



Ukama Ustawi: Diversification for resilient agribusiness ecosystems in East and Southern Africa (ESA)

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Proposal

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List of abbreviations

| | |
|---------------|--|
| 2DI-SA | Two Degree Initiative- Southern Africa |
| ABC | Alliance of Bioversity and the International Center for Tropical Agriculture |
| AfDB | African Development Bank |
| Africa RISING | Africa Research in Sustainable Intensification for the Next Generation |
| AGNES | African Group of Negotiators Expert Support System |
| AGRA | Alliance for a Green Revolution in Africa |
| AICCRA | Accelerating the Impacts of CGIAR Climate Research in Africa |
| AMCOW | African Ministerial Council on Water |
| ARM | Agricultural risk management |
| AU | African Union |
| AWARD | African Women in Agriculture Research and Development Organization |
| BMGF | Bill and Melinda Gates Foundation |
| ASARECA | Association for Strengthening Agricultural Research in Eastern and Central Africa |
| CA | Conservation agriculture |
| CCAFS | CGIAR Research Program on Climate Change, Agriculture, and Food Security |
| CCARDESA | Centre for Coordination of Agricultural Research and Development for Southern Africa |
| CIAT | Centro Internacional de Agricultura Tropical |
| CIMMYT | Centro Internacional de Mejoramiento de Maíz y Trigo |
| CIP | International Potato Center |
| CIS | Climate information services |
| ClimBER | Building Systemic Resilience against Climate Variability and Extremes |
| COMESA | Common Market for Eastern and Southern Africa |
| CRP | CGIAR Research Programs |
| CSA | Climate-smart agriculture |
| CSAIP | Climate-Smart Agriculture Investment Plan |
| CSFSF | Climate-smart Food Systems Fund (CGIAR) |
| DTMA/STMA | Drought-Tolerant Maize for Africa/ Stress-Tolerant Maize for Africa |
| EAC | East African Community |
| EiA | Excellence in Agronomy (One CGIAR initiative) |
| ESA | East and Southern Africa |
| ESG | Environment, Social and Governance |
| ESO | Entrepreneurial Support Organization |
| FACASI | Farm Mechanization & Conservation Agriculture for Sustainable Intensification |
| FAO | Food and Agriculture Organization of the United Nations |
| FANRPAN | Food, Agriculture and Natural Resources Policy Analysis Network |
| GESI | Gender Equality and Social Inclusion |
| GI | Genetic Innovation (One CGIAR Action Area) |
| GIZ | Gesellschaft für Internationale Zusammenarbeit |
| HER+ | Harnessing Equality for Resilience in the Agrifood System |
| IA | Impact Assessment |
| IAG | Investment Advisory Group |
| IDT | Initiative Design Teams |
| IFAD | International Fund for Agricultural Development |
| IFPRI | International Food Policy Research Institute |

| | |
|----------|--|
| IITA | International Institute of Tropical Agriculture |
| ILRI | International Livestock Research Institute |
| IPCC | Intergovernmental Panel on Climate Change |
| IWMI | International Water Management Institute |
| LSMS-ISA | Living Standards Measurement Study - Integrated Surveys on Agriculture |
| MEL | Monitoring, evaluation, and learning |
| MELIA | Monitoring, Evaluation, Learning and Impact Assessment |
| NARS | National agriculture research systems |
| NARES | National Agricultural Research and Extension Systems |
| NDC | Nationally Determined Contribution |
| NGO | Non-governmental organization |
| NRM | Natural resource management |
| PABRA | Pan-Africa Bean Research Alliance |
| PES | Payments for Ecosystem Services |
| RAFS | Resilient Agri-food Systems (One CGIAR Action Area) |
| R4D | Research for Development |
| RII | Regional Integrated Initiative |
| REC | Regional Economic Community |
| RUFORUM | Regional Universities Forum for Capacity Building in Agriculture |
| SAF | Solidaridad Southern Africa |
| SDG | Sustainable Development Goal |
| SHiFT | Sustainable Healthy Diets through Food Systems Transformation |
| SI | Sustainable Intensification |
| SIAF | Sustainable Intensification Assessment Framework |
| SIMLESA | Sustainable Intensification of Maize Legume Systems in Eastern and Southern Africa |
| SIFAZ | Sustainable Intensification of smallholder Farming Systems in Zambia |
| SMEs | Small and medium-sized enterprises |
| ST | Systems Transformation (One CGIAR Action Area) |
| STI-B | Socio-Technical Innovation Bundles |
| TAAT | Technologies for African Agricultural Transformation |
| ToC | Theory of change |
| UN | United Nations |
| UNDP | United Nations Development Program |
| USAID | United States Agency for International Development |
| UU | Ukama Ustawi |
| VC4A | Venture Capital for Africa |
| VCA | Value Chain Actor |
| WCA | West and Central Africa |
| WP | Work Package |

Glossary

The **agribusiness ecosystem** is the condition surrounding an agribusiness organization. It affects the decisions, strategies, processes, and performance of the business. The agribusiness environment can be classified into two systems: the microenvironment, involving customers, employees, suppliers, the board of directors, and creditors, and the macro-environment, involving factors beyond the control of the business itself which are social, technological, economic, and political.

Appropriate-scale mechanization is a concept developed to target farm mechanization to the size of farms and their available land area instead of introducing machinery that is beyond the needs and requirements of farmers in specific target areas.

Climate resilience largely relates to the capacity of social-ecological systems to sustain climate shocks and maintain the integrity of functional relationships considering external forces. Generally, three basic capacities are included: absorptive, adaptive, and transformative capacities, each of which contribute different factors to the efforts of resilience work.

Conservation agriculture (CA) is a crop and land management system based on three main principles – minimum soil disturbance, crop residue retention, and crop diversification – among other complimentary good agriculture practices needed to support its functioning.

Diversification can be subdivided into two types: horizontal diversification – for example, multiple cropping or a mix of crops instead of cultivating a single crop – and vertical diversification, such as diversification of farm income through activities like horticulture, agroforestry, livestock rearing, and the culture of aromatic plants.

East and Southern Africa (ESA): The One CGIAR ESA comprises the following 22 countries: Angola, Botswana, Comoros, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, Sao Tome and Principe, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

Gender Responsive: refers to identifying and acknowledging the existing differences and inequalities between women and men, and articulating policies and initiatives which address the different needs, aspirations, capacities and contributions of women and men.

Gender Transformative: includes transforming unequal gender relations and empowering women by promoting shared power, more equal control of resources, decision-making at scale by implementing actions and initiatives that challenge existing discriminatory policies and/or practices. This approach includes identifying and addressing the multiple axes of inequalities that intersect with gender to result in a greater vulnerability, marginality and social exclusion of some.

Living labs are interactive innovation agroecosystems in which users co-create new solutions, integrating research and innovation processes in real-life settings.

Maize-mixed farming systems extend over much of East and Southern Africa, of which some 91 million ha is cultivated, with small-scale irrigation on 1-2 million hectares. This area has a larger agricultural population and more poverty than any of the other farming systems in Africa.¹

Resilience in a farming system is defined as its ability to ensure the provision of the system's functions in the face of increasingly complex and accumulating economic, social, environmental, and institutional shocks and stresses, through the capacities of robustness, adaptability, and transformability.

Small and medium-sized enterprises (SMEs) are businesses that maintain revenues, assets, or a number of employees below a certain threshold which is defined in each individual country. SMEs, sometimes called as the 'hidden middle', play an important role in the economy, employing vast numbers of people and helping to shape innovation.

Sustainable Intensification (SI) is a process or system whereby agricultural yields are increased without adverse environmental impacts and without the conversion of additional non-agricultural land. SI can also imply maintaining the same yields with lower input application.

The **Sustainable Intensification Assessment Framework (SIAF)** provides a set of indicators organized into five domains considered as critical for sustainability: namely, productivity; economic, environmental, and human conditions; and social domains. The primary purpose of the SIAF is to strengthen researchers' ability to holistically assess the performance of an innovation in terms of its direct and indirect consequences within and across domains.

Target communities in this context are communities where technologies are co-developed and co-created with participatory involvement of the end users; examples include farmers, SMEs, and service providers.

Ukama Ustawi is a multi-lingual concept – *Ukama* (Shona) means humanity's relatedness to the biophysical landscape and to each other. *Ustawi* (Kiswahili) is a broad concept describing well-being including health, safety, welfare, happiness, and prosperity.

Water security is the capacity of a population to safeguard sustainable access to adequate quantities of acceptable-quality water for sustaining livelihoods, human well-being, and socioeconomic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability.

Youth is defined as persons between the ages of 15 and 35 years, as adopted by the African Youth Charter (2006).

Summary table

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|----------------------------|---|
| Initiative name | Ukama Ustawi: Diversification for Resilient Agribusiness Ecosystems in East and Southern Africa |
| Primary Action Area | Resilient Agri-food systems (RAFS)/Regional Integrated Initiative (RII) |
| Geographic scope | East and Southern Africa (regional) |
| Budget scenarios | US\$ 40,000,000 |

1. General information

- **Initiative name:** Ukama Ustawi: Diversification for Resilient Agribusiness Ecosystems in East and Southern Africa
- **Primary CGIAR Action Area:** Resilient Agri-food systems (RAFS)/Regional Integrated Initiative (RII)
- **Proposal Lead and Deputy:**
 - Lead: **Dr. Inga Jacobs-Mata**, Regional Representative, International Water Management Institute (IWMI) Southern Africa – i.jacobs-mata@cgiar.org.
 - Co-lead: **Dr. Evan Girvetz**, Principal Scientist and Global Program Leader, Finance and Investments for Climate Action Team Leader Africa Region, Climate Action, ABC – e.girvetz@cgiar.org.
- **Members and affiliations of Ukama Ustawi Initiative Design Teams** ([Annex 1](#))

Table 1. Members and affiliations of Ukama Ustawi Initiative Design Teams

| | Name | Affiliation |
|----|--|---|
| 1 | Victor Mugo | Regional coordination (East Africa), Climate Smart Agriculture Youth Network |
| 2 | Dr. Gabriel Rugulema | Regional Director, World Vegetable Centre for Eastern and Southern Africa |
| 3 | George Wamukoya | Head of the African Group of Negotiators Expert Support System, Kenya, Africa Group of negotiators |
| 4 | Dr. Nadia Sitas | Centre for complex systems in transition, University of Stellenbosch, South Africa |
| 5 | Dr. Steffen Entenmann (relocated, and nominated) Dr. Dagmar Wittine | Advisor, Rural Development and Agriculture Fund International Agricultural Research (FIA), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH |
| 6 | Steve Collins | Livelihoods and Adaptation Advisor, United States Agency for International Development (USAID) – Resilient Waters Program, South Africa |
| 7 | Dr. Tasila Banda | National Project Coordinator – Zambia Integrated Forest Landscape Programme at Ministry of National Development Planning, Zambia |
| 8 | Dr. Christian Thierfelder | Principal Cropping Systems Agronomist specializing in Sustainable Intensification of Farming systems, Centro Internacional de Mejoramiento de Maíz y Trigo (CIMMYT), Zimbabwe |
| 9 | Dr. Amos Omore | Regional Representative for East and Southern Africa, International Livestock Research Institute (ILRI), Dar es Salaam |
| 10 | Dr. Alemayehu Seyoum Taffesse | Senior Research Fellow and Program Leader, International Food Policy Research Institute (IFPRI), Addis |

2. Context

2.1 Challenge statement

The impacts of climate change in Eastern and Southern Africa (ESA), detailed in the Intergovernmental Panel on Climate Change (IPCC) report (2021), are already well known to farmers in the region.² In this **climate hot spot, agricultural production worth over USD 45 billion is at risk** from higher temperatures, shorter growing seasons, more extreme and frequent droughts and floods, and increased water scarcity, with little accessible data to support preparedness or responses.³ These **risks cascade across food systems**, heightening the incidence of disease and pest outbreaks, affecting post-harvest storage and transport, jeopardizing businesses and supply chains, and undermining livelihoods.

Maize production is particularly vulnerable, projected to face not only **15% climate-related declines in yield without adaptation** but also challenges from **diminished cropland suitability and poor agronomic inputs and management; degraded environmental bases** with declining **soil fertility and degraded water systems** are already apparent.⁴ Given that **maize-mixed systems cover over 75%** of the cropping land in many places, it is critical to build climate resilience and de-risk through diversification.⁵ Production is low due to **poor-quality seeds, suboptimal input use, poor agronomic management, and pest and disease outbreaks**, among other factors. Yet **maize is the primary source of calories** for people in most ESA countries, within and beyond the current areas of production.

Many of the affected areas already have serious levels of hunger and malnutrition, with **the highest burden experienced by women and youth** from marginalized, vulnerable communities.⁶ Women play a key role in ensuring family nutrition and food security and provide **more than 50% of the agricultural labor force**. They are **more economically active as farmers and entrepreneurs than women** in any other region of the world. Women grow most of Africa's food and **own one-third of all small and medium-sized enterprises (SMEs)**.⁷ Yet **agriculture continues to be a key driver of gender inequality in Africa**, with significant gender gaps in productivity, wages, and entrepreneurial opportunities. Africa is also at the **cusp of a youth bulge**. The majority of around **100 million young people** entering the workforce in Africa over the next 10 years will find work in agriculture. **One of the region's competitive advantages is its people.**

Developments that transform the ESA agrifood system thus not only need to bring sustainable intensification (SI) to maize-mixed systems and crop diversification to de-risk other systems, they also need to a) **empower more women and young farmers**, agribusiness owners, and value chain actors; b) **promote healthier diets**; and c) **protect the natural environment** from further degradation. Systems transformations can diversify not only cropping systems, but also the markets and value chains, investment sources, and enable value chain actors to deliver at scale.

Currently there are significant hurdles to farmers and market systems realizing these ambitions. These include access to inputs, advisories, capacity, and finance; youth unemployment and a lack of interest in agriculture; social inequality that hinders equitable growth; tensions over owning or using scarce resources; and challenges to collaborative governance. Newly developed innovations, capabilities, and support environments can tackle these barriers. **The agribusiness ecosystem**, particularly SMEs, **has been identified as a critical engine** for agricultural and economic development, for climate change adaptation in ESA and for achieving strategic gender gains and youth re-engagement in agriculture.⁸ Agribusinesses help create a "pull effect" for products and services. And while many solutions already exist from CGIAR programs, the challenge is deploying and rapidly scaling these actions through business models and blended capital investment in a coordinated and inclusive way to engage the "hidden middle." SMEs⁹ **The**

next decade will be critical in strengthening food, land, and water systems in ESA: the rationale is clear for **Ukama Ustawi (UU)**.

2.2 Measurable three-year (End of Initiative) outcomes

UU aims to achieve four outcomes by 2024. Indicators to measure these outcomes are included in the Monitoring, Evaluation, Learning and Impact Assessment (MELIA) Plan and Results Framework.

1. 50,000 farmers, value chain actors, and consumers (40% being women; 40% being youth) in maize-mixed systems are using climate-smart intensification and diversification practices with improved water and land management practices.
2. 1 million farmers and other value chain actors (40% being women, 40% being youth) are accessing bundled digital agro-advisory and agricultural risk management (ARM) products and services that support their response to climate risks and manage land and water systems more sustainable for climate resilience.
3. At least 50 start-ups and SMEs—40% run by women and 40% by youth—will have scaled climate smart solutions supporting diversification and intensification of maize systems through at least USD 5 million of new finance.
4. 20,000 hectares under improved sustainable and improved management from USD100 million of investments enabled by 4 strategies/policies and ex-ante analysis which supports collaborative governance and management of multifunctional landscapes.

Together, these outcomes will provide a foundation for co-development and rapid scaling of climate-resilient agricultural innovations co-designed with partners on-the-ground, and guidance for transforming agroecological systems to be more productive, resilient, and equitable.

2.3 Learning from prior evaluations and Impact Assessments (IA)

UU builds on the external evaluations of large-scale CGIAR-managed projects that are relevant to the subject area of the Initiative and/or ESA and beyond ([Annex 2](#)):¹⁰

- UU is first and foremost demand-driven with alignment determined by the strategies of ESA countries, partners and stakeholders.
- All UU's activities are informed by continuous stakeholder consultation and outreach as well as partnerships that frame the demand, innovation, scaling and capacity objectives.
- UU is framed to be gender-responsive and socially inclusive with relevant priorities framed around a transformative agenda that will enhance opportunities and strengthen engagement across the many development areas.
- The UU scaling approach is built on a) active stakeholder and end-user engagement; b) iterative user-centric project and product design; c) multidisciplinary approaches in the implementation process; d) an entrepreneurial spirit e) and investor community framing.
- A trans-disciplinary systems approach at the landscape-level in the development of diversification and sustainable intensification (SI) solutions that ensure environmental, social and governance (ESG) dimensions are considered alongside traditional metrics such as yield, nutrition and economics.

- Solution designs are informed by a socio—technical innovation bundles (STI-B) approach whereby policies and institutional support are developed alongside technical innovations.¹¹
- Research and innovation developments will be communicated through many different forms of channels and media to ensure widespread uptake and use beyond the focus areas.

2.4 Priority-setting

The priority-setting process for UU occurred as follows for each of the thematic and country focuses ([Annex 3](#)):

Thematic focus areas:

1. **Climate focus** – This thematic focus for UU was informed by the Two Degree Initiative – South Africa (2DI-SA) Challenge emphasizing water security and climate resilience (Section 2.6 and [Annex 4](#)). The February 2021 Investment Advisory Group (IAG) meetings reiterated the climate focus and extended the geography to include “high hazard regions in East Africa.”¹² The Nationally Determined Contribution (NDC) submissions from ESA countries were also used to ensure alignment of objectives and focus. Scientific evidence in IPCC (2021) highlights the critical need for a climate focus in the region.¹³
2. **Farming systems focus** - Following discussions in the IAG and associated priority setting assessments, maize-mixed systems in ESA were confirmed as a critical area of focus. These systems comprise the largest agricultural sector with more than USD 40 billion in annual production, covering the biggest target populations in Sub-Saharan Africa.¹⁴ Smallholder maize-mixed systems in ESA are a critical component of current food security.
3. **Diversification and sustainable intensification focus** – The mixed-maize systems are however vulnerable to changing climate and environmental degradation conditions. Climate-smart sustainable intensification strategies have brought proven benefits over the last 20 years which will be built on in areas that continue to be suitable for maize.¹⁵ In other areas there is a need to diversify systems, and new crop options and livestock opportunities will reflect local climate, environmental, social, market and policy conditions.
4. **Supporting agribusiness to scale climate adaptation** - The vibrant agribusiness community and established private-sector markets in ESA present CGIAR with a vital opportunity to transform livelihoods. As the midstream of the food value chain, SMEs are particularly important, as they are closest the market gets to the farmer, and constitute about 40% of the total gross value of value chains in sub-Saharan Africa (SSA)¹⁶. New finance sources and scaling through the private sector are identified by the United Nations Framework Convention on Climate Change (UNFCCC) NDC partnership as critical means of catalyzing climate adaptation.

| | |
|---|---|
|  | Developing climate finance strategies and financial roadmaps This includes: The development of climate finance strategies, national, local and sectoral NDC investment plans, and the development of financial roadmaps. |
|  | Integrating NDCs into national planning, budgets, and revenue This includes: Integration of Climate Finance into Public Budgets & Expenditure Frameworks, Climate finance tracking, sustainable public procurement guidelines and regulations, and carbon pricing, taxes and trading. |
|  | Project and program financing and resource mobilization This includes: Blended finance mechanisms, financial mechanisms or vehicles such as national climate funds, green bonds, revolving funds, etc. and access to capital markets. |
|  | Developing bankable projects and pipelines This includes: Project feasibility assessments, project financial structuring, and accessing international sources of finance through the development of project concept notes and proposals. |
|  | Private sector engagement This includes: Private sector engagement, assessment of private sector needs, mapping of private sector partners, and assessments of private capital markets. |

Fig. 1. NDC finance categories of need¹⁷

5. **Focus on vegetables** - Widespread micronutrient deficiencies are a challenge in Africa, as is food insecurity.¹⁸ Vegetable consumption in Sub-Saharan Africa is very low. UU will partner with the World Vegetable Center, private-sector partners, and national agriculture research systems (NARS) to bridge the “vegetable gap” and create opportunities for women and youth to improve their diets and livelihoods through the development STI-B that they co-design.¹⁹
6. **Addressing national policy priorities** - Of the 150 regional and national policies of ESA focus countries reviewed, UU was well aligned with 116 around issues of climate resilience, water security, land governance, economic integration, agricultural development, and sustainable finance ([Annex 5](#)). Regarding development partners, UU is well aligned to recent strategies of the World Bank, the United States Agency for International Development (USAID), Gesellschaft für Internationale Zusammenarbeit (GIZ), the Food and Agriculture Organization of the United Nations (FAO), World Meteorological Office, and International Fund for Agricultural Development (IFAD) ([Annex 5](#)).
7. **Poverty alleviation focus** – Targeted improvements in agribusiness in ESA offer vast opportunities for poverty alleviation.²⁰ Poverty and malnutrition indicators for various target regions suggest that focusing on Sustainable Development Goal (SDG) 1 (poverty) will emphasize commodities and farming systems in ESA, where the prevalence of poverty is highest ([Annex 3](#)).
8. **Gender Equality and Social Inclusion (GESI) focus** – In Africa, 62% of economically active women are employed in agriculture, yet agriculture is a major driver of gender inequality.²¹ Gender inequality costs the African continent USD 95 billion every year.²² UU aims to work with partners to integrate GESI approaches to small and medium agribusinesses and agri-enterprises in ESA.

Country focus:

A selection and ranking exercise was conducted to determine priority countries ([Annex 3](#)). An adaptive dual Phasing-Engagement approach to implementation will be adopted allowing for variation in the level of engagement i.e., not all work package (WP) activities will be implemented in all countries. The staggered phasing of implementation across three phases will allow for continuation, spill-over, and a long-term impact horizon. UU will focus its efforts in 12 ESA countries: Eswatini, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, Rwanda, Uganda, South Africa, Zambia, and Zimbabwe. Regional anchor countries, where the bulk of activities will be implemented, include Kenya (East Africa) and Zambia (Southern Africa).

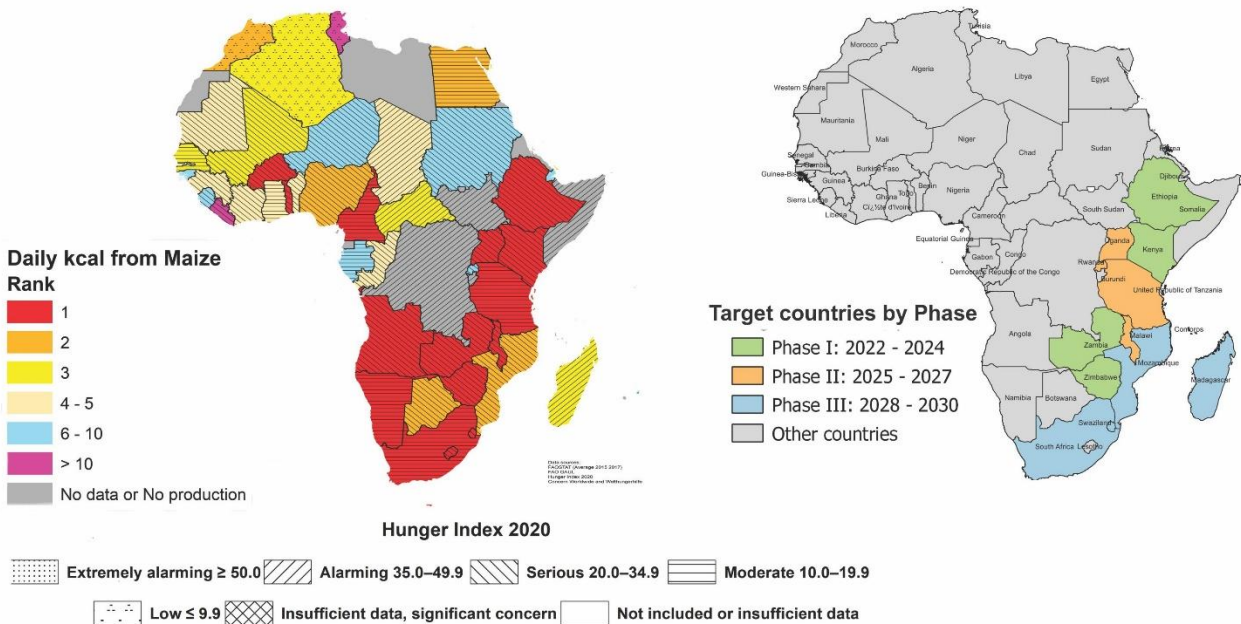


Fig. 2: Extent of malnutrition in ESA countries expressed by daily caloric intake per person and ranked by its importance (1-high – 10-low) overlaid by the hunger index (left); UU Target countries in different phases of implementation (right)

2.5 Comparative advantage

Building on **significant bilateral and past CGIAR Research Programs** in ESA, UU brings **long-standing partnerships with governments, farmers organizations, research institutions, development partners, and private-sector actors** which will ensure contextualized, impactful research embedded in operations to bring long-term sustainability for the research initiative work ([Annex 6. Letters of support](#)). Of growing importance for delivery and scaling impact are partnerships focused on SME acceleration and private-sector delivery of services to reach last-mile farmers.

