Extension System
Personal interaction of the agricultural extension staff directly with the farmers in providing them with effective advisory services during home visits.

Public-Private Partnerships (PPPs)
Operationalisation of public-private partnerships (PPPs) for environmental conservation to provide tangible services for continued support in the catchments in perpetuity is a new innovation that must explored further.

Make direct business cases to private companies about how their businesses can link directly with conservation projects.

Endowment Fund
The establishment of the endowment fund to generate interest with investment banks ensures sustainability of project outcomes after the project closure.

Fund mobilisation in cities contributes and supports water sources and communities that conserve such catchments.

Agroforestry System
The Agroforestry strategy of planting trees on farm boundaries and inside the farms is a good practice.

High Value Agriculture
Land scarcity and high value crop and livestock enterprises need to be managed intensively, therefore promotion has been done to adopt an integrated approach to increase agricultural production and productivity.

Partnership
The various partners are well coordinated, committed to their work and seem to understand their roles and responsibilities very well.

Mobile Phone Platform
The mobile phone platform created by The Nature Conservancy (TNC) is a faster means of communicating, sharing, recording and disseminating information and trace history.

Riparian Buffer Zone Management
Managing the river buffer zones is well emphasised to avoid siltation of the rivers. Communities and farmers are implementing alternative sources of water through harvesting. Farmers have been supplied with incentives in the form of subsidised costs to implement rooftop rainwater harvesting and to excavate water pans.

Graduate Interns' Scheme
The graduate interns' programme (graduates attached to project for six-month period in the field) enables graduates to get practical skills while supporting communities.

Green Value Chains
The scaling up of sustainable value chains (green value chains) especially dealing with on-farm and off-farm issues, giving catalytic grants to processors and linkage to aggregation hubs and markets is the way forward for farming as business.

REFLECTIONS FROM THE UGANDA DELEGATION

Each of the tools had great relevance to the ILM Mt. Elgon Project and the broader projects supported by UNDP, especially the SURE project in Karamoja.

The scaling up of sustainable value chains (green value chains), especially dealing with on-farm and off-farm issues, giving catalytic grants to processors, improving linkages to market players and aggregation hubs, is the way forward for farming as a business.

The Science–Policy Interface is a key concept where the policies have to be justified with concrete scientific evidence to support smooth policy formulation process.

"The concept of roadside water harvesting works more effectively when water is channelled into a specific reserve before it's finally released to the crops."

Reflections on key learning from Uganda delegation visiting Peter Waweru

Learning exchange visit hosted by the Sustainable Land and Water Management Project in Ghana

In March 2019 managers and partners of the RFS programme joined field trips led by the RFS Ghana project – the Sustainable Land and Water Management Project (SLWMP), as part of the programme's third annual workshop. Four parallel teams visited different sites in the Upper East and Northern Regions; and of the country: West Mamprusi and Mamprugu Moagduri Districts in the Northern Region, Kassena Nankana West, Talensi, Builsa South and Bawku West Districts in the Upper East Region.

The participants had the opportunity to interact with farmers, community chiefs and local government officials (from the Department of Agriculture) to learn how local communities are benefiting from project activities.

Post-trip feedback indicates that participants were highly impressed and valued the South-South opportunity to exchange experiences on:

- Payment for ecosystem services (PES);
- Women's empowerment and gender mainstreaming (e.g., within the shea tree value chain);
- SLWMP's village savings/loans programme;
- The relevance of community engagement to achieve impact; and
- Several specific practices/techniques being spearheaded by the project, such as beekeeping and the selection of particular tree species according to different contexts.

WEST MAMPRUSI DISTRICT

Takorayili Community

- Total area of riparian vegetation
- Importance of spring protection/riparian vegetation establishment
- Total number of project beneficiaries
- Benefits of trees

Sagadugu Community

- Rationale behind the PES concept; how PES farmers are selected; incentives under PES
- Benefits of tree growing
- Benefits of crop rotation
- Benefits of earth bunding

KASSENA NANKANA WEST DISTRICT

Wombio Community

- What crop type was intercropped with tree species
- Benefits of woodlots
- How benefits will be shared
- Challenges involved
- Source of water for watering trees
- Bushfire prevention and control

KASSENA NANKANA WEST DISTRICT CONT.

Nakong Community

- How benefits will be shared
- Challenges involved
- Sources of water
- Incentives derived from project
- Bushfire prevention and control

MAMPRUGU MOAGDURI DISTRICT

Yeziesi Community

- Number of beehives received from project
- Maximum quantity of honey that can be harvested from a beehive
- How honey is harvested from beehives
- Rate of adoption

TALENSI DISTRICT

Yameriga Community

- Benefits of stone lining and composting
- Which sustainable land management (SLM) activity is difficult to carry out?
- Is stone lining done communally or individually?
- Rate of adoption of SLM interventions
- Why was eucalyptus species used for enrichment planting to restore vegetation on the Tongo hills?
- What benefits have been derived from the Village Savings and Loan Association (VSLA) concept?
- Sustainability of project interventions
- Why are women patronising VSLAs more than men?
- Bushfire prevention and control

Gbedembilisi Community

- Shea processing
- VSLA
- Processes involved in processing shea butter from shea nut
- Benefits of shea butter
- Benefits of VSLA to women
- Impact of shea processing on poverty levels

Key: *Discussions*

BAWKU WEST DISTRICT

Tarikom Community

- Importance of earth bunds
- Sustainability of project interventions
- Durability and cost effectiveness of compost pits
- High rate of adoption of SLM interventions

Gbantongo-Agoadaboot Community

- Benefits being derived from rangeland established to livestock and maintenance of natural vegetation
- Uses of VSLA share-out by women for petty trading and animal rearing

Kansoogo Community

- Cereal-legume intercrop with earth bunding
- Compost preparation and utilisation on cereal-legume with bunding
- Tree growing intercrop with soya bean
- PES tree growing intercrop with legumes
- Sweet potato production (root and tuber)
- Riparian vegetation along stream
- VSLA

KEY LESSONS LEARNED BY OTHER PROJECT IMPLEMENTORS FROM THE FIELD TRIPS

Payments for Ecosystem Services (PES)

- Promotion of woodlots through PES approach.
- PES can be made more sustainable.
- PES but with payments not coming from project budget.
- Need to consider specific tree species in tree planting.

Knowledge management and community involvement

- The need for greater sharing of experience, particularly in the regions.
- Input supply systems and extension services innovations, community involvement.
- Actively engaging communities at all levels of the project conception/design, implementation and monitoring and assessment.
- Community involvement in attainable land and water management.

Sustaining projects by community members

- Gender mainstreaming.
- Women's empowerment.
- The autonomy of women through the activity is transformed (e.g., Miel (honey) de Karité).
- The participation of women in implementation of SLM technologies to improve their livelihood and income.

Village Savings and Loan Associations (VSLAs)

- The use of cooperatives for financial savings was an important aspect for ensuring sustainability of the project.
- Natural Resource Management, agroforestry and beekeeping.
- Grassland establishment.
- Improved pasture quality for animals.
- Protecting the planted trees with wire mesh to avoid damage by animals.
- The need to factor boreholes into future proposals.
- The technique of making compost.
- Bottle watering for agroforestry.
- Beekeeping processing, packaging.
- Planting trees with economic value/ benefits.
- The dual purpose machine used to process shea nut and fried mango.

Impact

- Consolidate investments (avoid spread over more villages) to ensure more impact; link interventions to value chain development/promotion.
- Making it easier for stakeholders to demonstrate impact.
- Need to employ/adopt complementary interventions.
- Possibility of spreading the technology beyond project communities as far as possible.

Facilitating cross-country learning to enhance resilient food security in sub-Saharan Africa

In March 2019, the **RFS** programme convened partners from a broad spectrum of development partners, scientific organisations, the private sector, sub-regional partners, government agencies and project managers from 12 countries to share experiences and advance progress on scaling up practices, methodologies and policy interventions in support of food security and environmental resilience in sub-Saharan Africa.