UU embodies a systems approach rather than one focused on a single commodity, building on the multidisciplinary expertise of scientists, ranging from agronomists to economists to value chain and business model experts. This CGIAR Initiative team brings proven systems experience from across CGIAR research programs, and major bilateral projects including Africa RISING, among others ([Annex 2](#)). UU is already working closely with CGIAR’s global-leading Gender Platform, and their experience and insight will support the gender-transformative agenda sought. UU includes dedicated capacity on the science and delivery of scaling agricultural STI-Bs, and will directly build on previous efforts.²³ UU brings capacity from the One CGIAR Sustainable Finance Unit with expertise in agribusiness acceleration and has strong partnerships with existing impact investors interested in ESA.

2.6 Participatory design process

Process

A robust and adaptive participatory design process has been conducted to date with ~663 stakeholders ([Annex 7. Overview of Ukama Ustawi Participatory Design Process](#)) addressing several components:

2DI-SA Challenge - 286 stakeholders participated in the 19 virtual listening sessions within [CGIAR's Two Degree Initiative](#) Southern Africa (2DI-SA) Challenge 2020 to address water and food security and climate change challenges.²⁴ Needs and priorities were co-identified and captured via documents and recordings ([Annex 8. 2DI Proceedings Report](#), [Annex 9. 2DI-SA public documents](#); [Annex 10. 2DI-SA video recordings of listening sessions](#)).

The UU participatory design process expanded the engagement and scope of the 2DI-SA Challenge to East Africa. In total, 377 stakeholders took part in the participatory design process, and all events were interactive and independently facilitated through plenary inputs, Q&A, breakout groups, and polling. The insight, direction, and critical foci identified through this process were directly incorporated into the UU WPs.

Intensive virtual stakeholder engagement continued in 2021 (Fig. 2). Five Working Groups (WGs) of 15-25 people from within and outside CGIAR supported the design of the original 5 work packages (WP 1-5) ([Annex 1](#)).

1. Five WG workshops co-identified objectives, activities, and outputs for each WP.
2. A plenary workshop focused on prioritization of activities, country selection, key partners, and more. Representatives of five One CGIAR thematic initiatives were invited to share how they plan to work with UU: Excellence in Agronomy (EiA), Sustainable Intensification, Nexus Gains, Building Systemic Resilience against Climate Variability and Extremes (ClimBER), and Resilient Cities.
3. A multi-stakeholder validation workshop, open to a broader partner network, reviewed the consolidated WPs and discussed alignment with other initiatives.

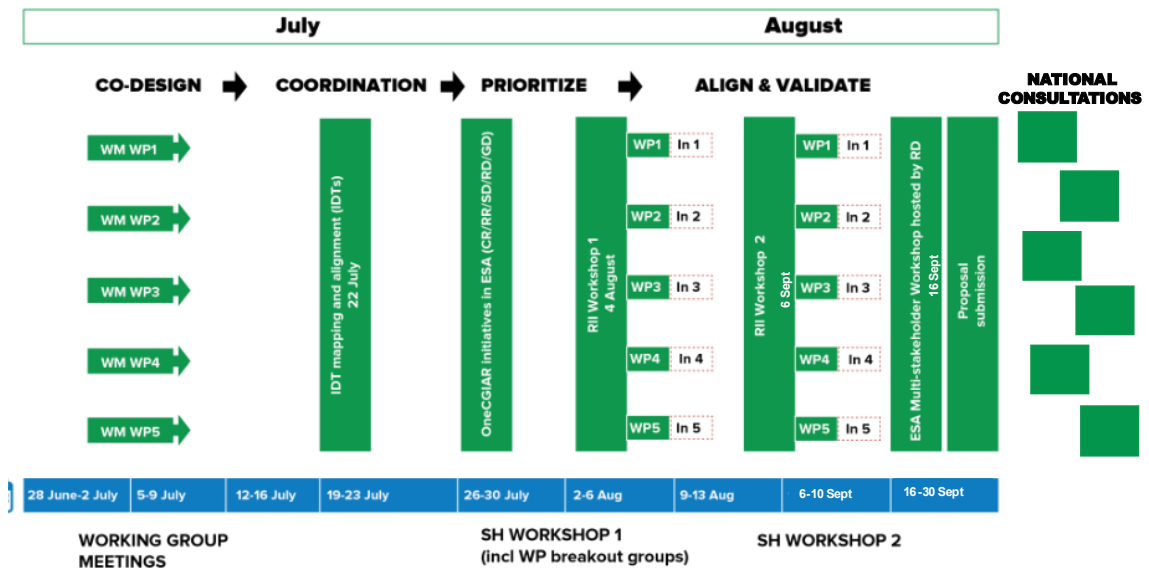


Fig. 3. UU participatory design engagement timeline

The One CGIAR Initiative leads and co-leads, the ESA Country Representative cohort, and a wider range of regional stakeholders were also engaged:

1. The One CGIAR Initiative mapping meeting with Initiative Design Team (IDT) leads and co-Leads conducted an initiative alignment and mapping exercise to understand the planned activities and consolidated basket of One CGIAR initiatives in ESA ([Annex 11. Initiative Alignment Results](#); [Annex 12. Jamboard Initiative mapping](#)). This topic was further developed in a workshop with the Initiative leads and co-leads interested in working in ESA.
2. A workshop with the ESA Country/Regional Representatives was conducted to present the consolidated One CGIAR offering and discuss its relevance and potential regional impact ([Annex 13. UU RII Engagement with ESA Country Representatives Mentimeter responses](#)).
3. A regional dialogue was convened by the ESA Regional Director on the relevance of the One CGIAR transformation to ESA's needs, priorities, and circumstances.
4. A national consultation series is planned in quarter 4, 2021 in partnership with CGIAR entities in at least 12 ESA countries in order to (i) introduce the One CGIAR Research and Innovation Strategy and Initiatives to key stakeholders in ESA countries; (ii) engage with national stakeholders on how the basket of One CGIAR initiatives to be implemented in a particular country will benefit national stakeholders and meet national priorities; and (iii) discuss existing programmes and how collaborative opportunities with the One CGIAR initiatives can work with them.

Key findings

Most participants found the UU RII to be very relevant to addressing current and future challenges in ESA, and found UU a refreshing and ambitious exemplar of how the One CGIAR could work with agribusiness in the region. Many country partners and stakeholders expressed an interest in UU having some level of implementation in their country. It is strategically advantageous to be inclusive of all countries, with phasing and the level of effort adapted to each national situation. (Section 2.4).

Strategic initiatives like AICCRA, Africa RISING, SIMLESA, and TAAT see the value of the RII and have been integrated into the WP activities. Discussions continue about how to partner with these initiatives for greatest impact. In addition, partners are drawn to the focus on the agribusiness ecosystem and engagement with the private sector to attract sustainable and blended finance and for what it represents in terms of growth of new markets and stronger value chains.

Some initially unaddressed topic areas were brought to light, including food safety, agriculture-nutrition linkages (WP1), how CGIAR entities will be integrated (WP 6), and business cases for innovative finance for resilient agrifood systems (WP4).

Roughly 24 Initiatives in 15 ESA countries have expressed interest in implementing activities; 11 of these show very strong alignment ([Annex 11](#)). Kenya and Ethiopia have the highest concentration of initiatives at 18 each (Fig. 4).

The participatory design process led to the prioritization of key themes and intervention areas, including thematic alignments with other initiatives (Annex 8). Most Initiative leads or co-leads see UU playing a key role in 1) scaling appropriate innovations from the thematic initiatives; 2) ensuring spillover of thematic initiatives in ESA countries where they are not working; and 3) coordination of One CGIAR Initiative activities in the ESA region (Fig. 5). In addition, UU will be a major contributor to the scientific enhancement of agribusiness and agrifood systems in the region through the implementation of a robust research programme that brings together the knowledge of the One CGIAR Action Areas.

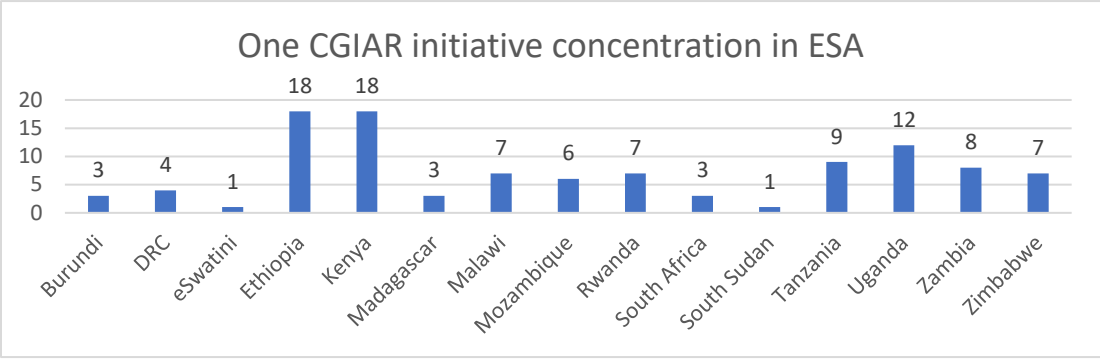


Fig.4 One CGIAR initiative concentration in ESA countries

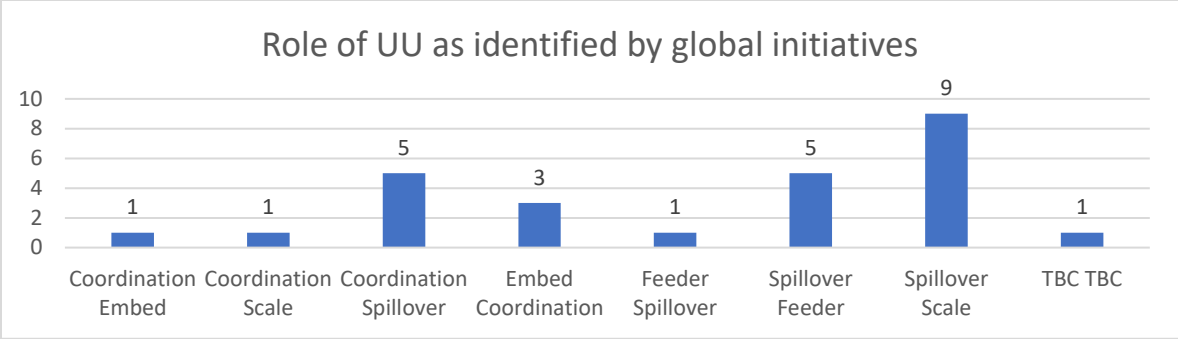


Fig. 5 The role of UU as identified by global initiatives

2.7 Projection of benefits

The projection of benefits for the UU Initiative follows two key *pathways* the project focusses on: (1) farmers reached through community-based based approaches to promoting adoption of climate-smart and sustainable practices (targeting 50,000 farmers by 2024); (2) digital approaches (targeting 1,000,000 by 2024). For each of these pathways, the breadth (number) of farmers impacted by the project after 10 years was estimated using a diffusion model that project the number of beneficiaries based on the 2024 end of Initiative outcomes. This approach was used to project benefits for climate-smart agriculture investment plans developed for countries by the World Bank based on analytical approach developed by the CGIAR Research Program on Climate Change, Agriculture, and Food Security (CCAFS) and adapted for use here.²⁵ This approach is based on the Bass diffusion model that estimates the adoption rate for different types of practices based on different rates of innovation and imitation:

$$AR_t = \frac{1 - e^{-(p+q)t}}{1 + \left(\frac{q}{p}\right) e^{-(p+q)t}}$$

where AR is the adoption rate, *p* is the rate of innovation, and *q* is the rate of imitation over a specified period of time represented by *t*. The parameters *p* and *q* are set for different types of practices being promoted that were used in World Bank (2020).²⁶

Table 2. Rates of innovation (p) and rates of imitation (q) for different types of technology adoption.²⁷

| Rates of Innovation | Rates of Imitation (q) | | |
|---------------------|----------------------------------|-------------|-------------------------------|
| | 0.4 | 0.5 | 0.6 |
| 0.05 | Water harvesting and irrigation | Aquaculture | Cocoa, diversified tree crops |
| 0.1 | Small ruminant, tubers livestock | Poultry | Cereal-legume |
| 0.15 | | | Advisory services |

It was assumed that an equal investment was made in each of 2022-2024 and this results in reaching the end of Initiative outcome of 50,000 farmers beginning to adopt diversification and intensification practices and 1,000,000 people accessing agro-advisory services and ARM services in 2024. To select the p and q diffusion parameters, it was assumed that the *Big Five Technology Solutions* (see WP1) diversification/intensification approaches are equally promoted which result in 60% of the interventions being categorised as “cereal-legume” technologies (Technology Solutions 1, 4 and 5), 20% as “water harvesting and irrigation” (Technology Solution 2), and 20% as “Small ruminant, tubers, livestock (Technology Solution 3). The agro-advisory and ARM service pathway was assumed to have parameters for “advisory services”. The model was calibrated for the third year (2024) to total 50,000 beneficiaries adopting these Big Five technology groups and 1,000,000 people accessing agro-advisory and ARM services between 2022 and 2024 (sphere of influence). It was then projected with this model what the diffusion adoption rate would be to 2030 (sphere of interest) given this trajectory and no additional funds invested. It was assumed that 22% of those accessing agro-advisory services ultimately adopted one of the Big Five technologies for improved management practices.²⁸ Finally, all numbers were converted from people reached with the technology to people benefited in the entire household, but multiplying the depth numbers by 4.3, which is the average household size in the four Phase 1 countries – this was not applied for the gender indicator, as it represents only the women directly impacted by the Initiative and does not include the family in the calculation.²⁹

It was assumed that women and youth are 40% of those adopting UU innovations, based on the targets set for WP3. It was assumed that all technologies being promoted are climate-smart (primarily climate adaptation and risk reduction). It was assumed that all technologies adopted by farmers in pathway 1 are improved management for environmental health and biodiversity (as they will be assessed for this in WP1 and WP4, and will be promoted over an average of 1.1 ha per beneficiary, based on this being the average farm size across the four Phase 1 countries ([Annex 14](#)).

The depth was assessed using information synthesized from the from the CCAFS Evidence for Resilient Agriculture database collected for the World Bank Ghana Climate-Smart Agriculture Investment Plan (CSAIP) ([Annex 15a](#)).³⁰ It was assumed that change in yield represented a change in income. And the probability of impact was based on the economic analysis that calculated the likelihood of a positive net present value from making investments on knowledge systems and advisory services supporting climate-smart agriculture.

For pathway 1, the change in cereal-legume yields from improved varieties, fertilizer management, intercropping and rotation with legumes, mulching and reduced tillage is 49%, and the return on investment for such practices was estimated to be 7.8.³¹ As such, it was estimated the depth for indicators 1, 2, 3 and 4 in Table 3 below to be significant (10% permanent increase in income). For indicator 5 (Environment), the depth was assessed to be significant because the practices will directly address one of the depth criteria (improvements in soil health and fertility).

The probability was set to very high (>80% likelihood of success) for this pathway, as financial analysis found the likelihood of a positive net present value (NPV) to be 89% ([Annex 15b](#)).

For pathway 2, the change in yields from advisory services was found to be 21% and ROI 4.7, suggesting significant benefits. As such, the depth was set to low given the likelihood of a positive NPV was found to be 58% ([Annex 15b](#)).³²

UU will link with various other One CGIAR initiatives however, the linkage with those initiatives is designed such that UU received outputs from those (e.g., ClimBeR, EiA, SAPLING, etc.) which UU works to scale out. As such all shared impacts would be directly as a result of UU's scaling and would not be considered double counting.

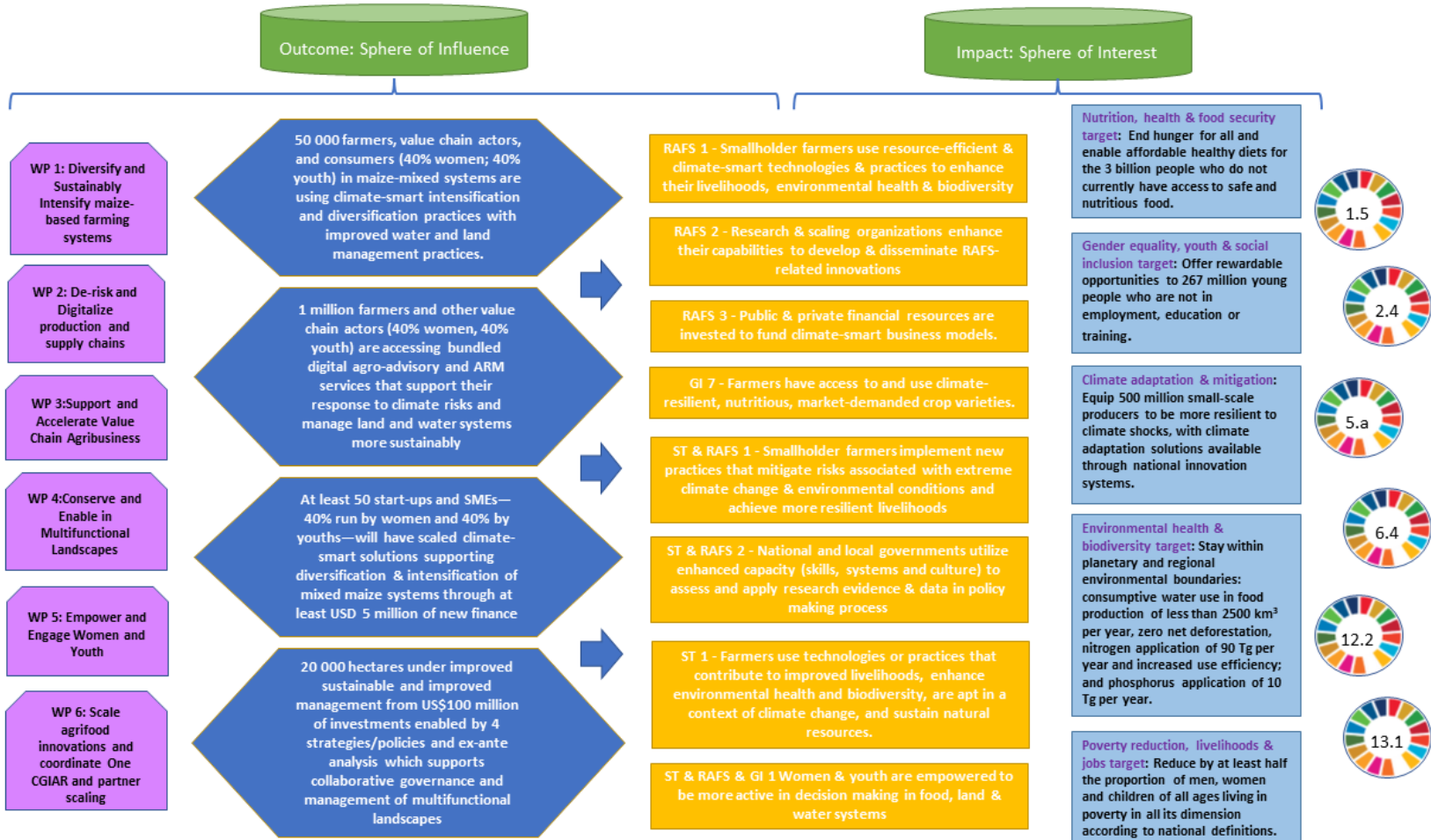
Table 3. UU's projected benefits to 2030

| Breadth (indicators from 5 Impact Areas) | Depth (Categories of impact) | Probability Likelihood of impact (very high, high, medium, low, very low) |
|--|--|---|
| 1: Nutrition, health & food security 11.3 million people benefiting from relevant CGIAR innovations | 3.1 million Significant (10% increase in annual income) | Very High (>80% expectation of achieving these impacts by 2030) High (50%-80% expectation) |
| | 8.2 million Perceptible (<10% increase in annual income) | |
| 2: Poverty reduction, livelihoods & jobs 11.3 million poor people benefiting from relevant CGIAR innovations | 3.1 million Significant (10% increase in annual income) | Very High |
| | 8.2 million Perceptible (<10% increase in annual income) | High |
| 3: Gender equality, youth & social inclusion 1.1 million women benefiting from relevant CGIAR innovations | 0.3 million Significant (10% increase in women's annual income) | Very High |
| | 0.8 million Perceptible (<10% increase in annual income) | High |
| 4: Climate adaptation & mitigation 11.3 million people benefiting from climate-adapted innovations | 3.1 million Significant (10% increase in women's annual income) | Very High |
| | 8.2 million Perceptible (<10% increase in annual income) | High |
| 5: Environmental health & biodiversity 798,000 ha under improved management | 798,000 ha Significant (improvements in soil health and fertility) | High |

3. Research plans and associated theories of change

3.1 Full Initiative theory of change

3.1.1 Full Initiative theory of change diagram



3.1.2 Full Initiative theory of change narrative

UU will support climate-resilient agricultural livelihoods and agribusiness ecosystems in 12 ESA countries³³ to help millions of **vulnerable smallholders transition from maize-mixed systems to sustainably intensified, diversified, and de-risked agrifood systems with a strong maize base**. Targeted to address seven key SDG goals (See 6.1), the focus of this Initiative is improving public and private **extension and delivery channels enabled by the agribusiness ecosystem, enterprise development, and private investment**. Whilst the public sector will continue to play a strong role, the private sector will also be key to realizing the necessary scale of adaptation.³⁴ Tapping new capital sources to support this will require the developments that deliver again environment and governance metrics alongside traditional economic and calorie source drivers.

UU's theory of change (ToC) is operationalized through three impact pathways:

1. **Assess** – providing evidence through various integrated assessments.
2. **Apply** – implementing innovations, management practices, and business models.
3. **Scale** – scaling out to more people or areas, scaling up through policies and institutions, and scaling deep to create behavioral changes.