As the programme embarked upon its 3rd regional partners' forum in Bolgatanga, Ghana, participants' sessions focused on learning – between country projects, through consolidated approaches to monitoring, and through targeted training – and on mapping future priorities with cross-cutting projects, knowledge management and communications.

Four of the country projects, Ghana, Niger, Uganda and Burundi, led the South-South exchanges, highlighting lessons in institutional, stakeholder and community engagement and progress on land and water management, restoration of degraded landscapes, biodiversity conservation, sustainable value chains, and payment for environmental services, among others. A full day field trip was organised through the Ghana Sustainable Land and Water Management Project (SLWMP, World Bank) during which participants had the opportunity to learn about the RFS Ghana project in detail while interacting with farmers, such as women engaged in empowerment activities, as part of the project's approach to gender mainstreaming, extension agents and local government officials.

Designed to support the country projects, cross-cutting efforts, including enhancing the science–policy interface (FAO,UNEP); upscaling integrated approaches through value chains (UNDP, AGRA) and rural advisory services (FAO); monitoring and assessment of global environmental benefits (Conservation International, UN Environment and Bioversity International); as well as gender transformative approaches (GEF Secretariat, ICRAF), were presented, inviting feedback from country projects for prioritising their value addition services to scale up learning and implementation among the projects.

Facilitated training targeted the country project participants with sessions on Earth Observation (EO) for sustainable agricultural development and monitoring ecosystem service and socio-economic indicators, co-designing decision dashboards, and outcome mapping to articulate behaviour-change needs associated with enhanced implementation.

Project monitoring and evaluation, knowledge management and communications play a critical role in ensuring programme outcomes and were emphasised throughout the workshop. IFAD's reporting requirements and indicators were presented along with an intranet tool that is being developed through the Programme Coordination Unit (PCU) which will be used to track – in an accessible way – learning, indicators and global environmental benefits. Participants were provided with an update for reactions and feedback on internal and external communication structures of the programme, including the website structure and design, the internal and external newsletter as well as content pillars for the social media for the programme.

Each of the workshop activities underscored elements of the Engage – Act – Track approach to the programme, while bolstering concrete knowledge management and peer learning priorities among the country and cross-cutting projects. Country programme leaders outlined peer-to-peer learning topics based on successful country experience, where topics included payment for environmental services, engaging policymakers, training media, livelihood practices, the farmer field school (FFS) approach, and scaling up indigenous knowledge, among others.

ANNUAL CONSULTATIVE COMMITTEE MEETING

The workshop concluded with the first annual Consultative Committee (CC) meeting with representatives nominated by partnering countries and institutions offering strategic and policy guidance for achieving the programme's objectives.

The first CC meeting of the programme, held in Bolgatanga on 15 March 2019, also provided an opportunity to foster institutional policy dialogues processes. Brief updates were provided by country representatives, comprising mostly senior policy makers from all RFS countries, on how their projects are promoting policy dialogue and partnerships at country level. Efforts and achievements were highlighted in terms of improved policy alignment / harmonisation and operationalisation; collaboration between different ministries and local partners through multi-stakeholder networks; government support for additional resource mobilisation and upscaling; private sector engagement; focus on gender-related targets; development of monitoring plans and knowledge sharing platforms; support for decentralisation and sub-regional planning; and improved irrigation schemes, inter alia.

Interactive facilitation was used throughout the workshop to establish shared priorities and concrete follow-up.

Opening remarks were provided by Hon. Paulina Patience Abayage, Regional Minister of the Upper East Region

Annual workshop highlights

1

South-South exchange and learning between country projects

- Presentations were delivered by representatives of four selected countries – Ghana, Niger, Uganda and Burundi.
- Country teams also shared insights and exchanged experiences with each other through an open space facilitated plenary exercise based on their own demands, identified prior to the meeting, in terms of key challenges and topics they wanted to discuss with and gain feedback from colleagues across the RFS.
- A full day field trip was organised through the RFS Ghana SLWMP project to four key field sites. Participants had the opportunity to learn in detail about this project while interacting with farmers, such as women engaged in empowerment activities as part of the project's approach to gender mainstreaming, extension agents and local government officials.

2

Facilitated training targeted at RFS country projects

- Earth Observation for Sustainable Agricultural Development (EO4SD).
- Co-designing decision dashboards: Responding to project user needs and requirements for data, evidence and interpretation in monitoring and implementation applying Earth Observation (EO).
- Outcome mapping.
- EO for monitoring of indicators of ecosystem services, socioeconomic benefits and resilience of food security.

3

Update to RFS country projects and interactions with partners from the cross-cutting Regional Hub project through:

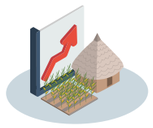
- Presentation by IFAD on the progress of implementation of the programme.
- Presentations made by each of the components to update country programmes on key Hub services and offerings.

4

Present and gain interactive feedback on the programme's communication activities

- Participants were given an update on the internal and external communication structures of the programme, including the website structure and design, the internal and external newsletter as well as content pillars for the social media for the programme.

5



Technical Advisory Group: Review and consolidation of resilience monitoring approaches

- An overview of monitoring and evaluation approaches was presented. This included:
  - » Updates were given on the work conducted by the Technical Advisory Group (TAG) on monitoring and assessment, including a report led by Conservation International (CI) providing guidance to country projects on monitoring of ecosystem services, socioeconomic benefits, and resilience of food security.
    - ◊ Comprising several Regional Hub representatives and external collaborators (from the GEF Scientific and Technical Advisory Panel and the European Space Agency), the TAG on M&A was constituted in late 2017 and met virtually several times to guide the programme's initial steps on monitoring and assessment.
  - » A detailed overview of IFAD reporting requirements for country projects as well as the collation of indicators for the Hub project by the Programme Coordination Unit (PCU).
  - » A presentation of the intranet for the programme was made, where the PCU will enter and make accessible key indicators collected as part of M&E processes, including tracking of global environmental benefits.
- Special attention was given to gender monitoring and mainstreaming, with a dedicated session including a presentation and group exercise with the country teams. This included a relevant case study from gender integration from Ghana.
- Advisory support was offered on resilience indicators, including gender and biodiversity. Conservation International (CI), for instance, provided countries with baseline datasets through the Resilience Atlas and Trends. Earth.

6

Consultative Committee Meeting

- Held the first annual Consultative Committee (CC) meeting with representatives nominated by partnering countries and institutions.
  - » **Constituted in 2018, the Consultative Committee provides strategic and policy guidance for the programme, advising participants as and when required with regard to implementation and other issues that might affect the achievement of the programme's objectives.**

Resilient
FOOD SYSTEMS

Targeting Gender

Gender mainstreaming

Within RFS, gender is a cross-cutting issue and gender mainstreaming, through analyses to identify and account for differences in needs, roles and responsibilities, as well as opportunities for equal engagement of women and men, was a major aspect of the country projects design. Throughout the last two years different activities, engagement and monitoring innovations have specifically addressed gender, a selection of which are highlighted.

UGANDA

In Uganda, the RFS project has made a deliberate effort to ensure equal participation of women and men to acquire knowledge and skills to improve farming and increase farm productivity and household incomes. Through working with clan leaders and elders, highly respected in their communities, the project was able to use community structures to mobilise women to engage in **Farmer Field Schools (FFS)**.

2,100 +
community members identified and registered for training in sustainable land management (SLM) and integrated natural resource management (INRM)

60% +
are woman

The project, in partnership with The **Nabuin Zonal Agricultural Research and Development Institute,** equips participants with skills in seed multiplication and cereal banking to address future food security in the Karamoja region.

1,200+
women and youth farmers participated

ESWATINI

In Eswatini the conservation of natural resources at community level is driven by gender balanced community trusts. This acknowledges that the use of community based natural resources management is different for men and women.

SENEGAL

The RFS Senegal project focuses on gender integration and vulnerable groups as part of its gender strategy. Gender-balance considerations are systematically taken into account, for instance, when selecting participants for the awareness and training workshops it organises.

1,100 +
participants

53% +
were woman

23% +
were youth

A gender distribution principle has also been applied by the project in targeting beneficiaries to train in processing and value-adding technologies.