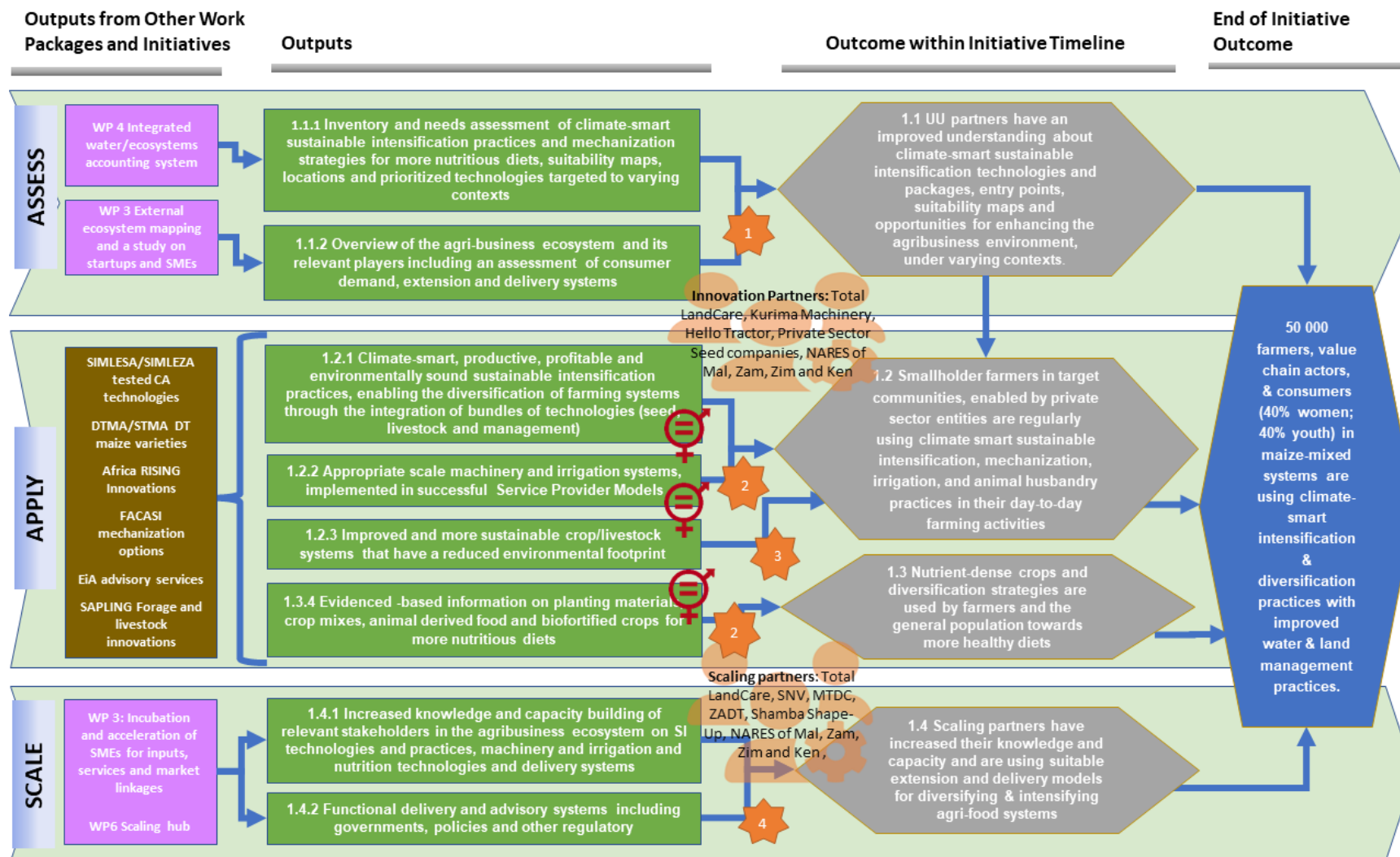
These pathways link UU's four main WPs (WP1-4) and two cross-cutting ones (WP5-6) to deliver through a **systems approach**. UU research and testing will underpin the **co-design of diversification and intensification STI-Bs**, including **improved varieties, climate-smart SI practices**, and **sustainable water and land management**, all of which have clear market demand and are delivered through innovative extension mechanisms as part of WP1. Given the scale of change needed and budgetary limits, **links with other initiatives** – including Sustainable Intensification, EiA, SAPLING, Sustainable Healthy Diets through Food Systems Transformation (SHiFT), Nexus Gains, and Rethinking Markets – will strengthen the STI-Bs developments. An important supporting component will be the **digital agro-advisory services and ARM products co-designed and delivered to farmers** through innovative multimedia channels as part of WP2. A value chain and food systems approach will be used to identify key market gaps and opportunities, and from that support for SMEs will be developed, through technical assistance and acceleration through enterprise support organizations (ESOs). Farmers will be supported in their efforts to diversify and intensify through technology transfer of the STI-Bs, access to inputs, farm management services, information services, and market linkages. This process will build on existing incubation capabilities in ESA countries and CGIAR, and will help **unlock sustainable finance** from public and private sources, such as the Climate-Smart Food Systems Fund being launched this year by CGIAR. New STI-B developments need to be co-designed within natural resource limit. Activities in WP4 such as **integrated resource and risk assessments, institutional analysis, policy strengthening, and advisory services** are critical to STI-B development to achieve this and will help foster an enabling policy and investment environment to this end. These 4 WPs each identify a **Big Five** of proven innovations, technologies, enablers, and interventions that have been prioritized as 'quick wins' to achieve impact at scale.

A strong focus on **empowering women and youth** through often different pathways, is integrated throughout all WPs by a **GESI-informed framework (WP5)**. It will build an understanding of barriers to agency and restrictive social norms in agri-enterprises, and strengthen capacity through change-agent identification, mentorships, and trainings. Cross-cutting WP6, meanwhile, will establish a **Scaling Hub** to bring together demand, innovation, and partners to scale fit-for-purpose STI-Bs through innovative delivery models. WP6 will provide a regional mechanism for spill-over scaling from other One CGIAR initiatives and partner programs.

3.2 Work Package theories of change

3.2.1 One-page diagram per Work Package

Work Package 1: Diversify & Sustainably Intensify



3.2.2 Work Package research plans and theories of change

Work Package 1

| | |
|---|--|
| <i>Work Package title</i> | WP 1: Diversify and sustainably intensify maize-based farming systems |
| <i>Work Package main focus and prioritization (max 100 words)</i> | By applying the framework of assess, apply, and scale, WP1 will initially focus on scoping the status and suitability of both crops and livestock options alongside SI practices, including a needs assessment for mechanization and irrigation targeted towards the agribusiness environment. Secondly, the WP will apply innovations, integrating climate-smart SI practices, mechanization, irrigation, improved crop and livestock systems, and nutrient-dense crops to shift to resilient and diversified farming systems, linking to innovations in markets and diet in other initiatives. Finally, WP1 will address the capacity needs of actors in the agribusiness environment through trainings and participatory research for development, improving delivery pathways using successful scaling strategies. |
| <i>Work Package geographic scope (Global/Region/Country)</i> | Zambia, Zimbabwe, Kenya, Malawi |

The Science: 500-word narrative:

| Key research questions | Main proposed scientific methods | Key outputs |
|--|---|---|
| <p>ASSESS:</p> <ul style="list-style-type: none"> What scalable diversified mixed-maize farming systems exist that meet market demand, enhance productivity, profitability, and environmental, human, and social benefits? | <ul style="list-style-type: none"> Review and inventory of existing farming systems Use of the SIAF Framework to evaluate farming systems³⁵ Use of the RhoMIs framework³⁶ Query of the Evidence for Resilient Agriculture (ERA) database³⁷ | <ul style="list-style-type: none"> 1.1.1 Inventory and needs assessment of climate-smart sustainable intensification practices and mechanization strategies for more nutritious diets, suitability maps, locations and prioritized technologies targeted to varying contexts |
| <ul style="list-style-type: none"> What players and diffusion strategies can increase the pull effect from the private sector? | <ul style="list-style-type: none"> Scaling scan, market analysis, inventory, and evaluation of current extension methodologies³⁸ Assessment of baseline technology diffusion | <ul style="list-style-type: none"> 1.1.2 Overview of the agribusiness ecosystem and its relevant players, including an assessment of consumer demand, extension, and delivery systems |
| <p>APPLY:</p> <ul style="list-style-type: none"> Building on successful products from SIMLESA, Africa RISING, Drought-Tolerant Maize for Africa/ Stress- | <ul style="list-style-type: none"> Participatory evaluation and co-design of novel combinations of SI, crop and fodder mixes, and livestock options through community-based approaches using 36 target communities as living labs or learning centres | <ul style="list-style-type: none"> 1.2.1 Climate-smart, productive, profitable and environmentally sound sustainable intensification practices, enabling the diversification of farming systems through the |

| | | |
|--|---|--|
| <p>Tolerant Maize for Africa, FACASI, and PABRA, what technological combinations are needed, have already been used, or require financial support to enhance the climate-smart potential of current maize-mixed farming systems?</p> | <ul style="list-style-type: none"> • Use of the SIAF Framework to evaluate technologies targeting the local environment and context. | <p>integration of bundles of technologies (seed, livestock and management)</p> <ul style="list-style-type: none"> • 1.2.3 Improved and more sustainable crop and livestock systems with a reduced environmental footprint |
| <ul style="list-style-type: none"> • Building on success cases from FACASI and SIFAZ, for which technologies can a service provider model be established to reduce farm labor and drudgery and increase margins? | <ul style="list-style-type: none"> • Participatory evaluation and co-design of machinery and irrigation option starter packs with service providers in living labs Testing and integration of the service provider model with private-sector partners • Performance monitoring of machinery options to assess their impact on profitability, labor reduction, and gross margins | <ul style="list-style-type: none"> • 1.2.2 Appropriate scale machinery and irrigation systems, implemented in successful Service Provider Models |
| <ul style="list-style-type: none"> • How can the nutritional value of maize-mixed farming systems be enhanced? | <ul style="list-style-type: none"> • Testing of strategies to diversify crops, animal-derived foods, and income to increase nutritional value • Use SIAF Framework to evaluate social benefits | <ul style="list-style-type: none"> • 1.3.1 Evidenced -based information on planting materials, crop mixes, animal derived food and biofortified crops for more nutritious diets |
| <p>SCALE:</p> <ul style="list-style-type: none"> • What scaling strategies and pathways can grow via public-private partnership to reach millions of smallholder farmers with improved, climate-smart, nutritious technology packages? | <ul style="list-style-type: none"> • Identification of capacity needs • Assessment of the seed and animal producer agribusiness environment landscape • Scaling scan of relevant actors • Assessment of delivery methods for scaling | <ul style="list-style-type: none"> • 1.4.1 Increased knowledge and capacity building of relevant stakeholders in the agribusiness ecosystem on SI technologies and practices, machinery and irrigation and nutrition technologies and delivery systems • 1.4.2 Functional delivery and advisory systems including governments, policies and other regulatory |
| <p>List of other supportive work:</p> <ul style="list-style-type: none"> • WP1 links with other initiatives such as Sustainable Intensification, Excellence in Agronomy (use cases), SAPLING (scaling forage and livestock innovations), SHIFT, HER+, Rethinking Markets • Participatory monitoring and citizen science using cell phone-based surveys and tools (WP2) • Engagement with decision and policy makers to ensure mainstreaming of technologies and practices (WP4) • Capacity development of all actors in the agribusiness environment, including farmers, researchers, and public- and private-sector actors | | |

How it contributes to other WP's outcomes ?

- WP1 directly connects to WP3 because emerging enterprises will 'pull' products from WP1, exemplifying the pull effect, while farmers, service providers, and private-sector actors will 'push' products and solutions to WP3., exemplifying the push effect.WP1 will provide a platform for WP5 to expand inclusive, gender-equitable, and climate-resilient agribusiness initiatives.
- WP2 links to WP1 in providing advisory and recommendations based on risk assessment and WP6 for scaling.

The theory of change: 500-word narrative:

WP1 will collaborate with farmers, 40% of whom will be women and 40% youth, and service providers in the **agribusiness ecosystem** to enable and incentivize the assessment, application, and scaling of proven options to transform maize- systems into diverse, nutritious, and sustainable mixed-farming systems. These options will be scaled through collaborations with public- and private-sector partners to identify market opportunities, mainstream climate-smart SI practices, improving seed delivery, mechanisation, irrigation, and agricultural and nutrition advisory services. It aims to create the following benefits among smallholder farmers. The following benefits will be created: i) identification and promotion of diversified mixed-farming options that have already proven successful under similar conditions; ii) co-designed innovative, climate-smart, productive, profitable, socially inclusive, and environmentally sound SI practices—such as conservation agriculture (CA), improved maize-legume diversification, drought-tolerant varieties, and forage species from SAPLING—adapted to the needs of farmers and the conditions of targeted environments, and scaled through partners like NARS, non-governmental organizations (NGOs), and PABRA; iii) implementation of viable service provider models for appropriate-scale mechanization and irrigation delivery, potentially involving organizations like Kurima Machinery and Hello Tractor, and building on 2-wheel tractor and service provider models developed in Bangladesh and India, piloted under Farm Mechanization & Conservation Agriculture for Sustainable Intensification (FACASI) in ESA; iv) shared information to improve healthy diets, nutrient-dense crops, and dietary diversity in target countries, for example through animal-derived foods, growing more vegetables, and biofortification of beans, maize, and other crops; and v) augmented policy, finance, and service delivery capacity and extension models. In short, WP1 will mainly focus on the **Big Five technology** solutions:

1. **Maize for healthy diets**
Integrated maize-legume intensification practices using 9 promising innovations: inter-, strip-, double-, and relay cropping with 5 different legume species.
2. **Greening maize for healthy incomes**
Smallholder irrigation for winter vegetable production of high-value horticulture and legumes for 5 crops.
3. **Maize diversification for healthy animal nutrition**
Improved fodder production for dry-season feed using combinations of 3 types of green manure cover crops and 3 types of forage species.
4. **Maize intensification for a healthy environment**
Climate-smart SI practice bundles combining drought-tolerant maize and legume seed, agroforestry, and CA.
5. **Maize mechanization for healthy businesses**
Mechanized operations established through service provider models using 5 promising innovations: direct seeding, strip cropping, shelling, threshing, and transport.

The three workstreams—assess, apply, and scale—will generate a range of **outputs** (see the science table above). First, UU will **assess** prevailing conditions and the suitability of technological interventions to target technologies to the right contexts, including agribusiness environments. Second UU will **apply** prioritized technologies with partners in a community-based approach where participatory co-development will facilitate a change in knowledge, skills, attitudes, and behaviours towards SI practices and will incentivize the transition towards more productive, profitable, and sustainable agriculture systems. Finally, the Initiative will **scale** prioritized technologies through improved delivery systems and build greater capacity amongst key players. Important demand and scaling partners include government research and extension departments, CG Centers, universities, NGOs, United Nations (UN) organizations,

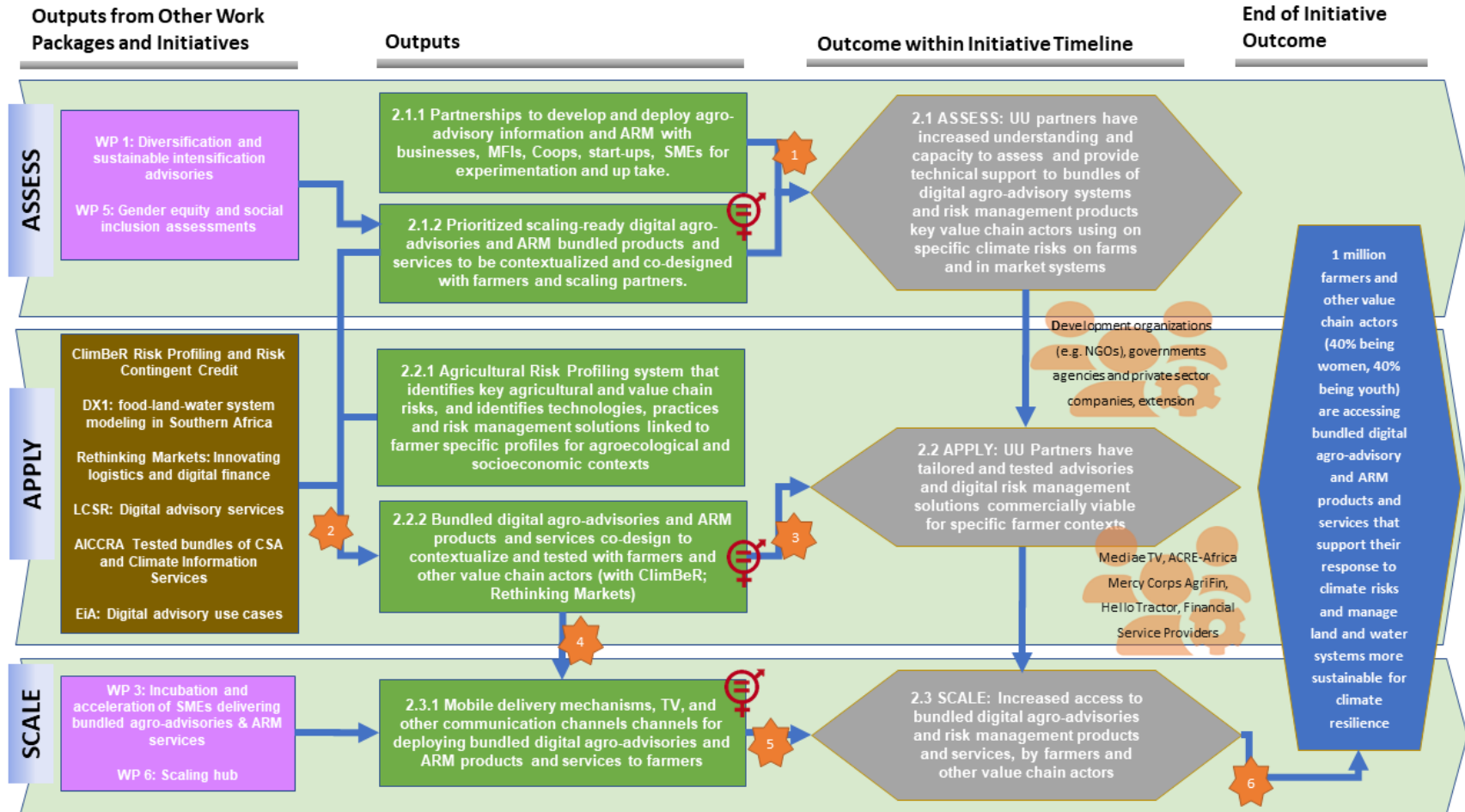
agribusinesses providing machinery and seed, and actors in the crop and livestock value chains. **The longer-term impact** is expected to be increased knowledge, productivity, incomes, and livelihoods resulting from more diversified and climate-resilient mixed maize farming systems and better access to diversified food.

WP1 will use advisory services from WP2 and will support WP3 and WP5. It will work closely with WP4 on the local and regional policy level and with WP6 on scaling approaches. One of the key linkages to other initiatives is that WP1 will adopt the Sustainable Intensification Assessment Framework (SIAF) framework for assessing performance and progress in evaluating and monitoring climate-smart SI practices, but other linkages exist with Africa RISING, EiA, Climate Resilient Livestock, SeEdQUAL, and SHiFT.³⁹

Assumptions:

1. Environmental impacts and the effects of climate change are drastically reduced when bundles of SI practices are widely adopted.
2. Selected diversification and SI activities result in more diversified and healthier diets.
3. Appropriate-scale mechanization extended by private-sector models leads to the reductions in agricultural drudgery and adoption barriers, translating into gains in productivity and profitability for smallholders in ESA.
4. Improved extension and delivery systems associated with a scaling strategy lead to lasting change in the sustained uptake of SI, mechanisation, nutrition, and irrigation practices.

Work Package 2: De-risk and Digitalize



Work Package 2

| | |
|---|---|
| <i>Work Package title</i> | WP2: De-risk and digitalize production and supply chains to build resilience and improve productivity |
| <i>Work Package main focus and prioritization (max 100 words)</i> | WP2 focuses on providing the underlying evidence and developing the strategic partnerships for designing and delivering Innovation Package bundles of digital agro-advisory systems and ARM products for the UU region. These products will be co-designed with farmers and innovation, demand, and scaling partners, and integrate advisories from WP1. With partners in the UU Scaling Hub, the bundled products will be delivered through multimedia digital channels, including mobile phone applications, television programming, and social media, to farmers and value chain actors (WP6). Promising business models for connecting farmers to markets, agro-advisories and ARM products will be pursued for commercialization with WP3. |
| <i>Work Package geographic scope (Global/Region/Country)</i> | <i>Ethiopia, Kenya, Malawi, Uganda, Zambia</i> |

The Science: 500-word narrative:

| Research Questions | Associated Scientific Methods | Key Outputs |
|--|--|--|
| <p>ASSESS:</p> <ul style="list-style-type: none"> What bundles of market information systems and digital agro-advisory and ARM services are scaling ready to be tested by partners with farmers? | <ul style="list-style-type: none"> Within each target country, in-person interviews, focus group discussions, and stakeholder workshops on agro-advisory information and ARM, such as mobile phone-based weather forecasts, pest and disease monitoring, agronomic advisory services, marketplaces for agricultural inputs, microfinance and credit, index-based insurance, and market linkages Scaling-readiness assessment framework | <ul style="list-style-type: none"> 2.1.1 Partnerships to develop and deploy agro-advisory information and ARM with businesses, MFIs, cooperatives, start-ups, and SMEs for experimentation and up take. 2.1.2 Prioritized scaling-ready digital agro-advisories and ARM bundled products and services assessed for scaling readiness and productivity, resilience, and/or profitability, to be contextualized and co-designed with farmers and scaling partners. |
| <p>APPLY:</p> <ul style="list-style-type: none"> What methods are best to assess risk and target ARM practices, technologies, and services to specific agroecological, value chain, and livelihood contexts? | <ul style="list-style-type: none"> Weather and climate information and crop risk mapping to inform index insurance and risk-contingent credit products Integrated methods for diagnosis, surveillance, prevention and forecasting of major pest and pathogen threats for important crops in ESA Rapid-assessment tools for farm and household credit risk assessments | <p>2.2.1 Agricultural Risk Profiling system that identifies key agricultural and value chain risks, and identifies technologies, practices and risk management solutions linked to farmer specific profiles for agroecological and socioeconomic contexts</p> |

| | | |
|---|--|--|
| | <ul style="list-style-type: none"> • Meta-analysis of peer-reviewed literature using the ERA Database developed under CCAFS. • Review and synthesis of barriers to the adoption of risk management practices in ESA contexts | |
| <ul style="list-style-type: none"> • How can digital agro-advisories and ARM practices, technologies, and services be designed into commercially viable bundles for ESA's SMEs? | <ul style="list-style-type: none"> • Partnership engagement for developing business models to support de-risked farming systems • Human-centred design of risk-informed financial service products like insurance and credit, bundled with other services and products such as advisories, inputs, and market access, such that they are appropriate, affordable, and gender and socially inclusive • Testing and adoption studies of different bundles of agro-advisories and ARM solutions on various digital platforms | <ul style="list-style-type: none"> • 2.2.2 Bundled digital agro-advisories and ARM products and services co-design to contextualize and tested with farmers and other value chain actors (with ClimBeR; Rethinking Markets) |
| <p>SCALE:</p> <ul style="list-style-type: none"> • How can bundled digital agro-advisories and risk management products best be delivered and scaled out to farmers and value chain actors through innovative mobile, television, and other multimedia digital delivery models? | <ul style="list-style-type: none"> • Deployment of climate information, agro-advisories, and financial products like insurance, credit, and savings, bundled with agro-advisory services through multimedia platforms such as the Shamba Shape Up television show and iShamba digital platform • Ex-post impact assessments of bundled agro-advisories, financial services, and ARM services | <ul style="list-style-type: none"> • 2.3.1 Mobile delivery mechanisms, TV, and other communication channels channels for deploying bundled digital agro-advisories and ARM products and services to farmers |
| <p>Interdependencies and synergies: WP2 links with other initiatives including ClimBeR (risk-contingent credit innovation); Excellence in Agronomy (use cases for digital advisories), Livestock, Climate and System Resilience (LCSR; digital advisory services); DX1 Digital Initiative food-land-water system forecasting in southern Africa; Rethinking Markets (logistics and digital finance work in Uganda).</p> | | |
| <p>To what other WP's outcomes this WP contributes to and how?</p> <ul style="list-style-type: none"> • WP1 Targeted interventions scaled through the delivery of agro-advisories and Shamba Shape Up TV show • WP3 Supporting commercializing the delivery of agro-advisory and ARM solutions designed by UU • WP5 Supporting GESI goals; WP6: Scaling hub | | |

The theory of change:

The theory of change **causal process** begins with assessing the scaling readiness of bundles of agro-advisory services and ARM products. This process starts with evaluating the needs of farmers and building relationships for design and deployment with **key demand partners** including development organizations including: the Mercy Corps AgriFin program; government extension, meteorological, and other agencies; and private-sector companies providing agro-advisory information and ARM solutions.^{xi} This demand perspective will be matched with a landscape analysis of the supply side of digital advisory services across the region. The **Big Five ARM and digital services** to be considered are:

1. **Soil moisture-based index insurance** product for Maize (*aMaizing*, with Acre Africa), Bundled Solutions of Index Insurance with Climate Information and Seed Systems to manage Agricultural Risks, and picture based insurance.^{xii}
2. **Pest and pathogen monitoring and advisory** systems.^{xiii}
3. **Risk-contingent credit product** from ClimBeR and the LendXS farmer credit scoring tool.^{xiii}
4. **Shamba Shape Up farm make-over television show and iShamba mobile platform** for disseminating advisories and marketing ARM products at scale.^{xiv}
5. **Hello Tractor award-winning Internet of Things platform** helping service providers deploy tractors services to smallholder farmers in need of services.^{xv}

This stage feeds into a co-design process with farmers and innovation partners to develop fit-for-purpose bundles of agro-advisory and ARM services and products. Using human-centred design approaches complemented with evidence-based scientific surveys, these services and products will be tailored and tested for specific farmer contexts with scaling partners on the ground to assess in-situ their viability to be commercialized. **Innovation partners** co-developing and testing these bundled solutions include demand partners; other CGIAR research initiatives; regional research programs like AICCRA, NARS—especially the Kenya Agricultural and Livestock Research Organization hosting the Kenya Agriculture Observatory Platform—and the Mercy Corps Sprout Platform under GIZ’s Digital Agriculture Africa; and key private-sector innovators including Acre Africa insurance products, Financial Access LendXS farmer credit assessment, and the Hello Tractor digital platform.^{xvi}

The subset of commercially viable bundles will be delivered through **scaling partners** who have established digital delivery platforms and with WP4 supporting agribusiness working in this space to deliver bundled agro-advisory and risk management services to at least 1,000,000 farmers (40% women). A key **scaling partner** is the Shamba Shape Up farm makeover television show with over 8 million viewers each week and its associated iShamba agro-advisory platform reaching over 500,000 farmers in Kenya and scaling out to Uganda and Zambia. In addition, the Mercy Corps AgriFin platform provides links to scaling partners including mobile network operators and government partners, including the Ethiopia Agricultural Transformation Agency.

Assumptions:

1. Farmers have a real need and demand for digital agro-advisory services to be better developed, targeted, and deployed.
2. Scaling readiness and prioritization assessments meet our scaling partners’ decision-making needs.

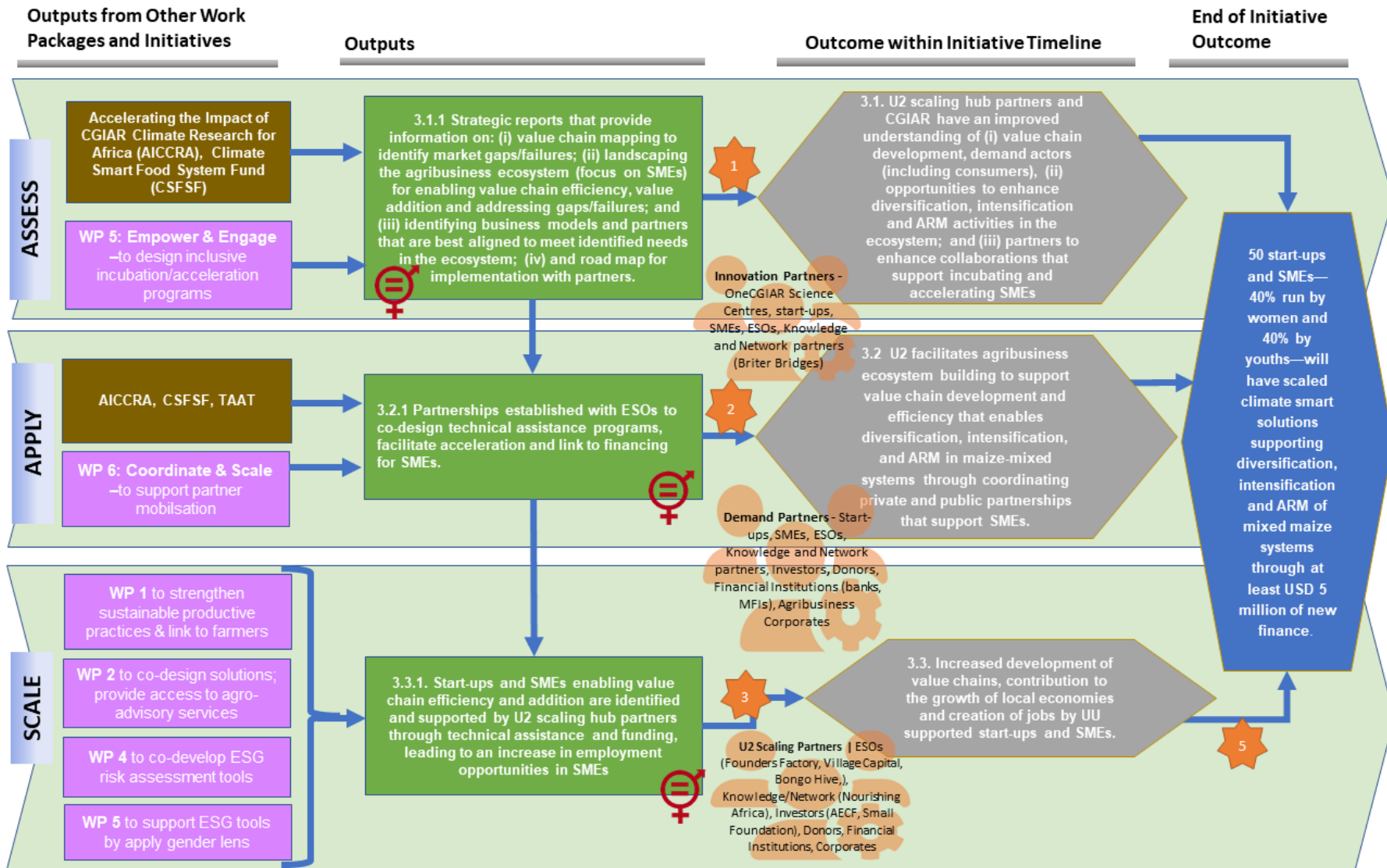
3. Scaling partners will invest the time to co-design bundled agro-advisory and ARM products with farmers and UU demand and innovation partners.
4. Farmers show willingness to purchase the bundled products at market rates if they meet their needs.
5. Partners are willing to deploy UU-designed and tested agro-advisory and ARM products at scale.
6. Partner channels are effective at delivering bundles to farmers.
7. Farmers access the agro-advisory platforms and ARM services.

Key Risks

1. Failure to develop and secure mission-critical partnerships, such that bundles of agro-advisories and ARM products cannot be tested and/or delivered to farmers.
2. Advisories provided to farmers result in poor outcomes, leading to farmers rejecting the advisories going forward.

Performance and results will include project activity monitoring, outcome studies, and impact assessments, including baseline surveys.

Work Package 3: Support & Accelerate Value Chain Agribusinesses



Work Package 3

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|---|--|
| <i>Work Package title</i> | WP 3: Support and accelerate value chain agribusiness enablers in maize-mixed systems |
| <i>Work Package main focus and prioritization (max 100 words)</i> | Through CGIAR's expertise in science-based innovations, value chain development, sustainable finance, and extensive network of partners, WP3 will support value chain actors to strengthen the capacity of agribusinesses to incentivize and enable diversification, intensification, and de-risking of maize-mixed systems. Agribusiness growth to fill critical market gaps in focus value chains through linkages with ESOs providing bespoke technical assistance will be a focus. It will organize and strengthen the agribusiness ecosystem by providing linkages to funding to scale operations through unlocking capital from financiers supporting innovative environmental and social enterprises. |
| <i>Work Package geographic scope (Global/Region/Country)</i> | Kenya, Zambia, Uganda, Tanzania, Rwanda, Ethiopia, Malawi, Zimbabwe, and South Africa. |

The Science: 500-word narrative:

| Key research questions | Main proposed scientific methods | Key outputs |
|--|---|--|
| <ul style="list-style-type: none"> • What are the needs and priorities of value chain actors and enablers to drive diversification efforts? | <ul style="list-style-type: none"> • A value chain mapping and assessment exercise through desk research, interviews, and roundtables to understand perceptions of CSA, existing initiatives, methodologies and business models, lessons learned, needs, and challenges to scale CSA practices and innovations. • Application of CCAFS country profiles and of the CCAFS climate risk profiling framework to assess which value chains to prioritize that will deliver strong CSA impacts in focus countries.^{xlvii} | 3.1.1 Strategic reports that provide information on: (i) value chain mapping to identify market gaps/failures; (ii) landscaping the agribusiness ecosystem (focus on SMEs) for enabling value chain efficiency, value addition and addressing gaps/failures; and (iii) identifying business models and partners that are best aligned to meet identified needs in the ecosystem; (iv) and road map for implementation with partners. |
| <ul style="list-style-type: none"> • What SME business models generate good financial returns provide the needed services and products for farmers to sustainably diversify, intensify and de-risk? | <ul style="list-style-type: none"> • Desktop research and interviews with start-ups and SMEs across One CGIAR initiatives and partners to assess both financial performance and environmental and social impact. | |

| | | |
|--|--|--|
| | <ul style="list-style-type: none"> • Application of CCAFS country profiles and adaptation of the CCAFS climate risk profiling framework to assess which value chains to prioritize that will deliver strong CSA impacts in focus countries.^{xlviii} • Link 2.0 Methodology inclusive business model design approach.^{xlix} | |
| <ul style="list-style-type: none"> • Are agriculture SMEs interested in dedicated programs focused on supporting diversification and climate-smart solutions? | <ul style="list-style-type: none"> • Application of CCAFS pipeline database to record and monitor the number of start-ups and SME applications to incubator or accelerator programs, including those rejected or accepted and those that successfully graduate. | 3.2.1 Partnerships established with ESOs to co-design technical assistance programs, facilitate acceleration and link to financing for SMEs. |
| <ul style="list-style-type: none"> • What specific agribusinesses have the greatest potential to attract investment and deliver an impact on diversification, productivity, and climate change mitigation/adaptation? | <ul style="list-style-type: none"> • Application of the CCAFS Rapid Assessment Tool developed for CSFSF that can support the pre-screening of food supply chain investments to determine their impact across key indicators like greenhouse gas emissions and water use. | 3.3.1. Start-ups and SMEs enabling value chain efficiency and addition are identified and supported by UU scaling hub partners through technical assistance and funding, leading to an increase in employment opportunities in SMEs. |
| <p>List other supportive work (e.g., capacity development, multistakeholder processes, policy engagement, etc.) that together with research activities can lead to the proposed outcome for this WP (see list of outcomes per WP below):</p> <ul style="list-style-type: none"> • AICCRA Zambia – Accelerator Grant mechanism • IITA Business Incubation Platform • WP2 links with other initiatives such as CLIMBER, Resilient Cities, Markets and Value Chains, and ShiFT • World Economic Forum Innovation Hubs: East Africa and Central and Southern Africa | | |
| <p>To what other WP's outcomes this WP contributes to and how?</p> <ul style="list-style-type: none"> • WP1 to support SMEs, particularly those operating upstream, by strengthening climate-smart, productive, profitable, and environmentally sound SI practices (WP4) and linking their products and services to smallholder farmers. • WP2 to support SMEs with co-designing solutions and/or providing access to digital agro-advisories and risk management products. • WP4 to support SMEs, particularly those operating upstream, as well as investors and donors, with technical risk assessment tools and management strategies. • WP5 to incorporate a gender and youth lens in designing capacity building programs, approaches, and ESG tools to de-risk operations and investments. • WP6 to mobilize and co-ordinate internal and external partners for implementation. | | |

The theory of change: 500-word narrative:

WP3 builds on CGIAR and partner value chain development experience and leverages innovative partnerships with ESOs supporting agribusinesses to strengthen UU priority value chains (see [Annex 16](#) for background). The WP3 ToC causal process starts with assessing the value chains for market gaps that need to be filled to support diversification, intensification and ARM service deliver to farmers (in partnership with WP1 and WP2), resulting in UU innovation and Scaling Hub partners having an improved understanding of how the agribusiness ecosystem can best fill these market gaps (Impact Pathway – Assess). The Big Five value chain enterprise typologies UU focusses on for improving value chain efficiency and value addition are:

1. **Input suppliers** *that increase productivity and yield of smallholder farmers* such as seed companies, irrigation and mechanization providers, animal feed and agrochemicals providers.
2. **Agro-advisory services** *in response to the need to help smallholder farmers overcome knowledge gaps limiting their productivity* such as digital information, extension and training.
3. **Agri-finance including Digital Financial Services** *to support the financing needs of smallholder farmers* such as credit, credit scoring tools, insurance and savings products.
4. **Aggregators (market linkages, logistics and distribution)** *to strengthen connections between smallholder farmers and consumers in a fair, transparent and profitable manner.*
5. **Value addition companies** (processors) *that source from smallholder farmers and offer them a reliable and predictable offtake.*

Leveraging existing initiatives such as AICCRA, the Climate-smart Food Systems Fund (CSFSF), and TAAT, WP3 will then apply this knowledge to develop partnerships with key ESOs to launch incubation and acceleration programs for SMEs (Impact Pathway – APPLY). Within these programs, UU will provide science-based technical assistance to complement existing venture-building activities, as well as other tools to support the investment process. UU will facilitate these SMEs to be supported by proposed partner ESOs including: [Bongo Hive](#) in Zambia, Zimbabwe, Malawi; [Founders Factory](#) in Kenya and South Africa; and [Village Capital](#) in East Africa.ⁱ In addition, UU will work with SME knowledge and network partners including [Nourishing Africa](#) and [Venture Capital for Africa \(VC4A\)](#), and will target financing from donors and sustainable investors including [Small Foundation](#), [Africa Enterprise Challenge](#), and [MCE Social Capital](#).ⁱⁱ These activities will facilitate ecosystem building by coordinating private and public partnerships that enable the flow of information, knowledge, technologies, funding, and other resources to start-ups and SMEs, (Impact Pathway – SCALE). Ultimately, these SME agribusinesses supported by UU Scaling Hub and ESO partners through technical assistance and funding will have improved capacity to provide services and products to sustainably intensify, diversify, and de-risk value chains with ARM solutions that promote smallholder productivity, profitability, and resilience to climate change.

Assumptions:

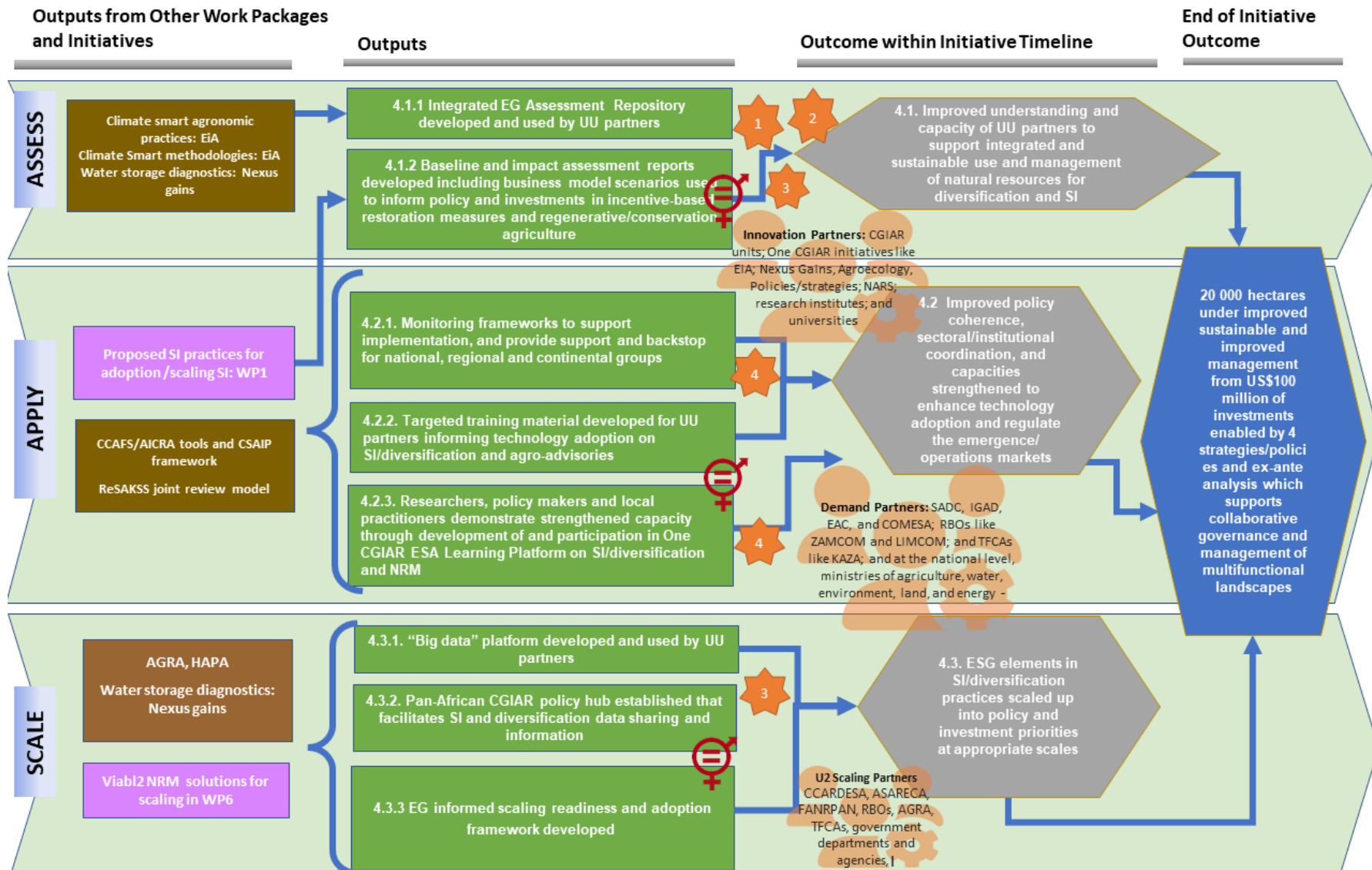
1. UU focus value chains have market gaps/failures that if addressed could result in enhanced diversification, intensification and risk-management.
2. Start-ups, SMEs, incubators, and accelerators are interested in dedicated programs focused on climate-smart solutions.

3. SMEs supported through UU result in improvements to value chain efficiency and development.
4. Improvements in value chain efficiency and development result in financing to agribusinesses that lead to diversification, intensification and ARM.

Key Risks

1. Decreased financing for investment into start-ups and SMEs due to COVID-19 uncertainties.
2. See section 7.3 for additional risks.

Work Package 4: Conserve & Enable



Work Package 4

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|---|---|
| <i>Work Package title</i> | WP4: Conserve and enable multifunctional landscapes to promote sustainable diversification and intensification |
| <i>Work Package main focus and prioritization (max 100 words)</i> | WP4 will supporting STI-Bs and ARM innovations to bring sustainable NRM, underpinned by a strengthened policy/governance enabling environment. Ex-ante analysis of key natural resource inputs will be undertaken, with water availability in its various forms of particular importance given the predicted impacts of climate change. STI-B activities and resource use can then be targeted at environmental restoration, and degradation avoided. Analyses linked to business model framings will help to unlock new finance streams. WP4 is based at the landscape/national scale and will use various data and assessment methods that capture both the baseline NRM conditions/governance systems and likely future environmental risks. |
| <i>Work Package geographic scope (Global/Region/Country)</i> | Regional: East and Southern Africa. Phases 1 – 3 countries |

The Science: 500-word narrative:

| Research Questions | Associated Scientific Methods | Key Outputs |
|---|--|--|
| <p>ASSESS:</p> <ul style="list-style-type: none"> What are the environmental and governance (EG) conditions of key natural resource inputs in the target landscapes and the likely impacts on them of proposed STI-B NRM interventions? | <ul style="list-style-type: none"> Remote sensing water accounting assessments used in ARM Integrated spatial monitoring and assessments at the landscape level of resource flows (surface/groundwater; sediment) for ecosystem services enhancement Hydrological assessments of groundwater availability for STI-Bs and possibilities for managed aquifer recharge assessments for replenishment of groundwater supplies, building on the water storage diagnostic methodological framework of Nexus Gains initiative and used in ARM Social, institutional, and policy assessments of existing NRM policy priorities and incentives, and mechanisms needed to promote collective coordination and policy reform Business model approaches for STI-Bs linked to NRM restoration, including suitability mapping for agri-business pipelines, developed and packaged for decision-makers and financiers leading to EG insight Integrated biophysical and economic models using the integrated assessment methodology (IAM) to understand the implications of climate change and related stressors on food production systems, regional trade, diversification, and economic development | <p>4.1.1 Integrated EG Assessment Repository developed and used by UU partners</p> |

| Research Questions | Associated Scientific Methods | Key Outputs |
|---|--|---|
| <ul style="list-style-type: none"> What are the benefits for NRM derived from incentive-based STI-Bs aimed at regenerative/CA and restoration? | <ul style="list-style-type: none"> Quantitative and qualitative methods to assess the impacts of incentive-based regenerative/CA or restoration within STI-Bs undertaken in degraded maize-mixed systems, such as PES and exclosures. | <p>4.1.2 Baseline and impact assessment reports developed including business model scenarios used to inform policy and investments in incentive-based restoration measures and regenerative/CA</p> |
| <p>APPLY:</p> <ul style="list-style-type: none"> How can NRM policy coherence and sectoral/institutional coordination be improved and capacities strengthened to enhance STI-B adoption and how can governments promote these developments for climate change adaptation and environmental sustainability through various channels? | <ul style="list-style-type: none"> Application of 7-step process for setting national targets and benchmarks for natural resource-related SDGs Multiple CSA and CSAIP frameworks and approaches that support climate adaptation used to inform various engagements including climate negotiations Multi-tiered approach for strengthening researchers' capacity to translate and communicate results and evidence; and 2) increasing policymaker awareness. | <p>4.2.1. Monitoring frameworks to support implementation, and provide support and backstop for national, regional and continental groups</p> <p>4.2.2. Targeted training material developed for UU partners informing technology adoption on SI/diversification and agro-advisories</p> <p>4.2.3. Researchers, policy makers and local practitioners demonstrate strengthened capacity through development of and participation in One CGIAR ESA Learning Platform on SI/diversification and NRM</p> |
| <p>SCALE:</p> <ul style="list-style-type: none"> How can NRM informed STI-B interventions be supported and scaled through appropriate policy and investment priorities? | <ul style="list-style-type: none"> Composite datasets on NRM to inform sustainable, climate-smart STI-B developments, aggregated into a big data platform, including practical, achievable ways for big data to add value to existing data exchange plans and protocols, with inbuilt analytics to facilitate its use. | <p>4.3.1. "Big data" platform developed and used by UU partners</p> |
| | <ul style="list-style-type: none"> Coordinated and iterative engagement across CGIAR centres, initiatives, and partners such as AGRA through HAPA, to provide strategic policy support to the AU and other regional organizations on climate- and water-smart STI-Bs and an advisory service to government | <p>4.3.2. Pan-African CGIAR policy hub established that facilitates SI and diversification data sharing and information</p> |
| | <ul style="list-style-type: none"> Application of EG scaling readiness scan and adaptive scaling frameworks | <p>4.3.3 EG informed scaling readiness and adoption framework developed</p> |
| <p>List other supportive work:</p> <ul style="list-style-type: none"> WP 4 links with EIA, Agroecology, Policies/strategies and Nexus Gains., in scaling and ensuring the spill over of water management diagnostics, exploring policy and investment options to promote climate-smart agronomic practices, undertaking water accounting assessments, and applying financial metrics that capture state-of-the-art inventories of practices and mechanisms for the uptake of and investment in agroecological approaches. Through WP4 can also link with regional initiatives such as the USAID-Resilient Waters Program, AGRA's HAPA, FANRPAN, and AGNES. | | |
| <p>To what other WP's outcomes this WP contributes to and how?</p> <ul style="list-style-type: none"> Promote environmental sustainability of WP1's targeted interventions through integrated environmental assessments while understanding landscape-level natural resource availability and the impacts and trade-offs of diversification practices. WP1 and WP3 by modelling changes in trade patterns. WP5 in ensuring an inclusive policy and investment landscape for women and youth. | | |

| Research Questions | Associated Scientific Methods | Key Outputs |
|---|--------------------------------------|--------------------|
| <ul style="list-style-type: none"><li data-bbox="247 224 1917 300">• WP3 in providing scope for the policy and regulatory environment of the agribusiness ecosystem and in so far as the regulatory and policy environment could incentivize environmental and governance support interventions in targeted agribusinesses. WP6 is the vehicle through which all scalable solutions will be channelled. | | |

The theory of change: 500-word narrative:

As with the other UU WPs, the theory of change **causal process** for WP4 is designed to deliver on three impact pathways: 1) assess, 2) apply, and 3) scale.

Through *Assess* established methodological approaches and modelling will be used to develop integrated environmental, governance and business assessments of potential and adopted STI-B with strong natural resource management (NRM)-based interventions at the landscape level. These are critical for managing risk, informing policy and investment interventions, data management, and monitoring towards improved decision making by different **key demand, innovation and scaling** at regional, national and local level all contributing to the intermediary outcome.

Apply focuses on interventions ranging from policy recommendations on the improvement of policy and institutional mechanisms for NRM, land use planning, national-level indicators and monitoring frameworks for policy, investment options and capacity strengthening activities. While demand and scaling partners remain as in the *Assess* pathway, innovation partners have been engaged specifically for the contribution they make to enhancing policy landscapes and capacity strengthening initiatives at a regional level, and for their convening power of regional and sub-regional dialogues and multi-partner initiatives to achieve the intermediary outcome.

Scale is a feeder of scalable options from WP5 into WP6's Scaling Hub and seeks to address the challenge of limited availability of proven strategies and approaches to scale climate-smart SI options up, out and deep in partnership with innovation and scaling partners like TAAT, AICCRA, One CGIAR initiatives, and others.