52,500 +
people expected to be engaged as direct beneficiaries to the project

40% +
are expected to be women and youth

GHANA

The Sustainable Land and Water Management Project (SLWM)

45%
of women are direct beneficiaries

The project has been supporting women groups to enhance traditional activities such as picking and processing of shea nuts and beekeeping, as well as targeting training and capacity building towards these women groups. In order to allow women to achieve financial independence, the project has been supporting and scaling up activities of Village Savings and Loans Associations (VSLAs) to support sustainability and resilience of these women farmers beyond the project timelines.

Shea nut processing cooperative being supported by the SLWM project in Northern Ghana.

Senior Gender Specialist at the GEF Secretariat, Gabriella Richardson Temm, presents GEF's new Policy on Gender Equality at the RFS annual workshop.

KENYA

In the Upper Tana region through the efforts of the Upper Tana-Nairobi Water Fund (UTNWF) project, there has been a rollout of a gender inclusion and pro poor targeting strategy, which extends to disadvantaged groups a 50% additional subsidy on all materials (including drip kits, biogas, and water pan liners) supplied by the Water Fund (irrespective of the source of funding).

50%
subsidies go to households headed by women

It also extends the same to households led by elderly persons aged 60 years and above to ease their burden on affording inputs needed to increase their food security and invest in conservation. The rollout of the gender and poverty strategy has also entailed a practical field-based graduates' internship programme with 13 masters' scholarships to do research using data produced by the project. In addition, 62 secondary schools have been engaged though environmental clubs in the greening of schools programme and local youth have been engaged as technology campaign mobilisers.

NIGERIA

A major strategic alignment with the project has been with the Women Farmers Advancement Network (WOFAN) linking into the network's extensive knowledge base on SLM. The project convened two state-level summits targeting participation from food commodity stakeholders, including policy-makers, financial institutions, millers, agro-dealers and state Agriculture Development Projects (ADPs).

The results of the summits included the establishment of innovation platforms and advancement of inter-state food commodity value chains across the seven project states. One of the critical linkages established at the summit hosted between Abuja and Nasarawa was an agreement between the producers and the millers of rice and groundnuts.

The agreement aims to create a sustainable contract farming relationship between producers and large-scale off-takers, which would eventually open up markets for the farmers, thereby improving relationships along the value chains of the targeted crops.

ETHIOPIA

The project is currently engaging gender experts in the development of a gender-sensitive decision support tool, which allows for easy tracking of sustainable natural resource management. The tool allows for a clear demonstration of socio-economic indicators that have gender-responsive changes, in the management of natural resources, over the project period. It also facilitates the formulation of efficient natural resource management (NRM) responses (e.g., projects, programmes, and policy) and thus contributes to the goals of sustainable development in Ethiopia more broadly.

The tool ensures that gender is mainstreamed throughout the monitoring and evaluation (M&E) of NRM projects or programmes, and subsequently. Ultimately, it allows the project to clearly assess and measure progress made towards gender equality and the contributions to the achievement of the SDGs.

In addition, the national climate-resilient, green economy, gender-mainstreaming strategy is also leading to more gender-equitable outcomes within the project. District gender teams organised gender inclusive training, including key community members at landscape level to create a greater understanding of gender issues.

Gender training

At the third RFS annual workshop in March 2019, a training session was held on Gender Transformative Approaches and Resilient Landscapes. Co-led by ICRAF and the GEF Secretariat, the session objectives were to:

i. Reinforce a common understanding of the framework to address gender in RFS; and

ii. Share experiences linking gender and the environment across IAP countries and projects.

The session began with an overview of the new GEF gender policy and approach to gender equality and women's empowerment. The new policy focuses on the synergies between efforts to combat environmental degradation and those to address gender inequality, and aims at catalysing projects that have the potential to materialise greater environmental impact through gender-responsive approaches and results.

The presentation also referred to how gender is mainstreamed across the GEF project cycle, emphasising the need to have specific indicators and measurements to report on the project gender responsiveness, particularly in three areas:

- Access to and control of natural resources;
- Environmental decision-making and leadership; and
- Access to socioeconomic benefits and services.

The second part of the session was meant to introduce the concept of gender-transformative approaches (GTAs) and why these are required to address some of the gender issues around landscape restoration and resilience. After a brief discussion of the issues and the characteristics of GTAs, the presentation introduced an example of how these kinds of approaches can be integrated into larger restoration projects, based on an experience in Northern Ghana.

The key messages for country teams were:

Efforts aimed at land restoration and increased resilience in Sahelian countries need to meaningfully address gender norms that:

i. Restrict women's participation in decision-making and benefit enjoyment; and

ii. Undervalue women's role in the landscape and in household livelihood systems.

Tackling harmful gender stereotypes and gender gaps cannot be considered as accessory to technical interventions but as a critical requirement to achieve sustainable outcomes.

There are innovative approaches that can be integrated in ongoing restoration initiatives with some minimum requirements, such as having adequate capacities in the team for gender analysis, participatory methods and to support community discussions around sensitive issues.

GENDER MONITORING FRAMEWORK

A gender monitoring framework was developed by ICRAF in collaboration with CI, including the identification of indicators to assess the programme's progress in terms of:

i. Increasing rural women's decision-making power and representation;

ii. Achieving an equitable workload balance; and

iii. Promoting economic empowerment of rural women and men.

The framework takes into consideration five key gender dimensions:

1. Gender responsiveness in implementation;
2. Gender-equitable participation in decision-making at farm, community and policy levels;
3. Effects on labour and time (equitable workload balance);
4. Access to and control over resources (including information, extension services and technologies);
5. Access and control over income and benefits – economic empowerment.

This mini framework was then incorporated into the overall monitoring and assessment framework spearheaded by Conservation International (CI), providing guidance to country projects on gender mainstreaming.

Co-financing knowledge exchange for gender mainstreaming in Northern Ghana

In 2018 ICRAF facilitated the exchange of knowledge and lessons learned between stakeholders of different research and development projects working in common areas in Northern Ghana, including the RFS Ghana Project (SLWM); the West Africa Forest-Farm Interface (WAFFI), an IFAD-funded initiative; and the EU-financed Regreening Africa.

Almost two dozen representatives from Ghanaian development agencies gathered in the city of Bolgatanga on 13 November 2018 for a training workshop on Social and Gender Dynamics and their Importance for Improving Resilience and Livelihoods. This was an opportunity to bring people together to find ways to fully integrate and promote gender issues and transformation into projects, within a context of land restoration at the forest–farm interface.

Workshop participant Stella Basefeli working with ICRAF gender specialist Ana Maria Paez (centre) and Sabine Nadembèga of WAFFI (right) on a drawing of an 'ideal man'.

Useful gender resources in use by the country projects

Guidance to Advance Gender Equality in GEF Projects and Programmes

https://www.thegef.org/sites/default/files/publications/GEF%20Guidance%20on%20Gender.pdf

Gender and Inclusion Toolbox: Participatory Research in Climate Change and Agriculture

https://cgspace.cgiar.org/bitstream/handle/10568/45955/CCAFS_Gender_Toolbox.pdf?sequence=7

Open Online Course on Gender and Environment

https://www.uncclearn.org/open-online-course-gender-and-environment

Gender Matters in Forest Landscape Restoration: A framework for Design and Evaluation

http://foreststreesagroforestry.org/gender-matters-in-forest-landscaperestoration-a-framework-for-design-andevaluation/

In Equal Measure: A User Guide to Gender Analysis in Agroforestry

http://www.worldagroforestry.org/sites/default/files/In%20equal%20measure_reduced.pdf

Gender and Environmental Outcomes

"The national policies around gender are not being implemented and do not work together with policies on environmental degradation. There is a need for transformation of norms and institutions"

Feedback provided by a country project representative during the gender training session at the RFS 2019 workshop in Ghana.

Photo: © Neil Palmer (CGIAR)

Challenges and lessons learned

Country-level

NIGER

Lessons learned

Lesson 1: The major challenges to the success of the land restoration process are i) the respect of building standards, ii) land security (land status) and the functionality of management structures (User Associations of Water and Management Committees) of recovered sites.