Through these three impact pathways, UU hopes to achieve the WP4's **end of Initiative outcome**: *20 000 hectares under sustainable and improved management from USD 100 million of investments enabled by 4 strategies and policies and ex-ante analysis which supports collaborative governance and management of multifunctional landscapes by 2024.*

The **Big Five NRM interventions** prioritized for implementation at multiple scales include:

1. *Farm level*: **Energizing food and water systems through [solar-powered irrigation](#)** (working in partnership with Nexus Gains) to sustainably meet the growing irrigation demand in maize-mixed systems in ESA, using tried and tested methods that help investors and policy-makers determine where to direct the spread of solar-powered irrigation in a given country.ⁱⁱⁱ
2. *Community level*: **Community-based land use mapping.**
3. *Basin/landscape level*: **Incentivising restoration of landscapes** through Payment for Ecosystem Services (PES) and [CA practices](#) such as minimum till, and residue management to improve soil fertility.ⁱⁱⁱ
4. *National level*: **[Defining and quantifying national-level targets, indicators and benchmarks](#)** for management of natural resources to achieve the sustainable development goals.^{iv}
5. *Regional level*: **[Integrated impact models](#) to model the impact of climatic risks, and adaptation and mitigation strategies**, on inter-regional trade patterns.^{iv}

Assumptions

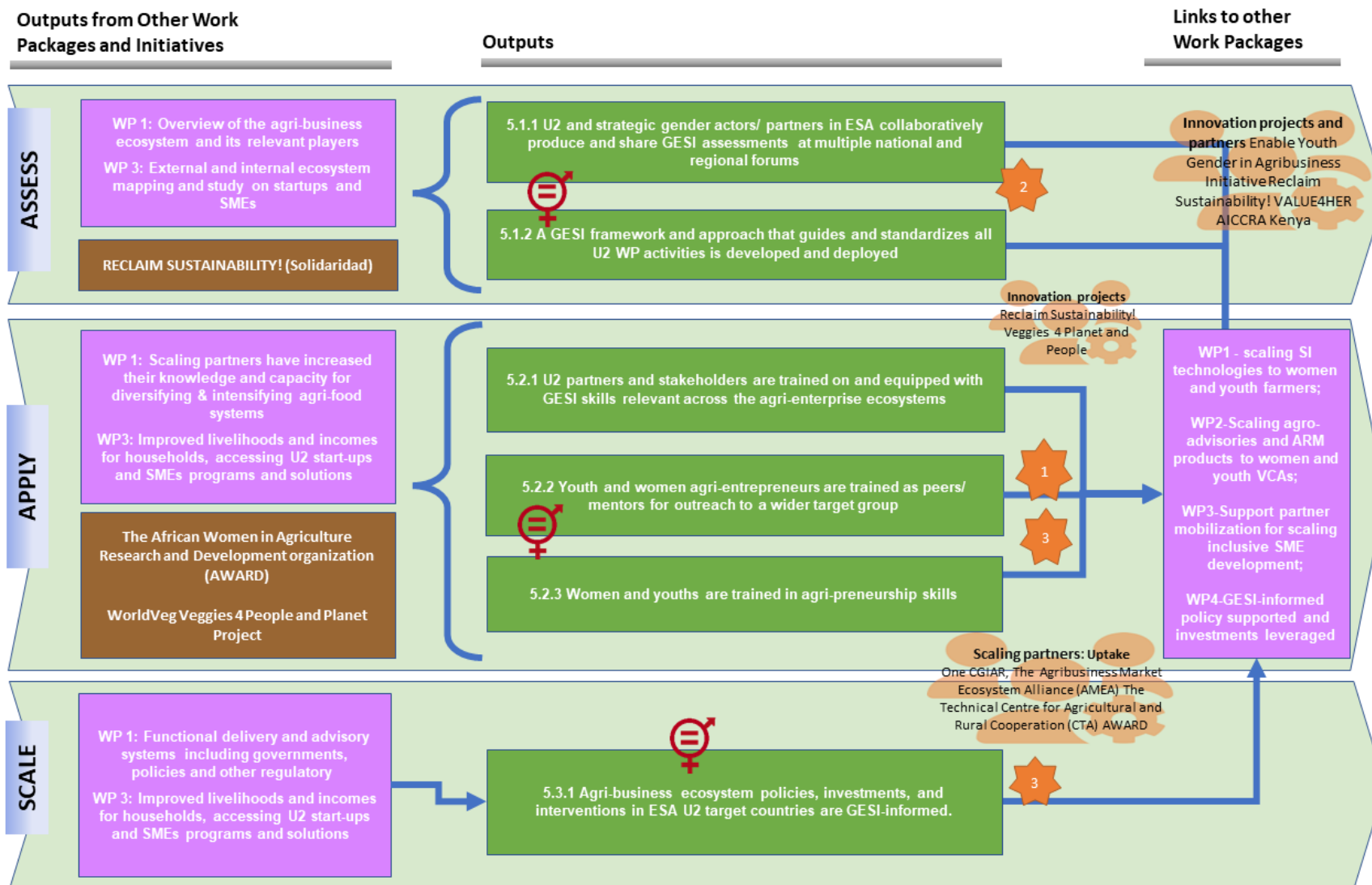
1. Integrated environmental assessments used inform climate- and water-smart sustainable intensification policy making and NRM.

2. Collaborative governance and institutional coordination will be enhanced improved multi-stakeholder dialogue, capacity strengthening, and improved data sharing arrangements.
3. Smallholder farmers, local communities, and agri-SMEs will benefit from capacity development and greater participation in local land use planning and NRM activities.

Key risks

- Multi-partner initiatives have temporary lifecycles and do not promote long-term sustainable management of landscapes.
- The agribusiness ecosystem is constrained by unfavourable policy and investment environments beyond the sphere of influence of UU.
- Proposed and adopted STI-Bs have unintended environmental consequences further down the value chain or in the landscape.

Work Package 5: Crosscutting Empower and Engage



Work Package 5

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|---|---|
| Work Package title | Cross-cutting WP 5: Empower and engage women and youth in agribusiness ecosystems |
| Work Package main focus and prioritization (max 100 words) | WP5 will address widespread gender and social inequalities in ESA agribusiness ecosystems. It will assess ecosystems in different local and national contexts to map multidimensional challenges and opportunities. It will apply coordinated transformative change interventions across UU WPs such as strengthening technical and financial capacity; enhancing access to on- and off-farm assets, services, and innovations; increasing engagement and agency through targeted investments, innovations in STI-B design, and peer-mentor support and training; and establishing change agents and champions. It will identify various pathways to transformative change that correspond to local demand, informed by a robust GESI framework, and designed to adaptively <i>scale up and scale out</i> inclusion in agribusiness ecosystems. |
| Work Package geographic scope (Global/Region/Country) | Zambia, Zimbabwe, Malawi, Tanzania, Kenya, Mozambique |

The Science: 500-word narrative:

| Key research questions | Main proposed scientific methods | Key outputs |
|--|--|--|
| ASSESS: What are practical, contextual, systemic, and structural barriers to more inclusive agribusiness ecosystems in ESA countries? | A qualitative and quantitative meta-analysis applying a GESI framework to understand bottlenecks and structural barriers to more inclusive agribusiness. | 5.1.1 UU and strategic gender actors/ partners in ESA collaboratively produce and share GESI assessments at multiple national and regional forums 5.1.2 A GESI framework and approach that guides and standardizes all UU WP activities is developed and deployed |
| APPLY: What combinations of targeted technical, financial, and social capacity strengthening will enhance the agri-entrepreneurial capacity of marginalized women and youth? What frameworks and incentives will strengthen an enabling policy environment, incentivize a responsible private sector, and better inform and empower civil society and grassroots | <ul style="list-style-type: none"> Workshops and discussions to enable public, private, and grassroots stakeholder co-design of gender-transformative and youth-inclusive entrepreneurship models, approaches, and strategies | 5.2.1 UU partners and stakeholders are trained on and equipped with GESI skills relevant across the agri-enterprise ecosystems 5.2.2 Youth and women agri-entrepreneurs are trained as peers/ mentors for outreach to a wider target group |

| Key research questions | Main proposed scientific methods | Key outputs |
|--|--|--|
| actors to demand inclusive and transformative agri-enterprises? | <ul style="list-style-type: none"> Documented stories of change that provide evidence of inclusive agri-entrepreneurship involving women and youth, including from marginalized groups | 5.2.3 Women and youths are trained in agri-preneurship skills |
| SCALE: What interventions will reduce labor and drudgery across value chains, especially for women, and ensure the productive engagement of women and youth? | Secondary data review, focus group discussions, key informant interviews, primary research | 5.3.1 Agri-business ecosystem policies, investments, and interventions in ESA UU target countries are GESI-informed. |
| <p>List other supportive work (e.g., capacity development, multistakeholder processes, policy engagement, etc.) that together with research activities can lead to the proposed outcome for this WP (see list of outcomes per WP below):</p> <ol style="list-style-type: none"> Links with other CGIAR initiatives such as HER+ Solidaridad Southern Africa (SAF) and Trust Africa's Reclaim Sustainability (RECLAIM Sustainability!) Program-led Gender and Social Inclusion Analysis The Fellowship Program for Women in Agri-Business and the Gender in Agri-business Initiative led by the African Women in Agriculture Research and Development organization (AWARD) The African Development Bank's Agriculture and Agro-Industry Development Department's Enable Youth Program The "Veggies 4 Planet & People" project led by the World Vegetable Center for Ethiopia and Kenya, supported by the IKEA Foundation, which aims to establish 200 vegetable business networks – 120 in Kenya and 80 in Ethiopia – to engage an estimated 4,000 women and youth in market activities to enhance their livelihoods and diets. The Technical Centre for Agricultural and Rural Cooperation's women and youth entrepreneurship and employment information and communication technologies solutions. https://value4her.hivebrite.com/ The World Bank's Accelerating Impacts of CGIAR Climate Research in Africa Program (AICCRA) The Agribusiness Market System Alliance initiative Feminist consultancies like African Women Development Fund, Includovate, relevant gender departments of Universities and NARES in the focus countries. GESI capacity development of all actors in the agribusiness environment including smallholders, researchers, and public- and private-sector actors. | | |
| <p>To what other WP's outcomes this WP contributes to and how?</p> <ol style="list-style-type: none"> WP5 is cross-cutting for the entire Initiative and will inform and impact all UU WPs. During the "Assess" Phase of the Initiative, WP5 will ensure that all UU WPs provide relevant space and scope to apply and expand socially inclusive, gender-equitable, youth-focused climate-resilient agribusiness initiatives. | | |

The theory of change: 500-word narrative:

Widespread gender and social inequalities in the agrifood system (AFS) create inefficiencies and disempowers and disadvantages stakeholders, undermining the potential of the AFS in a dynamic environment. WP5 aims to ensure that the agribusiness ecosystem becomes a key opportunity to bridge the gender gap in ESA, and that ESA youth, particularly from marginalized groups, are engaged and empowered as agri-entrepreneurs. It seeks to bring insight on inequalities from individual- to systems-level affected by informal and formal structures.

WP5 will use methods from behavioural and social science to build understanding of barriers to agency, restrictive social norms, constraints to access to resources, failures in policies and governance. Through mixed methods data collection including interviews with public, private-sector, farmers, agribusiness groups, women's groups and R4D partners in selected locations, a critical assessment of agribusiness ecosystems will be undertaken to identify key challenges, opportunities, and contextually relevant conditions for future effective engagement of different socially-marginalizing groups. Given WP5's cross-cutting nature, its activities and outputs are mapped to all four end-of-Initiative outcomes.

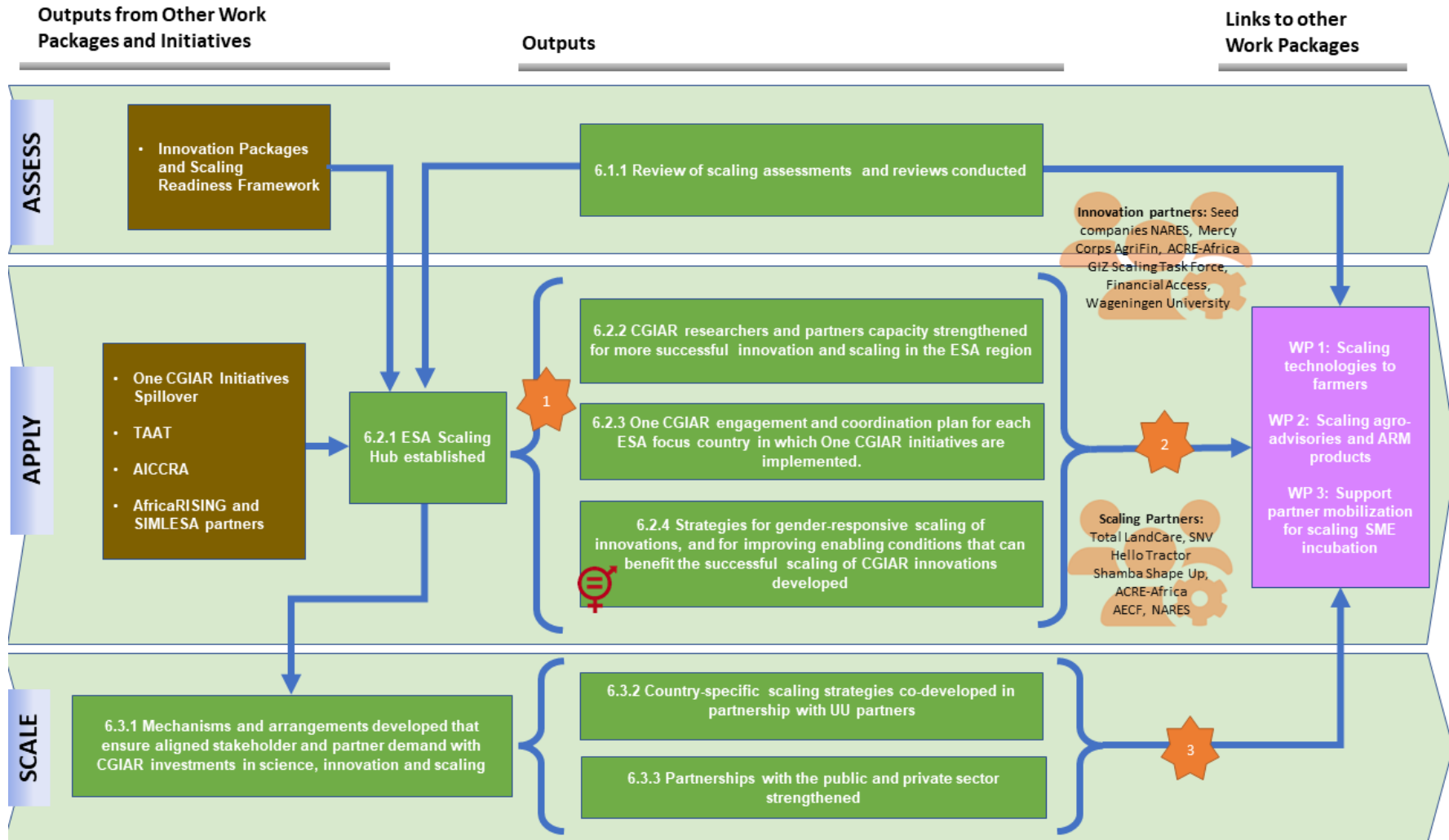
To achieve, and more importantly, sustain the above initiatives, WP5 will work with a diverse group of institutional and grassroots partners to ensure the following conditions:

- Coherence and complementarity of policy instruments, public and private-sector funding, donor interventions, investments, and technical and capacity-strengthening initiatives.
- GESI know-how: an actionable GESI framework and approach that addresses practical as well as systemic, structural barriers to transformative change, which can be adapted to specific local contexts.
- A coalition or network of accountable public-sector, responsible private-sector, and informed and aware civil-society actors and initiatives, including R4D and grassroots actors, with a vision to ensure more inclusive agribusiness in ESA.

Assumptions:

- Landownership is not a key barrier to agri-enterprise for women and youth; different types of land lease and tenurial arrangements can be negotiated in specific local contexts.
- Predominantly male agribusiness institutions and actors across agricultural value chains can be capacitated and incentivized to support, implement, and sustain more inclusive and gender-transformative agri-entrepreneurship.
- Specific cultural, socioeconomic, and sociopolitical contexts can be addressed to enable more gender-transformative and youth-inclusive agribusiness initiatives.
- Better agribusinesses are designed to improve food security, dietary diversity, and nutrition for diverse groups of producers and consumers.

Work Package 6: Scale & Coordinate



Work Package 6

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|---|--|
| <i>Work Package title</i> | Cross-cutting WP 6: Scale agrifood innovations and coordinate One CGIAR and partner scaling activities in ESA |
| <i>Work Package main focus and prioritization (max 100 words)</i> | WP6 focuses on embedding and coordinating the UU WPs and other One-CGIAR and partner initiatives, ultimately in order to facilitate scaling of agricultural innovations in ESA. The Scaling Hub will bring together CGIAR’s key scaling partners in the region in a hub-and-spokes model that invests in advancing state-of-the-art “science of scaling” and “practice of scaling.” The Scaling Hub will develop an operational strategy and inform, activate, and scale innovations that respond to regional or country demand using the Scaling Readiness approach (Section 4.1) to enable partners who will do most of the scaling in practice. |
| <i>Work Package geographic scope (Global/Region/Country)</i> | Regional, Phase 1 – 3 countries |

The Science: 500-word narrative:

| Research Questions | Associated Scientific Methods | Key Outputs |
|--|--|--|
| <p>ASSESS: What scaling strategies and pathways can be fostered with public and private-sector partners to reach millions of smallholder farmers with improved, climate-smart, nutritious Innovation Packages?</p> | <ul style="list-style-type: none"> • Literature review and ex-post analyses of projects, programs, and their innovation and scaling models • Cross-case study analysis of successful and failed interventions and approaches aimed at scaling innovation in ESA • In-depth interviews with key innovation and scaling experts and partners in ESA to improve innovation and scaling • Analysis of CGIAR and partner innovation and scaling capacity gaps | <p>6.1.1 Review of scaling assessments and reviews conducted</p> |
| <p>APPLY: Which ESA public and private networks and partners are best positioned to support the scaling of innovations? What approaches, concepts, and tools can enable gender-responsive scaling of innovations in ESA?</p> | <ul style="list-style-type: none"> • Network Analysis to identify key stakeholders in ESA food system innovation and scaling networks • Analysis using the Scaling Readiness approach of common bottlenecks in ESA enabling environments that constrain the scaling of innovations for various gendered user groups (e.g. regulation, access | <p>6.2.1 ESA Scaling Hub established</p> <p>6.2.2 CGIAR researchers and partners capacity strengthened for more successful innovation and scaling in the ESA region</p> <p>6.2.3 One CGIAR engagement and coordination plan for each ESA focus country in which One CGIAR initiatives are implemented.</p> |

| Research Questions | Associated Scientific Methods | Key Outputs |
|--|--|--|
| | financing, access to market using the Scaling Readiness approach) <ul style="list-style-type: none"> Implementation of Scaling Readiness assessment and related tools to develop strategies for gender-responsible scaling of innovations | 6.2.4 Strategies for gender-responsive scaling of innovations, and for improving enabling conditions that can benefit the successful scaling of CGIAR innovations developed |
| SCALE: How can the UU Scaling Hub identify, monitor, and evaluate scaling opportunities for One CGIAR thematic initiatives and their applicability for other ESA countries? | <ul style="list-style-type: none"> Ongoing demand-supply-feasibility assessment Analysis of stakeholder needs and regional and national policies and investment plans and how these can inform innovation and scaling investments by CGIAR and partners Evidence-based approaches including MEL and Scaling Readiness to inform iterative, adaptive engagement and decision-making with country partners and One CGIAR thematic initiatives | 6.3.1 Mechanisms and arrangements developed that ensure aligned stakeholder and partner demand with CGIAR investments in science, innovation and scaling 6.3.2 Country-specific scaling strategies co-developed in partnership with UU partners 6.3.3 Partnerships with the public and private sector strengthened |
| List other supportive work: <ul style="list-style-type: none"> Work and capacity generated through TAAT, SIMLESA, Africa RISING, and Accelerated Value Chain Development in collaboration with partners such as AGRA, AfDB, the ILRI Impact at Scale, and IITA P4D All CGIAR scaling teams and One CGIAR initiatives in a cohesive synergized effort. ESA-WCA RII joint model for scaling will also be explored. GIZ Scaling Taskforce, a pillar of CGIAR's scaling efforts, to strengthen the capacity of the Scaling Hub. | | |
| To what other WP's outcomes this WP contributes to and how? WP6 is cross-cutting for the entire Initiative and will inform and impact all UU WPs. During the Assess phase of the Initiative, WP6 will ensure that all UU WPs provide relevant space and scope to apply and expand socially inclusive, gender-equitable, youth-focused climate resilient agribusiness initiatives. | | |

The theory of change: 500-word narrative:

The ToC **causal process** for WP6 is designed with pathways that are interrelated to the other WPs and link with other initiatives whose goal is to feed potential scalable innovations through the UU Scaling Hub, including Plant Health, Sustainable Intensification, EiA, SAPLING, and Nexus Gains. This WP rests on the premise that despite a growing body of literature about how to scale innovations contributing to the SDGs and other transformative agendas, little attention has been given to how scientists and program managers engage with the scaling process in practice.^{lvi} The three UU impact pathways, Assess-Apply-Scale, will provide WP6 a starting point for developing guidelines for best scaling practices, pinpointing scaling capacity and knowledge gaps, and enabling the identification of key innovation and scaling partners at the regional and country levels. A crucial function of the Scaling Hub will be to provide regional backstopping on scaling. State-of-the-art methods such as Scaling Readiness (Section 4.1) will be used to design Innovation Packages, identify bottlenecks for scaling, and backstop the implementation of activities aimed at overcoming those bottlenecks, with a focus on gender-sensitive country and regional constraints. This work on the *practice of scaling* will go beyond scaling assessments, and will include in-country support to various incubation and SME scaling processes, as well as facilitation of regional communities of practice and innovation networks. This work will be complemented and informed by investment in the *science of scaling* in collaboration with Wageningen University to (1) understand the big picture of scaling innovation; (2) validate, tailor, and develop capacity for responsible scaling; and (3) create a conducive environment for responsible scaling of innovations.^{lvii}

Demand partners are national government departments, agribusiness SMEs, smallholder farmers, and development organizations. **Innovation partners** include the One CGIAR initiatives and CGIAR scaling teams in ESA; Wageningen University, the GIZ Scaling Taskforce, TAAT, AICCRA, Africa RISING, and SIMLESA. **Scaling partners** include the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), the African Development Bank (AfDB), the Alliance for a Green Revolution in Africa (AGRA), innovation hubs like Lusaka Green Innovation Hub, Regional Economic Communities (RECs), and private-sector partners identified by the UU WPs and One CGIAR initiatives, such as Hello Tractor, Mediae, and Acre Africa.

Assumptions

1. One CGIAR scaling and innovation in ESA is currently hampered by a lack of a dedicated coordination mechanism in the region.
2. One CGIAR initiatives and entities will use the Scaling Hub to support scaling readiness assessments for different ESA countries.
3. There will be incentive mechanisms that ensure that CGIAR Global Science and RII collaborate and respond to country and regional demand and priorities.

Key risks

1. Too little investment in the science and practice of scaling innovations, resulting in business-as-usual thinking.
2. A lack of enabling conditions for scaling of innovations and investment in research.
3. Unintended negative consequences of scaling innovations at the technological, social, economic, or broader environmental levels, which can be mitigated by using the Scaling Readiness framework.

Performance and results will include project activity monitoring, outcome studies, and impact assessments, including baseline surveys. Continuous monitoring, evaluation, and learning (MEL) regarding the scaling process and its impacts on people and the environment are critical

for effective scaling.^{lviii} As such, UU MELIA activities will focus not only on outputs but also outcomes, unintended consequences, sustainability, and systemic changes.

4. Innovation Packages and Scaling Readiness Plan

4.1 Innovation Packages and Scaling Readiness Plan

Scaling is core to UU. WP6 includes a regional Scaling Hub with a team of dedicated scaling experts to coordinate and backstop scaling for CGIAR initiatives and partners across ESA. The Scaling Hub will (i) embed innovations from by other initiatives like EiA, Plant Health, NexusGAINS, and SAPLING into ESA-specific Innovation Packages; (ii) identify ESA bottlenecks for scaling; (iii) design Scaling Strategies with partners; (iv) monitor changes in readiness and the use of innovations across Genetic Innovation (GI), RAFS, or Systems Transformation (ST) Initiatives, and (v) facilitate regional and in-country scaling and innovation networks.