Lesson 2: The involvement of scientific institutions in impact monitoring allows for: (i) quality and "scientifically recognized" monitoring/evaluation of ecological impacts and (ii) effective communication of ecological benefits.

Lesson 3:

- Promoting synergy of stakeholders.
- Scaling up best practices.
- Creating conditions to achieve impact threshold on land restoration.
- Enhancing biodiversity and adaptation to climate change.

GHANA

Challenges and how they are addressed

Higher demand from project communities than project can support: seek additional financing for project extension; promote innovative community financing schemes such as VSLA.

Apparent unseen project impact due largely to the widespread of project activities on the ground covering over 12 districts.

Annual bush burning: creation and maintenance of fire belts to safeguard project investments; training community fire volunteers and provision of fire fighting equipment; community sensitisation on fire prevention and management.

Flash floods and long dry spells during rainy season: promoting soil erosion control and in-field water harvesting technologies.

Inadequate government extension service providers: training of lead farmers to provide farmer-to-farmer extension services.

Sense of project fatigue/project support buying: sustained sensitisation/ tangible project delivery.

History of resentment in CREMA establishment: show NGO face/ Involve eminent or well-known leaders in community.

UGANDA

Challenges and how they are addressed

Late start of implementation linked to:

- Delayed signing of instruments for engagement between MAAIF and Partners; especially the OPA
- Slow back and forth planning process and funds transfer to responsible partners
- Limited awareness of systems for engagement with Regional Partners to support the project

How it is being addressed:

- Fast-track signing of OPA
- Hold joint planning and review of progress on monthly basis
- Increased interphase with Regional Coordination Unit for guidance

BURUNDI

Challenges and how they are addressed

Climate change and the diseases that result (BXW, legionary caterpillar, cassava streak, PPR, etc.,)

- Promote short-cycle and high-yield crops in small areas with high nutrient and market value (market gardening); including with access to greenhouses.
- Integrated biological control training.
- SME development on integrated biocontrol advice.

Administrative procedures for the acquisition of goods and services that are often long with risks to the achievement of expected results in a timely manner

- Anticipate orders
- Simplify procedures
- Awareness of decision makers

Differences in household land ownership structures jeopardize the chances of developing agro-silvo-zootechnical practices resilient to food security

- Encourage communities to work together and gather their lands

Regional and overall programme levels

ONE PROGRAMME, BUT DIFFERENT START-UP CONTEXTS, CAPACITIES, NEEDS, PROCESSES AND TIMELINES PER PROJECT:

While some projects in the Resilient Food Systems portfolio were designed from scratch, in other cases GEF funds for the programme were used to complement existing initiatives. As a result, while a few projects already had adequate teams and structures in place for starting implementation in mid-2017, when the Programme was officially launched, others could not properly initiate activities until several months later.

1

Many projects were affected by delays associated to basic start-up processes, such as finalization and signing of agreements, disbursement and use of funds, recruitment of management teams and procurement of equipment.

2

The intricate structure of the Regional Hub project initially proved quite challenging for timely delivery of technical support to the RFS country projects:

- With 7 agreements (or sub-agreements) required for engagement of all partners, limited share of the regional project budget and different institutional rules to be followed, the Hub became operational relatively late (towards mid-2018).
- Collaboration across institutions can be challenging between partners delivering the same component, as colleagues from different organizations were not used to work together beforehand, and sometimes had different views and expectations on responsibilities and strategies to achieve outcomes.
- Hub partners would have been better positioned to support the RFS countries if the regional project could have started before the country projects.

3

Sharing of knowledge and experiences between countries, and at times basic exchange of information and regular communication with the Programme Coordination Unit (PCU) can often be challenging, given the high level of autonomy of the projects and the different institutional standards followed by them. There is no single reporting template or timeline, for instance, adopted by all projects.

- Several efforts have been made by the PCU to address internal communications and inter-project collaboration facilitated through key elements, such as the Resilient Food Systems website; social media updates; monthly flow of internal bulletins, external newsletters and website stories; a knowledge brief series; as well as the increased number of training sessions and workshops organized or supported by the Hub partners.

4

Tracking the programme's overall impact through a common M&E system has been a complex undertaking, even with support from a dedicated Technical Advisory Group (TAG) on monitoring and assessment constituted in 2017. By design, projects adopt different monitoring tools, frameworks and methodologies, which makes it at times unfeasible to aggregate and analyse data at regional programmatic level.

- The establishment at design of a common methodology to be adopted by all countries for the monitoring of food security and resilience, for instance, would likely have enhanced the collection of baseline data and quality of reporting for assessing the programme's key expected impact in the region.
- The PCU has stepped up efforts to address this issue, including work underway by a M&E specialist; the intensification of exchanges with country teams and partners; organization of a dedicated M&E workshop with technical focal points from countries and partners; as well as the development of a common online system to improve access to information and visualization of results for all programme stakeholders.

Photo: © Georgina Smith (CCIAR)

Knowledge management and communication

PROGRAMME WEBSITE www resilientfoodsystems.co

The programme website serves as a central online location for external visibility, where contacts and detailed information on country projects and relevant public resources can be found.

WEBSITE BLOG

UNIDO and IFAD adopt a circular economy approach to transform agro-val...

OUR NEWS

November 04, 2019

The agriculture sector in Senegal is extremely vulnerable to environmental degradation and climate change. Composed largely of dr...

Read More

RFS Ethiopia conducts project review workshop and field visit in Dugna...

PROJECT UPDATES

October 06, 2019

The RFS Ethiopia project seeks to enhance the long-term sustainability and resilience of food production systems in six regions of...

Read More

SOCIAL MEDIA ResFoodSystems ResilientFoodSystems

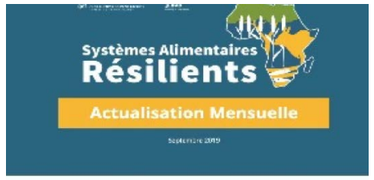
MONTHLY EXTERNAL NEWSLETTER

Welcome to the Resilient Food Systems (RFS) Newsletter.

This month: Read about the key themes and activities that are occurring across the twelve RFS country projects in Resilient Food System's new

MONTHLY INTERNAL BULLETINS

In French and English circulated to internal country project and hub partner focal points.



Knowledge management and learning exchange

KNOWLEDGE SERIES - BASED ON FOUR PROGRAMMATIC THEMES

Engage

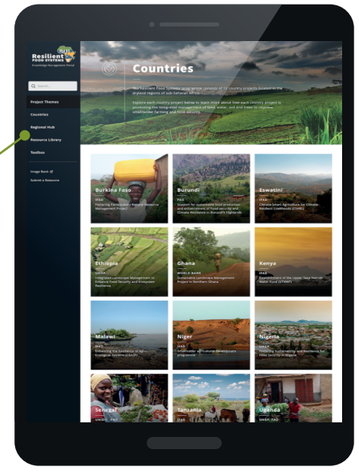
Act

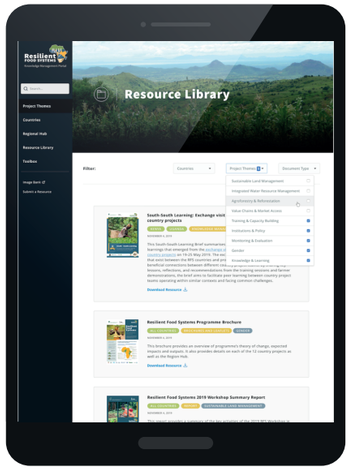
Track

Cross-Cutting

KNOWLEDGE PORTAL

- Project Themes
- Countries
- Regional Hub
- Resource Library
- Toolbox
- Image Bank
- Submit a Resource





Resilient FOOD SYSTEMS

www resilientfoodsystems.co

ResFoodSystems

ResilientFoodSystems

Supported by: gef

Led by: IFAD Investing in rural people

In partnership with: AGRA, Bioversity International, Conservation International, FAO, The World Bank, UNDP, UN environment programme, UNIDO, World Agroforestry