WPs 1, 2, and 4 use Scaling Readiness to prioritize and package innovations for broader use by farmers, policy makers, and the private sector. An initial set of 78 Core Innovations was identified across the WPs based on a combination of CGIAR Golden Eggs, impact evaluations of prior research, and stakeholder consultations ([Annex 17](#)). Community-based adaptation and human-centered design approaches will be used to identify Innovation Packages of interest, and then the Scaling Readiness approach will enable assessment of 10 Innovation Packages.

UU should be prioritized for First Wave scaling backstopping and start Light Track from quarter 1, 2022 onwards and Standard Track from quarter 4, 2022 onwards, and Advanced Track for the Initiative in 2024, aiming to cover 76%-100% of its Innovation Packages. The Initiative allocated USD 950,000 to implement the Innovation Packages and Scaling Readiness plan (2022: USD 320,000; 2023: USD 350,000; 2024: USD 280,000). Dedicated activities, deliverables, indicators, and line-items are included in the Management Plan's MELIA and Budget Sections.

5. Impact statements

5.1 Nutrition, health & food security

Challenges and prioritization: Maize dominates crop production and calorie consumption in ESA; 70% of maize produced in Africa is for human consumption, and maize supplies half of total calories consumed in Zambia and Malawi. Maize also has low nutritional value and is vulnerable to climate change.^{lix} Together, these factors make the region a hot spot for malnutrition and food insecurity. Women and youth are particularly vulnerable; 33% of children under 5 suffer from stunting and 6% from wasting. Evidence strongly suggests that diversification will bolster food security and stabilize production in ESA. As such, UU prioritizes diversification in maize systems via integrating nutrient-dense legumes, vegetables, fruits, tree crops, livestock, and fish, along with sustainable intensification of production with a focus on maize and informed by use of improved nutritious, climate-resilient cultivars, integrated land and soil fertility management, integrated pest management, and optimized input use efficiency.

Research questions: WP1 asks questions around at how maize-mixed farming systems can produce and deliver greater nutritional value to consumers to increase food and nutrition security, particularly for women and children (also **WP5**). **WP1** and **WP4** asks from different perspectives how farming can be more efficient and sustainably intensified through diversification strategies under a changing climate (WP1;WP4). How best combinations of technical, financial, social, and capacity support for women and youth agribusiness scaling pathways can reach millions of smallholder farmers with improved, climate-smart, nutritious technology packages (**WP1-2;WP6**).

| WP | Research/Activities | Outputs | Outcomes | 3-year targets and metrics |
|----|--|--|--|---|
| 1 | Participatory evaluation and co-design of novel combinations of SI, crop and fodder mixes, and livestock options in community-based approaches using “living labs” | (a) Climate-smart, productive, profitable, and environmentally sound bundled SI practices, enabling the diversification of farming systems; (b) functional delivery & advisory systems enabled by government & policy. | (a) Scaling partners have increased their knowledge and capacity for diversifying and intensifying agrifood systems; (b) Farmers, value chain actors, and consumers in maize-mixed systems have begun using climate-smart SI and diversification practices | 50,000 farmers, value chain actors, and consumers—40% of whom are women—using SI and diversification bundled technologies |
| 5 | Support for and strengthening of women- and youth-led agribusinesses in Africa that produce innovative products and approaches that combat malnutrition | (a) A GESI framework and approach to inform all UU WPs; (b) Young and female agri-entrepreneurs are trained as peer mentors; (c) women and youth are trained in agri-preneurship skills | (a) Capacity of UU partners to deliver GESI compliant services in the agri-business ecosystems, including nutrition, health, and well-being. | 50 start-ups and SMEs—40% run by women and 40% by youth—will have scaled climate smart solutions supporting diversification and intensification of maize systems through at least USD 5 million of new finance. |

Partners: Government research and extension departments; CG Centres, PABRA, and UN organizations; agribusinesses for machinery and seed; value chain actors in the crop and livestock value chains ([Annex 18](#)).

Human resources and capacity development: Team members: agronomists, economists, nutritionists, and specialists in value chains, foresight, agribusiness, Integrated Pest Management (IPM) and scaling. Capacity development foci: nutrition, health, food security.

5.2 Poverty reduction, livelihoods & jobs

Challenges and prioritization: Agriculture employs 65% of the ESA labor force and represents more than 30% of total regional GDP. Nevertheless, yields sit at 5-15% of regional potential and 25% of the global average.^k For example, maize yields range between 0.5-2.5 t/ha against a potential of 10-15 t/ha, around 25% of the global average, often as a result of a combination of poor access to quality inputs, finance, technical support, and markets, that creates a downward spiral of low incomes and few employment opportunities. Agribusiness helps address these challenges by creating access to farm inputs and services, linking farmers to markets, building value chain efficiencies, creating off-farm value chain and inter- and intra-regional trade job opportunities. However, agribusinesses struggle to establish as a result of poor access to funding, capacity-building, human resources, and expertise. UU will address these challenges by fostering the agribusiness ecosystem that serves farmers with a focus on women and youth.

Research questions: **WP3** will investigate ways to increase the pull effect from the private sector. **WP6** on scaling strategies to support those agribusinesses, and how investors and donors see value and benefit in having access to a pipeline of SMEs that have received CGIAR technical assistance in maize-based systems. **WP5** will identify the barriers to more gender and youth inclusive agribusiness ecosystems. **WP4** looks at how how farmers can benefit from incentive-based restoration.

| WP | Research/Activities | Outputs | Outcomes | 3-year targets and metrics |
|----|--|---|--|--|
| 3 | Providing technical and entrepreneurial assistance to agribusinesses | Partnerships established to co-design technical assistance programs and fund agribusinesses; capacity building through accelerators and financing. | UU facilitates agribusiness ecosystem building to support value chain development and efficiency that enables diversification, intensification, and ARM in maize-mixed systems through coordinating private and public partnerships that support SMEs. | 50 start-ups and SMEs are identified and supported. |
| 4 | Implementation of incentive-based restoration measures | Business model scenarios to inform policy and investments in incentive-based restoration measures and regenerative or conservation agriculture | Farmers benefit from implementing incentive-based restoration measures. | 20 000 hectares under improved sustainable management |
| 5 | Supporting women- and youth-led agribusinesses | Evidence of how agribusiness can bridge the gender gap in ESA; increased numbers of youth agri-entrepreneurs, particularly from marginalized groups | UU activities and partnerships increasingly enable and empower women and youth, iparticularly from marginalized groups, as agri-entrepreneurs supported by ESOs | 20 women-led and 20 youth-led SMEs are identified and supported. |

Partners: ESOs, investors, financial institutions, and governments ([Annex 18](#)).

Human resources and capacity development: Team: economists, specialists in value chains, business development, sustainable finance, governance, agribusiness and innovation systems.

5.3 Gender equality, youth & social inclusion

Challenges and prioritization: Women make a sizeable contribution to ESA’s agrarian economy. They are more economically active as farmers and entrepreneurs than men (AfDB, 2015). Recent efforts have aimed at equal access to land, water, credit, training, and other resources historically allocated only to men in the agribusiness ecosystem. However, ESA women continue to face numerous constraints as leaders and entrepreneurs that in turn limits the region’s economy. In addition to legal inequalities, women spend more time in economically unproductive labor like fetching water and wood. Women **work 50% longer hours than men** and yet continue to experience a massive agricultural labor pay gap. One third of Africa’s SMEs are owned by women. **UU’s focus agribusiness implies a focus on ESA’s women.** UU prioritizes greater agribusiness engagement, ownership, employment opportunities, and incomes for women and youth achieved through targeted technical, financial, and entrepreneurial capacity building and support, and by fostering informed and enabling public and private sectors and supportive civil society.

Research questions: WP5 asks about the type of barrier to more inclusive agribusiness ecosystems, and then looks at targeted technical, financial, and capacity strengthening to enhance agri-entrepreneurial capacity of marginalized women and youth. It looks at what interventions will reduce on- and off-farm labor and drudgery for women, how to go to scale and under which policy and regulatory frameworks, and what incentives can establish an enabling policy environment for sustaining inclusive transformative change.

| WP | Research/Activities | Outputs | Outcomes | 3-year targets and metrics |
|----|--|---|---|--|
| 5 | Addressing the gender gap in the ESA agrifood system through enhanced access to capacity building, assets, services, and innovations | GESI framework and approach that guides and standardizes all UU WP activities | More women and youth, disaggregated by geography, and other locally relevant diversity factors such as poverty, ethnicity, age, and disability, and other locally relevant diversity factors, are engaged in climate-smart SI practices and are empowered to lead ESA agribusinesses. | 40% of all beneficiaries in UU are women, and 40% are youth (not mutually exclusive) |

Partners: CGIAR partners including the Harnessing Equality for Resilience in the Agrifood System (HER+) project **External partners:** Southern Africa Solidaridad Southern Africa (SAF); Trust Africa's Reclaim Sustainability (RECLAIM Sustainability!); African Women in Agriculture Research and Development organization (AWARD) World Vegetable Centre; Regional Universities Forum for Capacity Building in Agriculture (RUFORUM); the gender unit of the African Development Bank’s Agriculture and Agro-Industry Development Department; The Technical Centre for Agricultural and Rural Cooperation; The World Bank’s AICCRA; the Agribusiness Market System Alliance initiative; feminist consultancies like African Women Development Fund, Includovate, relevant gender departments of Universities and National Agricultural Research and Extension Systems (NARES) in the focus countries and grassroots actors and institutions such as the Campaign for Female Education: Young Women's Grassroots Climate Action in Africa and Grassroots International ([Annex 18](#)). **Human resources and capacity development:** Team members: gender specialists, economists, anthropologists, sociologists, political scientists, and specialists in behavioral change, development studies, sustainable finance, and agribusiness.. Team foci: cross-disciplinary communication, teamwork, and collaborative research design skills (Section 9.3).

5.4 Climate adaptation and mitigation

Challenges and prioritization: ESA is a hotspot for climate change risk. With high confidence, the IPCC (2021) projects increases in droughts and floods across the region.^{ix} According to the Notre Dame Global Adaptation Initiative Index, on average, the UU countries rank in the 82nd percentile globally in terms of climate change food vulnerability. These risks cascade, increasing disease and pest outbreaks, affecting post-harvest storage and transport, jeopardizing businesses and supply chains, and undermining livelihoods. UU countries currently are not receiving necessary ARM services and climate-informed advisories at scale. To address these issues, UU prioritizes scaling climate-smart agriculture (CSA) practices, including stress-tolerant varieties, soil management, irrigation, and mechanization in WP1; bundled agro-advisory, ARM products service delivery in WP2; support for agribusinesses that deliver CSA inputs, agro-advisories, and ARM products in WP3; and the development of national monitoring frameworks to strengthen SDG implementation and climate adaptation targets with support for national, regional and continental groups in WP4.

Research questions: **WP1** asks what technology combinations are needed to mainstream resilient agricultural practices and how to deliver these climate resilient technology packages to farmers. What different technology combinations are needed. **WP2** asks how to best deliver bundled digital agro-advisories and ARM products to farmers and value chain actors. **WP3** asks how agribusinesses influence investors' decision-making and whether an investment is measuring key information about climate mitigation, adaptation, and productivity.

| WP | Research/Activities | Outputs | Outcomes | 3-year targets and metrics |
|----|---|---|---|--|
| 1 | Collaboration with relevant public- and private-sector partners to mainstream climate-smart SI practices, improve seed delivery, mechanization, advisory services, and irrigation | Climate-smart, productive, profitable, and environmentally sound SI practices, enabling the diversification of farming systems through the integration of bundles of technologies | Highly diversified farming systems. | 50,000 farmers using more climate-smart and sustainable bundles of technologies. |
| 2 | Design, testing, and delivery of digital climate advisory services and ARM products | Effective deployment of bundled digital agro-advisories and ARM products to farmers | Farmers and other value chain actors have access to bundled digital agro-advisory and ARM products. | 1,000,000 farmers and value chain actors accessing bundles of agro-advisories and ARM products |

Partners: Government research and extension departments, NGOs, UN organizations, agribusinesses for machinery and seed, value chain actors in crop and livestock value chains, Shamba Shape Up, iShamba agro-advisory platform ([Annex 18](#)).

Human resources and capacity development: Team: systems agronomists, cropping systems modelers, and specialists in climate change, irrigation, and policy and governance. Team foci: cross-disciplinary communication, teamwork, and collaborative research design skills (Section 9.3).

5.5 Environmental health and biodiversity

Challenges and prioritization: Declining soil health damages the ESA food system. One of the reasons is the lack of widespread use of reduced tillage systems without sufficient biomass input, and low crop diversification all contribute to declines in soil health. Data on the context-specific feasibility of scalable solutions for integrated and sustainable NRM and land management remain scarce. In addition, insufficient scalable and invest-worthy climate- and water-smart solutions exist for agricultural technology, water management, and catchment protection across geographies and sectors. Inadequate intersectoral and institutional coordination and the absence of a shared vision for water and food security through land use planning perpetuates a siloed management paradigm. To address these challenges, UU prioritizes collaborative management planning and integrated policy implementation at landscape scales, with an ongoing community of practice on water, food, and climate security and resilience in ESA, including data sharing protocols at the regional and country levels that can support effective transboundary information exchanges and decision-making. WP1 prioritizes scaling climate- and water-smart sustainable intensification solutions, while WP4 models the environmental impact and benefits of improved NRM at a landscape level, applies integrated water storage plans in ESA countries (with Nexus Gains).

Research questions: WP4 asks what are the integrated environmental trade-offs, benefits, and impacts of implementing climate- and water-smart SI practices. **WP4** also asks how regenerative or conservation agriculture and restoration can be incentivized, and policy coherence and institutional coordination be improved to enhance the implementation of sustainable water and land management practices.

| Components of Work Packages (WPs) | | | | |
|-----------------------------------|--|--|--|----------------------------|
| WP | Research/Activities | Outputs | Outcomes | 3-year targets and metrics |
| 1 | Collaborating with relevant public and private sector partners to mainstream sustainable intensification practices to improve soil health. | Climate-smart, productive, profitable, and environmentally sound sustainable intensification practices promoted with farmers | Farmers, and value chain actors in maize-mixed systems use climate-smart sustainable intensification and diversification practices | 50,000 farmers |
| 4 | Incentive-based regenerative/conservation agriculture or restoration | Baseline and impact assessment reports developed including business model scenarios | Area under improved management Investment enabled through four policies/strategies | 20,000 h |

Partners: Government research and extension departments; NGOs; UN organizations; RECs including the Southern African Development Community, Common Market for Eastern and Southern Africa, East African Community, and Intergovernmental Authority on Development; African Group of Negotiators Expert Support System (AGNES); ASARECA; CCARDESA; Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN); and AGRA ([Annex 18](#)). **Human resources and capacity development:** Team: systems agronomists, geographers, geohydrological and cropping systems modelers, agro-ecologists, economists, and specialists in public policy and environmental governance, geographic information system and remote sensing environmental impact assessment, multi-stakeholder partnerships and scaling. Team foci: cross-disciplinary communication, multi-stakeholder dialogue spaces and multi-partner platforms, and collaborative research design skills (Section 9.3).

6. Monitoring, evaluation, learning and impact assessment (MELIA)

6.1 Result framework

| CGIAR Impact Areas | | | | |
|--|---|--|---|--|
| Nutrition, health and food security | Poverty reduction, livelihoods and jobs | Gender equality, youth and social inclusion | Climate adaptation and mitigation | Environmental health and biodiversity |
| Collective global 2030 targets | | | | |
| The collective global 2030 targets are available centrally here to save space | | | | |
| Common impact indicators that your Initiative will contribute to and will be able to provide data towards (refer to page 5 of Guidance for MELIA for selection of appropriate indicators) | | | | |
| # people benefiting from relevant CGIAR innovations | # people benefiting from relevant CGIAR innovations | Policy and institutional change interventions and innovative public-private-grassroots partnerships result in improved awareness of and tangible outcomes of women's empowerment and youth inclusion in the agricultural sector # women benefiting from relevant CGIAR innovations # youth benefiting from relevant CGIAR innovations # new GESI-informed policy and institutional change processes, and partnerships | # \$ climate adaptation investments # people benefiting from climate-adapted innovations | #ha under improved management # km ³ consumptive water use |
| SDG Targets | | | | |
| 2.1, 2.2, 2.3, 2.4, 2.a, 2.c | 1.1, 1.4, 1.5, 1.a, 1.b. | 2.3, 5.a, 5.b, 5.c, 8.2, 8.5 | 1.5, 2.4, 13.1, 13.3, | 2.4, 6.4, 6.5, 6.6, 6.b, 15.1, 15.3 |

| Systems Transformation Action Area outcomes and indicators | |
|---|---|
| Outcomes | Indicators |
| ST 1 - Farmers use technologies or practices that contribute to improved livelihoods, enhance environmental health and biodiversity, are apt in a context of climate change, and sustain natural resources. | STi 1.1 - Number of farmers using climate smart practices disaggregated by gender |
| | STi 1.3- Measurable implications of adoptions such as production, profitability, input use, product quality and associated price, environmental and health damage avoided, livelihood, employment and so forth. |
| ST & RAFS & GI 1 Women and youth are empowered to be more active in decision making in food, land and water systems | STi 1.1 - Number of farmers using climate smart practices disaggregated by gender |
| Resilient AgriFood Systems Action Area outcomes and indicators | |
| RAFS 1 - Smallholder farmers use resource-efficient and climate-smart technologies and practices to enhance their livelihoods, environmental health and biodiversity | RAFSi 1.1 Number of resource-efficient and climate-smart technologies at stage IV (uptake by next user), disaggregated by type |

| | |
|--|---|
| RAFS 2 - Research and scaling organizations enhance their capabilities to develop and disseminate RAFS-related innovations | RAFSi 2.1 Number of organizations. |
| RAFS 3 - Public and private financial resources are invested to fund climate-smart business models. | RAFSi 3.1 Total amount (USD) invested in climate smart business models. |
| ST & RAFS 1 - Smallholder farmers implement new practices that mitigate risks associated with extreme climate change and environmental conditions and achieve more resilient livelihoods | STRAFSi 1.1 Number of smallholder farmers who have implemented new practices that mitigate climate change risks, disaggregated by gender and type of practice. |
| ST & RAFS 2 - National and local governments utilize enhanced capacity (skills, systems and culture) to assess and apply research evidence and data in policy making process | STRAFSi 2.1 Number of policies/ strategies/ laws/ regulations/ budgets/ investments/ curricula (and similar) at different scales that were modified in design or implementation, with evidence that the change was informed by CGIAR research |
| ST & RAFS & GI 1 Women and youth are empowered to be more active in decision making in food, land and water systems | STRAFSGli 1.2 Number of women, youth and people from marginalized groups who report input into productive decisions, ownership of assets, access to and decisions on credit, control over use of income, work balance, and visiting important locations |
| Genetic Innovation Action Area outcomes and indicators | |
| GI 7 - Farmers have access to and use climate-resilient, nutritious, market-demanded crop varieties. | GII 7.1 Number of farmers who grow climate-smart crop varieties, disaggregated by gender. |
| | GII 7.2 Number of farmers who grow crop varieties with increased nutritional content, disaggregated by gender. |
| | GII 7.3 Area weighted average age of varieties in Farmers' fields |
| ST & RAFS & GI 1 Women and youth are empowered to be more active in decision making in food, land and water systems | STRAFSGli 1.3 Number of farmers who grow market intelligence-informed new crop varieties, disaggregated by gender and age. |
| | STRAFSGli 1.4 Percentage of female headed farm households that use an improved crop variety. |

| Initiative and Work package outcomes, outputs and indicators | | | | | | | | | | | |
|--|--|--|---------------------|--------------------------|-----------------------|--|--|---------------------------------------|------------------------------|-------------------------------|-------------|
| Result type (outcome or output) | Result | Indicator | Unit of measurement | Geographic scope | Data source | Data collection method | Frequency of data collection | Baseline value n/a = Not available | Baseline year (outcome only) | Target value | Target year |
| End of Initiative Outcome 1 | Farmers, value chain actors, and consumers (40% women; 40% youth) in maize-mixed systems are using climate-smart intensification and diversification practices with improved water and | Number of farmers/value chain actors/consumers using technology disaggregated by technology type, sex, age, crop and geography | Individual (person) | National (Ken, Zam, Zim) | Primary and secondary | Primary (surveys, partner and records) Secondary (desktop literature) | Baseline, mid-point (18-months), endline (2024) | n/a | n/a | 50,000 (40% women, 40% youth) | 2024 |

| | | | | | | | | | | | | |
|--|--|---|---------------------|------------------------------------|-----------------------|--|-------------------------------------|-----|-----|---------------------------------------|------|--|
| | land management practices | | | | | | | | | | | |
| End of Initiative Outcome 2 | Farmers and other value chain actors (40% women, 40% youth) are accessing bundled digital agro-advisory and ARM products and services that support their response to climate risks and manage land and water systems more sustainable for climate resilience | Number of farmers and other VCAs receiving bundled agro-advisory and ARM and services that have been assessed to increase productivity, disaggregated by sex, and geography | Individual (person) | National (Ethiopia, Kenya, Zambia) | Primary and secondary | Primary (Farmer level and other VCA level surveys) Secondary (reports) | Baseline, mid-point, endline (2024) | n/a | n/a | 750,000 (40% women, 40% youth) | 2024 | |
| End of Initiative Outcome 3 | Start-ups and SMEs—40% run by women; 40% by youths—will have scaled climate smart solutions supporting diversification and intensification of maize mixed systems through at least USD 5 million of new finance. | Number of start-ups and SMEs incubated or accelerated, disaggregated by sex and age | Number | ESA (regional) | Primary | UU database, KII, FGDs, partner records, surveys | Annual | n/a | n/a | 50 (40% women-owned, 40% youth-owned) | 2024 | |
| | | Amount of new finance unlocked or invested (through debt equity or grants) disaggregated by geography, SME type, and value chain | Currency | Regional (ESA) | Primary | UU database, KII, FGDs, partner records, surveys | Annual | n/a | n/a | 5 million USD | 2024 | |
| End of Initiative Outcome 4 | 20 000 hectares under improved sustainable and improved management from USD 100 million of investments enabled by 4 strategies/policies and ex-ante analysis which supports collaborative governance and management of multifunctional landscapes. | Area under improved management of SI/diversification practices disaggregated by geography | Area (Hectare) | Regional (ESA) | Primary | Surveys, remote sensing maps, partner records | Baseline, mid-point, endline (2024) | n/a | n/a | 20,000 | 2024 | |
| | | Amount of investments informed, of inclusive and sustainable climate and water-smart SI practices implemented at scale | Currency | Regional (ESA) | Primary | Surveys, partner records | Baseline, mid-point, endline (2024) | n/a | n/a | 100 million | 2024 | |
| WP 1: Diversify and sustainably intensify | | | | | | | | | | | | |
| Intermediary Outcome ASSESS 1.1 | UU partners have an improved understanding about applying successful climate-smart sustainable intensification | Number of partners (demand, innovation or scaling partners) using technology | Number | National (Ken, Zam, Zim) | Primary | Surveys | Baseline, mid-point, endline (2024) | n/a | n/a | 30 | 2024 | |

| | | | | | | | | | | | |
|--------------------------------|--|--|----------------|-------------------------------|-----------------------|--|-------------------------------------|-----|-----|--------|------|
| | technologies and packages | | | | | | | | | | |
| Output 1.1.1 | Inventory and needs assessment of climate-smart sustainable intensification practices and mechanization strategies for more nutritious diets, suitability maps, locations and prioritized technologies to be used in different countries, targeted to varying contexts | Number of information products (Maps, decision guides, farm typologies) i.e. suitability maps, locations, and prioritized technologies | Number | National (Ken, Mal, Zam, Zim) | Secondary | Publ. products | End of Initiative 2024 | n/a | n/a | 10 | 2024 |
| Output 1.1.2 | Overview of the agri-business ecosystem and its relevant players including an assessment of consumer demand, extension and delivery systems | Number of information products (including peer reviewed papers and maps) | Number | National (Ken, Zam, Zim) | Primary and secondary | Primary (Surveys), Secondary (desktop literature and datasets) | Annual | n/a | n/a | 1 | 2022 |
| Intermediary Outcome APPLY 1.2 | Smallholder farmers in target communities, are regularly using climate smart sustainable intensification, mechanization, irrigation, and animal husbandry practices in their day-to-day farming activities. | Number of ha under production with SI, mech. Irrigation or animal husbandry practices | Area (hectare) | National (Ken, Zam, Zim) | Primary | Surveys | Baseline, mid-point, endline (2024) | n/a | n/a | 20,000 | 2024 |
| | | Number of tech bundles/practices taken up by other One CGIAR initiatives | Number | | | | | | | 10 | |
| Output 1.2.1 | Climate-smart, productive, profitable and environmentally sound sustainable intensification practices, enabling the diversification of farming systems through the integration of bundles of technologies (seed, | Number of tech bundles (SI practices) in various stages of delivery (tested, applied, scaled) | Number | National (Ken, Mal, Zam, Zim) | Primary | Demo/ trials, surveys | Annual | n/a | n/a | 30 | 2024 |

| | | | | | | | | | | | |
|--------------------------------|--|--|---------------------|-------------------------------|-----------------------|---|-------------------------------------|-----|-----|--------|------|
| | livestock and management) | | | | | | | | | | |
| Output 1.2.2 | Appropriate scale machinery and irrigation systems, implemented in successful Service Provider Models | Number of service providers providing machinery services in target communities | Number | National (Zam, Zim) | Primary | Surveys | End of Initiative 2024 | n/a | n/a | 36 | 2024 |
| Output 1.2.3 | Improved and more sustainable crop/livestock systems that have a reduced environmental footprint | Number of rangeland management plans developed | Number | National (Ken, Zam, Zim) | Primary | Surveys | End of Initiative 2024 | n/a | n/a | 3 | 2024 |
| | | Number of tested crops in various stages of delivery | Number | National (Ken, Zam, Zim) | Primary | Surveys | End of Initiative 2024 | n/a | n/a | 3 | 2024 |
| Intermediary Outcome APPLY 1.3 | Nutrient-dense crops and diversification strategies are used by farmers and the general population towards more healthy diets | Number of ha under production with nutrient-dense crops | Area (hectare) | National (Ken, Zam, Zim) | Primary | Surveys | Baseline, mid-point, endline (2024) | n/a | n/a | 20,000 | 2024 |
| | | Number of farmers using techs | Individual (person) | National (Ken, Zam, Zim) | Primary | Surveys | Baseline, mid-point, endline (2024) | n/a | n/a | 50,000 | 2024 |
| Output 1.3.1 | Evidenced-based information on planting materials, crop mixes, animal derived food and biofortified crops for more nutritious diets | Number of information products developed | Number | National (Ken, Mal, Zam, Zim) | Primary and secondary | Primary (Surveys), secondary (desktop literature) | End of Initiative 2024 | n/a | n/a | 10 | 2024 |
| Intermediary Outcome SCALE 1.4 | Scaling partners have increased their knowledge and capacity and are using suitable extension and delivery models for diversifying & intensifying agrifood systems | Number of scaling partner organizations with increased capacity on innovation products | Number | National (Ken, Mal, Zam, Zim) | Primary | Surveys | End of Initiative 2024 | n/a | n/a | 30 | 2024 |

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|-------------------------------------|--|--|--------|--|-----------------------|---|----------------------------------|-----|-----|-------|------|
| Output 1.4.1 | Increased knowledge and capacity development of relevant stakeholders in the agribusiness ecosystem on SI technologies and practices, machinery and irrigation and nutrition technologies and delivery systems | Number of farmers and other VCAs trained disaggregated by sex, training type and geography | Number | National (Ken, Mal, Zam, Zim) | Primary and secondary | Primary (surveys), secondary (training reports) | Annual | n/a | n/a | 2,000 | 2024 |
| Output 1.4.2 | Functional delivery and advisory systems including governments, policies and other regulatory | Number of delivery models for technology delivery | Number | National (Ken, Mal, Zam, Zim) | Primary and secondary | Primary (surveys), secondary (training reports) | Annual | n/a | n/a | 5 | 2024 |
| WP 2: De-risk and digitalize | | | | | | | | | | | |
| Intermediary Outcome ASSESS 2.1 | UU partners have increased understanding and capacity to assess and provide technical support to bundles of digital agro-advisory systems and risk management products key value chain actors using on specific climate risks on farms and in market systems | Number of UU partners with increased capacity | Number | National (Ethiopia, Kenya, Zambia) | Primary | Partner records, monitoring data | Annual | n/a | n/a | 5 | 2024 |
| Output 2.1.1 | Partnerships to develop and deploy agro-advisory information and ARM service are developed with businesses, MFIs, cooperatives, start-ups, SMEs for experimentation and up take. | Number of partners that are deploying agro-advisory information and ARM service disaggregated by geography | Number | National (Ethiopia, Kenya, Malawi, Zambia) | Primary | Farmer/VCA level surveys, partner records | Baseline, annual, endline (2024) | n/a | n/a | 5 | 2024 |
| Output 2.1.2 | Prioritized scaling-ready digital agro-advisories and ARM bundled products and services assessed for scaling readiness and for productivity, resilience, and/or profitability, to be contextualized and co- | Number of prioritized scaling-ready digital agro-advisories and ARM bundles | Number | National (Ethiopia, Kenya, Zambia) | Primary | Regular monitoring data, partner records | Annual | n/a | n/a | 8 | 2024 |

| | | | | | | | | | | | |
|--------------------------------|--|--|---------------------|--|-------------------------|--|-------------------------------------|-----|-----|---------|------|
| | designed with farmers and scaling partners. | | | | | | | | | | |
| Intermediary Outcome APPLY 2.2 | UU Partners have tailored and tested advisories and digital risk management solutions commercially viable for specific farmer contexts | Number of tailored and tested advisories and digital risk management solutions | Number | National (Ethiopia, Kenya, Malawi, Uganda, Zambia) | Primary | Regular monitoring data, partner records | Baseline, mid-point, endline (2024) | n/a | n/a | 5 | 2024 |
| Output 2.2.1 | Agricultural Risk Profiling system that identifies key agricultural and value chain risks, and identifies technologies, practices and risk management solutions linked to farmer specific profiles for agroecological and socioeconomic contexts (with ClimBeR; LCSR; DX1) | Presence of Risk Profiling System | Yes/No | Regional (ESA) | Primary | Regular monitoring data, partner records | Annual | n/a | n/a | 1 | 2024 |
| Output 2.2.2 | Bundled digital agro-advisories and ARM products and services co-design to contextualize and tested with farmers and other value chain actors (with ClimBeR; Rethinking Markets) | Number of bundles of digital agro-advisories and ARM products and services designed and tested | Number | National (Ethiopia, Kenya, Malawi, Uganda, Zambia) | Primary | Regular monitoring data, partner records | Annual | n/a | n/a | 8 | 2024 |
| Intermediary Outcome SCALE 2.3 | Increased access to bundled digital agro-advisories and ARM products and services, by farmers and other value chain actors | Number of people (farmers and other VCAs) using bundled digital agro-advisories and ARM products disaggregated by type and geography | Individual (person) | National (Ethiopia, Kenya, Malawi, Uganda, Zambia) | Primary and secondary | Primary (Farmer/VCA level surveys) Secondary (Desktop literature, reports) | Baseline, annual, endline (2024) | n/a | n/a | 750,000 | 2024 |
| Output 2.3.1 | Mobile delivery mechanisms, TV, and other communication channels for deploying to farmers bundled digital agro-advisories and risk | Number of bundled digital agro-advisories and ARM products deployed, disaggregated by type and geography | Number | National (Ethiopia, Kenya, Malawi, Uganda, Zambia) | Primary and secondary (| Regular monitoring data, partner records | Annual | n/a | n/a | 5 | 2024 |

| | | | | | | | | | | | |
|-------------------------------------|--|--|--------|--|-----------------------|--|--------------------------------|-----|------|----|------|
| | management products and services | | | | | | | | | | |
| WP 3: Support and accelerate | | | | | | | | | | | |
| Intermediary outcome ASSESS 3.1. | UU scaling hub partners and CGIAR have an improved understanding of (i) value chain development, demand actors (including consumers), (ii) opportunities to enhance diversification, intensification and ARM activities in the ecosystem; and (iii) partners to enhance collaborations that support incubating and accelerating SMEs | Number of partners with increased capacity | Number | Regional (ESA) | Primary and secondary | Primary (UU database, partner records, KII, and surveys), Secondary (desktop literature) | Annual | n/a | n/a | 10 | 2024 |
| Output 3.1.1 | Strategic reports that provide information on: (i) value chain mapping to identify market gaps/failures; (ii) landscaping the agribusiness ecosystem (focus on SMEs) for enabling value chain efficiency, value addition and addressing gaps/failures; and (iii) identifying business models and partners that are best aligned to meet identified needs in the ecosystem; (iv) and road map for implementation with partners. | Number of reports that provide information on implementation | Number | Regional (ESA) | Secondary and primary | Primary (interviews, workshops, surveys), secondary (desktop literature) | Beginning of Initiative (2022) | n/a | n/a | 3 | 2022 |
| Intermediary Outcome APPLY 3.2 | UU facilitates agribusiness ecosystem building to support value chain development and efficiency that enables diversification, intensification, and ARM in maize-mixed systems through coordinating | Number of partners that support start-ups and SMEs. | Number | National (Kenya, Zambia, South Africa, Zimbabwe, Malawi, Uganda, Rwanda, | Primary | Interviews, workshops and surveys | Annual | n/a | 2024 | 10 | 2022 |

| | | | | | | | | | | | |
|--|--|--|--------|--|--|--|----------------------------------|-----|-----|---------------------------------------|------|
| | private and public partnerships that support SMEs. | | | Tanzania, Ethiopia) | | | | | | | |
| Output 3.2.1 | Partnerships established with ESOs to co-design technical assistance programs, facilitate acceleration and link to financing for SMEs. | Number of partnerships mobilized for technical assistance implementation disaggregated by geography. | Number | National (Kenya, Zambia, South Africa, Zimbabwe, Malawi, Uganda, Rwanda, Tanzania, Ethiopia) | Primary | Interviews, workshops and surveys | Annual | n/a | n/a | 7 | 2022 |
| Intermediary Outcome SCALE 3.3 | Increased development of value chains, contribution to the growth of local economies and creation of jobs by UU supported start-ups and SMEs. | Number of UU supported start-ups and SMEs reporting increased revenue disaggregated by SME type, sex (women-owned), age (youth-owned) and geography. | Number | ESA | Primary and secondary | Primary (surveys), Secondary (desktop literature, SME level survey report) | Baseline, annual, endline (2024) | n/a | n/a | 30 | 2024 |
| | | Number of new employees across UU supported start-ups and SMEs disaggregated by SME type, sex (women-owned), age (youth-owned) and geography. | Number | ESA | Primary and secondary | Primary (surveys), Secondary (desktop literature, SME level survey report) | Baseline, annual, endline (2024) | n/a | n/a | 30 | 2024 |
| Output 3.3.1 | Start-ups and SMEs enabling value chain efficiency and addition are identified and supported by UU scaling hub partners through technical assistance and funding, leading to an increase in employment opportunities in SMEs | Number of SMEs that have received technical assistance and funding disaggregated by type, sex (women-owned), age (youth-owned) and geography | Number | National (Kenya, Zambia, South Africa, Zimbabwe, Malawi, Uganda, Rwanda, Tanzania, Ethiopia) | Primary | Interviews, workshops and surveys | Annual | n/a | n/a | 50 (40% women-owned; 40% youth-owned) | 2024 |
| Work Package 4: Conserve and enable | | | | | | | | | | | |
| Intermediary Outcome ASSESS 4.1 | Improved understanding of UU partners to support integrated and sustainable use and | Number of partners using assessment and targeted information products to inform | Number | National (Zambia, Kenya, Ethiopia, | Primary (interviews, workshops, surveys) | Interviews, workshops and surveys | Annual | n/a | n/a | 25 | 2024 |

| | | | | | | | | | | | |
|--------------------------------|---|--|--------|---|---|--|--------|-----|-----|----|------|
| | management of natural resources for diversification and SI | decision-making, disaggregated by geography | | Zimbabwe) and Regional (ESA) | | | | | | | |
| Output 4.1.1 | Integrated ESG Assessment Repository developed | Number of assessments conducted | Number | Regional (ESA) | Primary (UU data base, partner records, KII, and surveys) | UU database, KII, FGDs, partner records, surveys | Annual | n/a | n/a | 6 | 2024 |
| Output 4.1.2 | Baseline and impact assessment reports developed including business model scenarios used to inform policy and investments in incentive-based restoration measures and regenerative/conservation agriculture | Number of information products developed and disseminated | Number | Regional (ESA) | Primary (UU data base, partner records, KII, and surveys) | UU database, KII, FGDs, partner records, surveys | Annual | n/a | n/a | 3 | 2024 |
| Intermediary Outcome APPLY 4.2 | Improved policy coherence, sectoral/institutional coordination, and capacities strengthened to enhance technology adoption and regulate the emergence/operations markets | Number of inter-sectoral partnerships enabled | Number | Regional (ESA) | Primary (interviews, workshops, surveys) | Interviews, workshops and surveys | Annual | n/a | n/a | 40 | 2024 |
| Output 4.2.1 | Monitoring frameworks to support implementation, and provide support and backstop for national, regional and continental groups involved in climate negotiations developed and implemented by demand partners | Number of monitoring frameworks developed and implemented by demand partners | Number | National (Zambia, Kenya, Ethiopia, Zimbabwe) and Regional (ESA) | Primary (interviews, workshops, surveys) | Interviews, workshops and surveys | Annual | n/a | n/a | 2 | 2024 |
| Output 4.2.2 | Targeted training material developed for UU partners informing technology adoption on SI/diversification and agro-advisories | Number of information products developed and disseminated | Number | Regional (ESA) | Primary (UU data base, partner records, KII, and surveys) | UU database, KII, FGDs, partner records, surveys | Annual | n/a | n/a | 25 | 2024 |

| | | | | | | | | | | | |
|--------------------------------|--|---|---------------------|----------------|--|-----------------------------------|--------|-----|-----|-------|------|
| Output 4.2.3 | Researchers, policy makers and local practitioners demonstrate strengthened capacity through development of and participation in One CGIAR ESA Learning Platform on SI/diversification and NRM | Number of people trained and engaged through One CGIAR ESA Learning Platform disaggregated by geography, sex, age | Individual (person) | Regional (ESA) | Primary (interviews, workshops, surveys) | Interviews, workshops and surveys | Annual | n/a | n/a | 1,500 | 2024 |
| Intermediary Outcome SCALE 4.3 | Environmental and governance elements in SI/diversification practices scaled up into policy and investment priorities at appropriate scales | Number of policies supported/ informed | Number | Regional (ESA) | Primary (interviews, workshops, surveys) | Interviews, workshops and surveys | Annual | n/a | n/a | 4 | 2024 |
| Output 4.3.1 | "Big data" platform developed and used by UU partners | Presence/absence of big data platforms developed and used by partners | Yes/No | Regional (ESA) | Primary (interviews, workshops, surveys) | Interviews, workshops and surveys | Annual | n/a | n/a | 1 | 2024 |
| Output 4.3.2 | Pan-African CGIAR policy hub established that facilitates SI and diversification data sharing and information | Presence/absence of policy hub | Yes/No | Regional (ESA) | Primary (interviews, workshops, surveys) | Interviews, workshops and surveys | Annual | n/a | n/a | 1 | 2024 |
| Output 4.3.3 | NRM scaling readiness and adoption framework developed for Phase 1 countries, including related scaling assessments for scaling innovations from other One CGIAR initiatives | Presence/absence of NRM readiness and adoption framework developed and used by country partners | Yes/No | Regional (ESA) | Primary (interviews, workshops, surveys) | Interviews, workshops and surveys | Annual | n/a | n/a | 1 | 2024 |
| | Number of One CGIAR Initiative innovations scaled through UU with ESG elements as a principal focus, to support SI and diversification and ARM product adoption | Number of One CGIAR initiatives | Number | Regional (ESA) | Primary (interviews, workshops, surveys) | Interviews, workshops and surveys | Annual | n/a | n/a | 3 | 2024 |

Cross-cutting WP 5: Empower and engage

| | | | | | | | | | | | |
|--------------|---|--------------------------------------|--------|--|------------------------------|-------------------------|--------|-----|-----|---|------|
| Output 5.1.1 | UU and strategic gender actors/partners in ESA collaboratively produce and share GESI | Number of GESI assessments conducted | Number | National (Zambia Zimb. Malawi Tanz. Kenya) | Primary (UU database/record) | Regular monitoring data | Annual | n/a | n/a | 3 | 2024 |
|--------------|---|--------------------------------------|--------|--|------------------------------|-------------------------|--------|-----|-----|---|------|

| | | | | | | | | | | | | |
|---------------|--|---|---------------------|---|--|---|----------------|-----|-----|-----|------|--|
| | assessments at multiple national and regional forums | | | | | | | | | | | |
| Output 5.1.2 | A GESI framework and approach that guides and standardizes all UU WP activities is developed and deployed | Presence/absence of GESI framework | Yes/No | Regional (ESA) | Primary (UU database/record) | Regular monitoring data | Endline (2024) | n/a | n/a | 1 | 2022 | |
| Output 5.2.1 | UU partners and stakeholders are trained on and equipped with GESI skills relevant across the agri-enterprise ecosystems | Number of UU partners trained to deliver GESI compliant services, disaggregated by geography | Number | National (Zambia, Malawi, Tanz., Kenya) | Primary and secondary (partner records) | Regular monitoring data | Annual | n/a | n/a | 10 | 2022 | |
| Output 5.2.2. | Youth and women agri-entrepreneurs are trained as peers/ mentors for outreach to a wider target group | Number of agri-entrepreneurs identified and trained as mentors by geography, sex and age | Individual (person) | National (Zambia, Malawi, Tanz., Kenya) | Primary (surveys, partner records), secondary (media reports, most significant change stories) | Surveys, KII, media articles, desktop literature | Annual | n/a | n/a | 100 | 2024 | |
| | | Number of women and youth agri-entrepreneur mentors engaged in, and informing key capacity strengthening activities by geography, sex and age | Individual (person) | | | | | n/a | n/a | 25 | 2024 | |
| Output 5.2.3. | Women and youths trained in agri-preneurship skills | Number of people trained disaggregated by sex, age and geography | Individual (person) | National (Zambia, Malawi, Tanz., Kenya) | Partner Training reports | Regular monitoring data | Annual | n/a | n/a | 200 | 2024 | |
| Output 5.3.1 | Agri-business ecosystem policies, investments, and interventions in ESA UU target countries are GESI-informed | Number of relevant policies informed in which GESI has been integrated disaggregated by geography, sex and age | Number | National (Zambia, Malawi, Tanz., Kenya, Mozambique) | Primary (UU database, partner records, KII, and survey), Secondary (desktop literature) | UU database, VCA level KII, FGDs, partner records, review of secondary data | Endline (2024) | n/a | n/a | 2 | 2024 | |

Work Package 6: Scale and coordinate

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|--------------|---|---------------------------------|--------|--|---------|---------------------------------------|----------------|-----|-----|---|------|
| Output 6.1.1 | Scaling assessments and reviews conducted | Number of assessments conducted | Number | National (Ethiopia, Kenya, Zimbabwe, Zambia) | Primary | Regular monitoring data, surveys | Annual | n/a | n/a | 4 | 2024 |
| Output 6.2.1 | ESA Scaling Hub established | Absence/presence of scaling hub | Yes/No | Regional (ESA) | Primary | UU database, regular monitoring data, | Endline (2024) | n/a | n/a | 1 | 2024 |

| | | | | | | | | | | | |
|--|---|--|--------|--|-----------|---|----------------|-----|-----|----|------|
| | | | | | | surveys, KII, workshops | | | | | |
| Output 6.2.2 | CGIAR researchers and partners capacity strengthened for more successful innovation and scaling in the ESA region | Number of people attending scaling training disaggregated by country, age, sex | Number | National (Ken, Zam, Zim, Eth, Mal, Moz, Uga, Tanz) | Secondary | Training material, desktop literature, survey reports | Annual | n/a | n/a | 20 | 2024 |
| Output 6.2.3 | One CGIAR engagement and coordination plan for each ESA focus country in which One CGIAR initiatives are implemented. | Number of coordination plans | Number | National (Ethiopia, Ken, Zim, Zam, Mal, Moz, Ug, Rwa, Tanz) | Primary | Surveys | Annual | n/a | n/a | 4 | 2024 |
| Output 6.2.4 | Strategies for gender-responsive scaling of innovations, and for improving enabling conditions that can benefit the successful scaling of CGIAR innovations developed | Number of gender-responsive scaling strategies | Number | National (Ethiopia, Ken, Zim, Zam, Mal, Moz, Ug, Rwa, Tanz) | Primary | Surveys | Annual | n/a | n/a | 2 | 2024 |
| Output 6.3.1 | Mechanisms and arrangements developed that ensure aligned stakeholder and partner demand with CGIAR investments in science, innovation and scaling | Number of stakeholder alignment mechanisms | Number | National (Ethiopia, Kenya, Uganda, Rwanda Tanzania, Malawi, Zambia, Zimbabwe, Mozambique Eswatini, South Africa) | Primary | Survey | Annual | n/a | n/a | 10 | 2024 |
| Output 6.3.2 | Country-specific scaling strategies co-developed in partnership with UU partners | Number of country-specific scaling strategies | Number | Ethiopia, Kenya, Zimbabwe, Zambia | Primary | Surveys | Endline (2024) | n/a | n/a | 4 | 2024 |
| Output 6.3.3 | Partnerships with the public and private sector strengthened | Number of partnerships strengthened | Number | Ethiopia, Kenya, Zimbabwe, Zambia | Primary | Surveys | Endline (2024) | n/a | n/a | 10 | 2024 |
| Innovation Packages and Scaling Readiness | | | | | | | | | | | |
| Output 6.3.4 | Innovation Profile and Scaling Ambition Report (Light Track) | Number of selected Core Innovations for which scaling ambition, vision of success and roadmap have been co-created, agreed-upon and documented | Number | National (Ethiopia, Kenya, Uganda, Rwanda Tanzania, Malawi, Zambia, Zimbabwe, Mozambique Eswatini, South Africa) | Primary | Scaling studies | Annual | n/a | n/a | 10 | 2023 |

| | | | | | | | | | | | |
|--------------|---|---|------------|--|---------|-----------------|-------------------|-----|-----|---------|------|
| Output 6.3.5 | Evidence-based Scaling Strategies (Standard Track) | Number of Initiative Innovation Packages that have undergone evidence-based and quality controlled/ validated Scaling Readiness assessments informing innovation and scaling strategies | Number | National (Ethiopia, Kenya, Uganda, Rwanda, Tanzania, Malawi, Zambia, Zimbabwe, Mozambique, Eswatini, South Africa) | Primary | Scaling studies | Annual | n/a | n/a | 10 | 2024 |
| Output 6.3.6 | Innovation Management Portfolio System (Advanced Track) | Percentage of Initiative innovation portfolio that is monitored and managed through a structured innovation portfolio management system that uses scaling readiness metrics | Percentage | National (Ethiopia, Kenya, Uganda, Rwanda, Tanzania, Malawi, Zambia, Zimbabwe, Mozambique, Eswatini, South Africa) | Primary | Scaling studies | Annual, from 2024 | n/a | n/a | 76-100% | 2024 |

6.2 MELIA plan

a. Narrative for MEL plans

The overall objective of the UU MEL will be to assess and periodically share the implementation progress and evolution of outcome-level results with internal management, One CGIAR, donors, and partners, ensuring accurate estimation of UU and other One-CGIAR contributions to results. The UU ToC, results framework, output and outcome indicators, and projected benefits will form the basis for the UU MEL system. The MEL system will build on the CCAFS/AICCRA MEL system experience and aligned to the new One CGIAR PRMS. To ensure that the UU WPs are contributing to the wider regional and global research, development, and upscaling, the UU MEL system – indicators, metrics, measurement methods, and tools – will be aligned to the data and information needs of One CGIAR, relevant donors, and regional, and global level bodies such as RECs, and the African Union (AU).

Depending on One CGIAR structure and staffing developments, the UU project management team may include a UU MEL team consisting of a MEL lead who will work directly with WP-level MEL officers, who in turn collaborate with partner-level MEL experts; a UU-wide ToC and WP-specific ToCs; robust UU MEL guidelines that include indicator definition sheets to harmonize methods across UU MEL partners; and a plan to enhance MEL capacity across the WP and public, private, and civil-society partners, including national governments. Key MEL partners will include the World Bank Living Standards Measurement Study - Integrated Surveys on Agriculture (LSMS-ISA) team, AU-Biennial review group, AKADEMIA-63, SPIA, and REC MEL teams. The crucial UU MEL processes will consist of (see MELIA Table for examples: (1) baseline studies for the majority of outcome-level indicators; (2) development and operationalization of an online database of key units of measures to show progress of the Initiative's activities and results; (3) annual monitoring surveys to test key assumptions of the UU-wide and WP-specific ToCs and to effect evidence-based course correction; (4) implementation research to test various methods and tools and enable evidence-based refinement of implementation strategies and management decisions; and (5) integration of indicators and metrics in existing data collection systems like annual national agriculture surveys, LSMS-ISA, Demographic and Health Surveys, and others, building on similar work in Rwanda, Uganda, Zambia, and Zimbabwe. UU MELIA will employ a range of innovations, tools, and techniques – including digital tools, remote sensing, and monitoring and evaluation modelling – to collect data and to estimate outcome- and impact-level indicator values.

b. Narrative for Impact Assessment research plans

The overall aim of the UU IA will be to assess the contribution of UU to overall outcome- and impact-level results for One CGIAR, the SDGs, the AU, and others, to test key assumptions made along the ToC, and to answer specific research questions. The main IA activities will include baseline studies for selected outcome indicators and ex-ante impact assessments. While baseline and ex-ante studies will be carried out in year 1, other socioeconomic studies will take place in years 2 and 3 to assess technology adoption, dietary diversity, yields, incomes, employment, and environmental impact, among other factors. Related surveys will collect primary data to assess actual local impact and to generate results. The results will be key inputs for modelling work to estimate impact-level contributions of UU to higher-level impacts. For learning questions, the MEL team will select from the research questions above.

6.3 Planned MELIA studies and activities (not exhaustive)

| Type of MELIA study or activity | Result or indicator title to which the MELIA study or activity will contribute | Anticipated year of completion | Co-delivery of planned MELIA study with other Initiatives | How the MELIA study or activity will inform management decisions and contribute to internal learning |
|--|--|--|--|---|
| Partner GESI understanding and capacity assessment | UU GESI partner level of understanding indicators | 2022 (1 study) | TBC | The activity will deepen understanding of the status quo before intervention and help refine UU targets. |
| Scaling Readiness Assessment Study | Number of Initiative Innovation Packages that have undergone evidence-based and quality-controlled or validated Scaling Readiness assessments informing innovation and scaling strategies | 2021 (1 study) 2023 (5 studies) 2024 (4 studies) | Innovation Package linkages with Initiatives UU, AgriLAC resiliente, Rethinking Food Markets and Value Chains for Inclusion and Sustainability, and LCSR | The study will inform the design, implementation, and monitoring of an innovation and scaling strategy, and scaling readiness metrics can feed an optional Initiative innovation portfolio management system. |
| Conduct assessments of the potential for adaptive and inclusive scaling of bundled CSA by agri-SMEs. | Number of Initiative Innovation Packages that have undergone evidence-based and quality-controlled or validated Scaling Readiness assessments informing innovation and scaling strategies. | 2022 (4 studies) | Innovation Package linkages with Initiatives UU, AgriLAC resiliente, Rethinking Food Markets and Value Chains for Inclusion and Sustainability, and LCSR | The study will inform the design, implementation, and monitoring of an innovation and scaling strategy, and scaling readiness metrics can feed an optional Initiative innovation portfolio management system. |
| Design, Plan, and Implement Country-Level Annual Monitoring Surveys | All UU outcome level-results and indicators | 2022-2024 (3 studies—annual) | TBC | The study will deepen understanding of the status quo before intervention and help refine UU targets. |
| Assessing the impact of the overall application and deployment of the GESI framework at the farmer, SME, and start-up levels in UU-supported countries | Improved understanding and capacity of UU scaling hub partners to support sustainable, integrated water, energy, and land availability, use, access, and management, and to adapt to related changes at multiple scales because of climate and water-smart SI practices. | 2024 (1 study) | TBC | The assessment will generate information that will help demonstrate the extent to which UU-promoted technologies and practices were accepted and scaled by farmers, VCAs, and institutions. This data will feed into ONE-CGIAR and other results. |
| Causal impact assessment of specific diversification and intensification interventions on the diversification of diets | Farmers, value chain actors, and consumers in maize-mixed systems have begun using climate-smart SI and diversification practices, ultimately resulting in higher productivity, profitability, and improved nutrition. | 2024 (1 study) | TBC | This assessment will generate information that will help demonstrate the contribution of UU activities and initiatives to overall household- and population-level impacts. This data will feed into ONE-CGIAR results and will also be relevant for the SDGs, the AU, and other organizations and objectives. |
| Baseline and impact assessment report developed including business model scenarios used to inform policy and investments in incentive-based restoration measures and regenerative/conservation agriculture | Number of information products developed and disseminated; | 2024 (1 study) | TBC | This impact assessment will inform NRM scaling recommendations to the WP6 Scaling Hub based on area under improved management (h). |

7. Management plan and risk assessment

7.1 Management plan

As its name depicts, UU adopts the principle of **interconnectedness** of people with the environment and each other in multiple complex (agrifood, agribusiness, water/food/land) systems. UU is based on three underlying principles of i) connectedness through partnerships; ii) an ethos of adaptive co-learning; and iii) delivery through collective leadership.

1. **Connect:** UU is grounded on the premise that transformative change emerges from relationships among/between actors and institutions not the actions of any single actor. The Initiative seeks to make **impact at different scales, forging collaboration** with existing initiatives, with public, private and grassroots partners and adding value through **scientific innovation** that supports the agribusiness ecosystem in the ESA region.
2. **Learn:** The UU management plan adopts a **structured yet relational and iterative process** that **systematically tests ToC assumptions** to learn and adapt with partners. It will integrate aspects of the Initiative program design, management and monitoring. The Initiative and WP TOCs as well as the MELIA plan, scaling readiness and risk management plan will be revised - in conjunction with partners and stakeholders - at the end of the project inception (6 months). Thereafter they will be revisited every 6 months to evaluate progress against milestones and targets and to validate or revise assumptions made in the specific context of each WP. The SIAF Framework (WP1) will provide disaggregated (e.g. by gender and age) data for evaluation of appropriate SI technologies. The various periodic studies undertaken as a contribution to the MELIA (section 6) will provide additional detailed data/information on: i) adoption of SI and diversification practices and ARM products (WP1-2); ii) the needs and priorities of agribusiness enablers and market demand (WP3); iii) the impact of these on environmental sustainability, inter-regional trade; and inclusive enterprise development iv) the impacts that gender and social inclusion, adaptive and inclusive scaling, and an enabling policy and investment have on all of the above.
3. **Lead:** UU will constitute a Steering Committee in its inception phase, with country coordination teams whose role it will be to coordinate UU activities in-country in partnership with One CGIAR global initiatives. WP Working Groups, will evolve into Technical Working Groups that provide support to UUs WP implementation. The UU project team will report on progress against MELIA targets annually. Based on feedback and information gained we will adjust TOCs, MELIA, scaling readiness and project plans (including necessary budget lines), as well as project activities, in the annual plan of work and budget. The projected benefits and the assumptions underpinning them will be revised annually based on progress made, additional data available and enhanced understanding of uptake in each WP.

7.2 Summary management plan Gantt table

| Initiative Start Date | Collaborating organizations | Timelines | | | | | | | | | | | | Description of key deliverables (maximum 3 per row, maximum 20 words per deliverable) | | | |
|--|--|-----------|-----|-----|-----|------|----|----|----|------|----|----|-----|---|--|--|--|
| | | 2022 | | | | 2023 | | | | 2024 | | | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | | | |
| January 2022 | | | | | | | | | | | | | | | | | |
| Work Packages | | | | | | | | | | | | | | | | | |
| WP1: Diversify and sustainably intensify | CIMMYT (lead); IITA, ILRI, ABC, IWMI | | | | 1 | | | | | | 2 | | 3 | | | | 1) Inventory of SI practices, suitability maps, and needs, plus an overview of the agribusiness environment. 2) SI bundles, mechanization, irrigation, and nutrition technologies tested, adapted, and scaled in community-based approaches. 3) Increased knowledge and capacity and delivery models for scaling. |
| WP2: De-risk and digitalize | ABC (lead), IITA, IWMI | | | | 1 | | | | 2 | | | | 3 | | | | 1) Digital agro-advisories and ARM products and services prioritized by partners. 2) Co-designed and tested digital agro-advisories and ARM bundled products and services with farmers and delivery partners. 3) Mobilized delivery mechanisms – such as mobile phone and television – for deploying bundled digital agro-advisories and ARM products and services to farmers. |
| WP3: Support and accelerate | ABC (lead), IITA, IWMI, WorldFish | | 1 | | 2 | | | | | | | | 3 | | | | 1) Ecosystem mapping report, start-up and SME research report, coordination plan, and implementation framework to inform rollout of incubation and acceleration programs. 2) Launch of annual incubation and acceleration programs with key scaling hub partners. 3) At least 50 start-ups and SMEs supported and accelerated; social and environmental impact report; results shared through a white paper and webinar. |
| WP4: Conserve and enable | IWMI (lead), IFRI, IITA, CIMMYT, ABC | | 1 | 1 | 2 | 1 | 1 | 1 | 2 | | | | 1/3 | | | | 1) Integrated EG Assessment Repository. 2) National target and benchmarks setting for SDGs. 3) Pan-African Policy Hub |
| WP5: Empower and engage | IWMI (lead), IITA, IFPRI, ILRI | | 1/2 | 1/2 | 1/2 | | | | | | | | 3 | | | | 1) Comprehensive GESI report on the agribusiness ecosystem in ESA. 2) Overview of GESI-informed innovations, achievements, and investments in the agribusiness ecosystem. 3) GESI framework and approach informing and standardizing 40% of UU WP activities, partnerships, and interventions. |
| WP6: Scale and coordinate | ILRI (lead), IITA, IWMI, ABC, CIMMYT, WorldFish, CIP, Africa Rice, IFPRI | | 1 | | | | | | 2 | | | | 3 | | | | 1) Set up UU Scaling Hub; 2) Country-specific scaling strategies co-developed with national and regional ESA demand, innovation, and scaling partners and with funders; 3) Scaling assessments and reviews that boost understanding of challenges and opportunities associated with scaling inclusive and sustainable climate-smart SI practices |
| Innovation Packages and Scaling Readiness | ILRI (lead), IITA, IWMI, CIMMYT, ABC | | 1 | 1 | 1/2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | | | | 1) Innovation prioritization and documented scaling ambition, vision of success and roadmap for use of Scaling Readiness for selected 10 priority Core Innovations. 2) 10 Evidence-based Scaling Readiness assessment reports and related scaling strategies for Innovation Package. 3) One Initiative innovation portfolio management system that uses scaling readiness metrics |
| MELIA | IWMI/ABC | | | | 1 | | | | 2 | | | | 3 | | | | 1) Baseline technology adoption and analyses. 2) Mid-term process assessment. 3) Impact assessment for end-of-Initiative outcomes |
| Project Management | IWMI/ABC | | 1 | 2 | 3 | | | | 3 | | | | 3 | | | | 1) Inception period finalization, completion of detailed implementation work plan. 2) Resource mobilization plan completed 3). Annual financial and technical reporting. |

7.3 Risk assessment

| Top 5 risks to achieving impact (note relevant Work Package numbers in brackets) | Description of risk (50 words max each) | Likelihood | Impact | Risk score Likelihood x Impact | Opportunities |
|--|--|---------------|---------------|-----------------------------------|---|
| | | Rate from 1-5 | Rate from 1-5 | | |
| UU's operations are disrupted or delayed due to the Covid-19 pandemic, war, natural disaster or other incident affecting UU's operations | Effective planning, on the ground implementation and travel are some of the project activities that could be affected by external factors such as Covid-19, political instability and natural disasters. These factors also often affect the financial base and functioning of the agribusiness environment. | 4 | 4 | 18 | Increased vaccination may reduce the exposure to and risk from COVID-19 for the public. COVAX will be further expanded, and vaccines will be more available globally. UU will conduct as many project activities virtually as possible. When this is not possible, UU will work with partners on the ground to drive implementation. Through ongoing consultative processes aimed at alignment with national priorities, the UU project team are alerted of any instability in ESA countries. Strong partnerships in ESA countries result in timely early warning systems and communication of political and other risks. |
| Target budget is not reached | As the ESA RII, UU is broad and ambitious in scope. However given the importance of the RII for coordinated One CGIAR efforts in a region, failing to secure the envisaged budget could compromise delivery and long-term impact | 5 | 3 | 15 | UU has engaged a considerable number of partners and potential funders in the design phase, however their participation has been limited to their roles as implementation partners/experts in their respective fields. A Resource Plan will be developed between October-December 2021 to identify more targeted interventions. |
| Availability/ maturity/ bankability of scalable technologies and their delivery pathways | Proposed technologies are not scalable (not context-specific) or need more time to be developed, and the delivery pathways are inadequate. | 3 | 3 | 9 | Through a strong Scaling Hub with coordinating scaling teams conducting scaling readiness assessments, robust due diligence will be followed to ensure that appropriate innovations are scaled. Collaboration with other IDTs will support the availability of scalable technologies and delivery pathways. |
| Private-sector engagement | Private-sector partners in the agribusiness environment demand financial support to collaborate, while others choose not to fund UU because they do not see its value proposition | 2 | 3 | 6 | Finding the right partners and developing a common vision during inception will reduce the likelihood of this risk. |
| One CGIAR structure fails to instill confidence in donor and partners to deliver at scale | Pace of implementation of One CGIAR structure without proper engagement with regional/national partners and stakeholders fails to instill confidence that the One CGIAR initiatives can deliver at scale | 2 | 3 | 6 | Frequent meetings and developing a coalition of the willing can overcome this challenge over time. An intensive participatory design process has been followed to date, and will continue with national consultations through to December 2021. |

8. Policy compliance and oversight

8.1 Research governance

Researchers involved in the implementation of this Initiative will comply with the procedures and policies determined by the System Board to be applicable to the delivery of research undertaken in furtherance of CGIAR's 2030 Research and Innovation Strategy, thereby ensuring that all research meets applicable legal, regulatory, and institutional requirements; appropriate ethical and scientific standards; and standards of quality, safety, privacy, risk management, and financial management. These procedures and policies include CGIAR's [CGIAR Research Ethics Code](#) and the values, norms and behaviors in CGIAR's [Ethics Framework](#) and in the [Framework for Gender, Diversity and Inclusion in CGIAR's workplaces](#).⁶²

8.2 Open and FAIR data assets

Researchers involved in the implementation of this Initiative shall adhere to the terms of the [Open and FAIR Data Assets Policy](#).⁶³

UU will align with the OFDA Policy's Open and FAIR requirements, including the following:

- Rich metadata conforming to the [CGIAR Core Schema](#) to maximize findability, including geolocation information where relevant.⁶⁴
- Accessibility by utilizing unrestrictive, standard licenses, such as the [Creative Commons](#) for non-software assets and the [General Public License](#) or [Massachusetts Institute of Technology](#) for software, and depositing assets in open repositories.⁶⁵
- Wider access through deposition in open repositories of translations and minimal data download requirements to assist with limited internet connectivity.
- Interoperability by annotating dataset variables with ontologies where possible and with controlled vocabularies where not possible.
- Adherence to the [Research Ethics Code](#) (Section 4) relating to responsible data through human subject consent, avoiding personally identifiable information in data assets, and averting other data-related risks to communities.⁶⁶

9. Human resources

9.1 Initiative team

| Category | Area of Expertise | Short description of key accountabilities |
|-----------------------|---|--|
| WP1: Research | Agronomy | Design, oversight and implementation, management of research, analysis and documentation, delivery |
| | Mechanization | Design research on mechanization, management of research, scientific knowledge, publication |
| | Nutrition | Design, implementation, management of research, scientific knowledge, publication |
| | Socio-economist | Adoption monitoring, impact assessment, scientific knowledge, delivery, publication |
| | Foresight and targeting | Scientific knowledge, delivery, publication |
| | Scaling specialist | Scientific knowledge, delivery, publication |
| | Research assistants | Management of research, knowledge |
| WP1: Research support | MEL assistant | MEL |
| | Communication | Publication, documentation, and delivery |
| WP2: Research | Agro-advisory service design specialist | Designing bundles of agro-advisories and ARM |
| | Climate impact and big data analysis | Climate impacts analysis |

| | | |
|--------------------------------------|--|--|
| | Insurance specialist | Designing insurance products |
| | Microfinance specialist | Designing risk-informed credit |
| | Socio-economist | Impact Assessment and economic analysis |
| | Mobile solutions expert | Leading design of mobile systems |
| WP2: Research support | Program coordinator | Link between research and operations |
| WP3: Research | Sustainable finance specialist | Design of research, implementation, management of research, quality control, publications, delivery, design of investment products, partnerships |
| | Climate strategy specialist | Scientific knowledge/Technical assistance (TA), delivery |
| | Scaling specialist | Scientific knowledge (TA), delivery |
| | Breeding specialist | Scientific knowledge (TA), delivery |
| | IPM specialist | Scientific knowledge (TA), delivery |
| | Value addition specialist | Scientific knowledge (TA), delivery |
| | Social scientist | Adoption monitoring, impact assessment, scientific knowledge, delivery, publication |
| WP 3: Research Support | Consultant – knowledge and network partner | Design of research and implementation on ecosystem and solution space |
| WP4: Research | Agro-ecologist | Environmental impact assessments |
| | Senior and Junios Crop modellers | Crop water modelling |
| | Integrated modellers | Integrated impact modelling of the impact of climatic risks, and adaptation and mitigation strategies, on inter-regional trade patterns |
| | Environmental/Agricultural Economists | Evidence to support SI/diversification policy implementation, and development of policy monitoring frameworks |
| | NRM Policy/governance specialists | Policy hub development, policy coherence assessments |
| | Multi-partner platform specialists | Policy dialogue, institutional coordination |
| WP4: Research support | Stakeholder engagement officer | Scientific knowledge, delivery, |
| | Science communicator | Publication, documentation, and delivery, Advocacy |
| | Digital services and innovation specialist | Big data platform developments |
| WP5: Research | Gender, Agriculture and Entrepreneurship Specialists | Provide conceptual depth and clarity; establish and strengthen mixed methods that bring cutting edge GESI focus. |
| | NRM Policy/governance specialist | Provide the NR interface with Sustainable Inclusive Agrifood Systems; capacity for systems change that leads to gender transformative social inclusion |
| | Communications and Outreach Specialists | Design, plan and execute collaborative partnerships with public, private and grassroots actors and initiatives |
| | Gender Transformative Training Experts | Training design, delivery, evaluation. |
| | Science Communicator | Translate and repackage research into policy-relevant and widely accessible science outputs. |
| WP 6: Scaling Hub Director | Scaling of Innovation | Lead the ESA Scaling Hub, ensure integration and collaboration and co-investment across CGIAR Initiatives, high level demand-supply alignment |
| WP 6: Senior Scaling Science Expert | Science of scaling innovation | Lead the ESA scaling science (e.g. innovation and scaling network analysis, review of scaling cases) |
| WP 6: Senior Scaling Practice Expert | Practice of scaling innovation/ agribusiness | Lead ESA scaling practice (e.g. develop scaling partnerships, co-investments in scaling, support scaling strategy implementation, etc.) |
| WP 6: Junior Scaling Experts | Science and practice of scaling innovation | Support science and practice of scaling innovation in ESA |

9.2 Gender, diversity, and inclusion in the workplace

Gender, diversity, and social inclusion are crucial to UU's research strategy and operations. GESI is embedded within all UU's WPs. WP5 is led by a GESI specialist and dedicated to GESI as a principle focus, ensuring that a GESI-transformative agenda is applied throughout. Operationally, UU is composed of individuals from diverse backgrounds. Already, the leadership team for the Initiative and WPs comprises 60% women, all of whom are from minority groups; two of three are from ESA. The Initiative team aims to exceed CGIAR's gender target of a minimum of 40% women and members of under-represented communities in professional roles, with emphasis on empowering these individuals in senior-level research, management, and roles contributing to MELIA and communications. Of the 105 active UU Working Group members, 47% are women (Annex 1). A concerted effort will be directed toward mentoring junior women staff and staff from diverse backgrounds in a co-learning model that emphasizes "humble mentoring."⁶⁷ Capacity development for the UU implementation team and partners will tackle social exclusion in the workplace and unconscious bias, and will support male colleagues in being better allies for women, which will create an environment in which team members collaborate daily in ways that both consider and create opportunities to overcome the power asymmetries associated with ESA's conventional agricultural research community. Finally, UU has a strong focus on executing a staffing plan that prioritizes regional scientists originating in ESA and individuals with long-term living and work experience in the region, in alignment with the role of UU as an RII to embed One CGIAR locally within national contexts, driving a strong locally relevant R4D agenda and strengthening the capacity of its people.

9.3 Capacity development

The Initiative's Team and Deputy Team Leads, each WP Lead, and project management staff will complete intensive training on inclusive leadership within three months of the Initiative's launch. Within six months, all Initiative team members and leading collaborators from funded partner organizations will complete additional training on GESI and participate in the co-development of the UU GESI framework. This training will focus on fostering conditions that enable representation of under-represented minorities in the workplace, while providing guidance on whistleblowing and confidential methods to report concerns to appropriate authorities for review and potential corrective action. Given UU's focus on scaling, WP6 will coordinate training sessions on inclusive and adaptive scaling for all WP teams and representatives of the Scaling Hub.

UU will begin in January 2022. A kick-off event is anticipated for March 2022 for internal staff, collaborators, and external partners, which will include focused sessions on cross-cutting areas of GESI and scaling as they pertain to each of the Initiative's WPs. A specialized session will also raise awareness of CGIAR's values, code of conduct, and range of learning and capacity development opportunities, focused on increasing GESI within CGIAR and in ESA.

These efforts will be complemented by UU's mentorship programs in which members of under-represented groups are paired with the Initiative Lead, Co-Lead, or WP Lead and with subject-matter experts for professional mentoring and development. UU will integrate a studentship and internship program into its project design to allow early career professionals to pursue related postgraduate studies and experiential training. A partnership network of national and international universities and capacity development networks such as RUFORUM, WaterNet, and AWARD will be established to catalyze this process.

10. Financial resources

10.1 Budget

10.1.1: Activity breakdown

| USD | 2022 | 2023 | 2024 | Total |
|---|-------------------|-------------------|-------------------|-------------------|
| Crosscutting across Work Packages | 1,175,000 | 1,762,500 | 1,762,500 | 4,700,000 |
| Work Package 1 | 2,967,500 | 3,202,500 | 3,330,000 | 9,500,000 |
| Work Package 2 | 1,750,000 | 2,100,000 | 3,150,000 | 7,000,000 |
| Work Package 3 | 1,175,000 | 1,762,500 | 1,762,500 | 4,700,000 |
| Work Package 4 | 1,175,000 | 1,762,500 | 1,762,500 | 4,700,000 |
| Work Package 5 | 1,762,500 | 1,762,500 | 1,175,000 | 4,700,000 |
| Work Package 6 | 793,125 | 793,125 | 793,125 | 2,379,375 |
| Innovation packages & Scaling Readiness | 775,500 | 793,125 | 752,000 | 2,320,625 |
| Total | 11,573,625 | 13,938,750 | 14,487,625 | 40,000,000 |

10.1.2: Geographic breakdown

| USD | 2022 | 2023 | 2024 | Total |
|--------------------------------------|-------------------|-------------------|-------------------|-------------------|
| Mozambique | 264,375 | 264,375 | 176,250 | 705,000 |
| Rwanda | 146,875 | 220,250 | 220,250 | 587,375 |
| South Africa | 299,625 | 299,625 | 199,750 | 799,000 |
| Tanzania, United Republic | 358,375 | 431,750 | 361,250 | 1,151,375 |
| Uganda | 396,875 | 520,250 | 670,250 | 1,587,375 |
| Ethiopia | 608,375 | 731,750 | 811,250 | 2,151,375 |
| Malawi | 1,004,545 | 1,160,715 | 1,264,175 | 3,429,435 |
| Zimbabwe | 1,089,635 | 1,238,053 | 1,277,167 | 3,604,855 |
| Kenya | 1,664,529 | 1,897,602 | 2,142,356 | 5,704,486 |
| Zambia | 1,821,790 | 2,063,131 | 2,294,803 | 6,179,724 |
| ESA Region (cross cutting, WP4, WP6) | 3,918,625 | 5,111,250 | 5,070,125 | 14,100,000 |
| Total | 11,573,625 | 13,938,750 | 14,487,625 | 40,000,000 |

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⁹ AGRA, "The Hidden Middle: A Quiet Revolution in the Private Sector Drivign Agricultural Transformation," Africa Agriculture Status Report, 2019, <https://agra.org/wp-content/uploads/2019/09/AASR2019-The-Hidden-Middleweb.pdf>.

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³³ Twelve ESA countries earmarked for implementation in a phased approach include:

Phase 1 (2022-2024): Kenya, Ethiopia, Zambia, Zimbabwe

Phase 2 (2025-2027): Uganda, Rwanda, Malawi, Tanzania

Phase 3 (2028-2030): Mozambique, South Africa, Eswatini, Madagascar

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