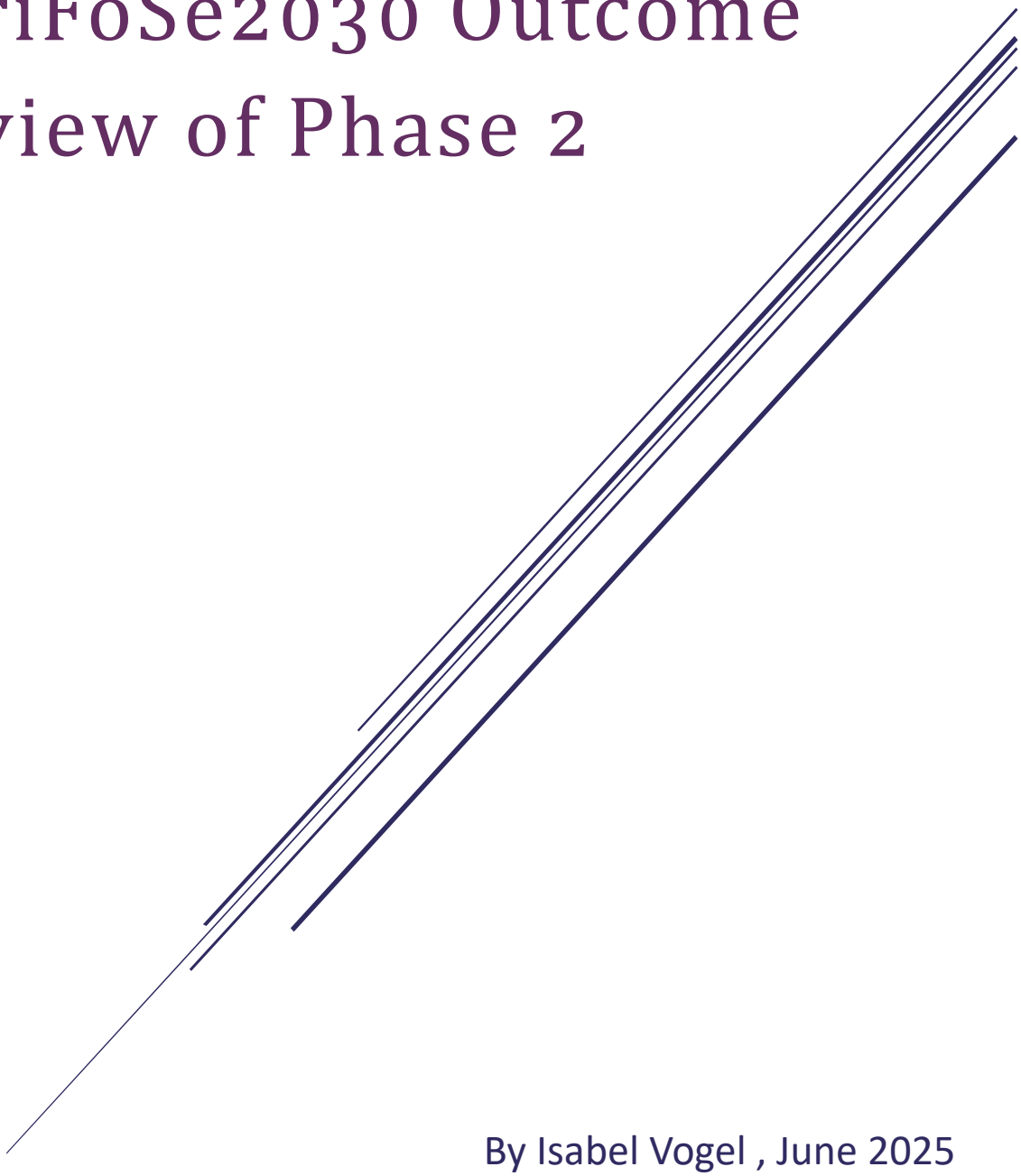
Isabel Vogel
Evidence, Learning and Change

AgriFoSe2030 Outcome Review of Phase 2



By Isabel Vogel , June 2025

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Executive Summary

This report shares the findings of the outcome review of the Agriculture for Food Security 2030 (AgriFoSe2030) programme, Phase 2. The study focused on AgriFoSe2030's projects with small-holder farmers and other agriculture and food system actors in Africa and Asia. It aimed to establish what outcomes projects had contributed to; how projects had contributed to these outcomes; and identify lessons for improving future science translation projects.

Method

The review followed a theory-based (TBE) design, so the programme theory of change (ToC) provided the analytical framework. The review used a combination of document review and key informant interviews. A desk review of the existing monitoring and evaluation documentation from all 17 Challenge projects was conducted. Four projects were selected for a 'deep dive' case study. For these case studies, primary evidence was collected via a set of 14 stakeholder interviews to provide local perspectives. The review and data collection took place during October 2024-February 2025.

Findings

The reported outcomes **illustrate good progress along the programme ToC towards impact,** providing a rich range of examples of more deep-seated, structural changes that have yielded practical benefits for smallholder farmers and their communities in the project settings in Africa and Asia.

In the 'deep dive' projects, local respondents confirmed many of the outcomes and highlighted areas of strength and points for improvement. These outcomes are especially notable given the relatively short duration of the projects – from 18 months to three years – and represent good foundations for change to be sustained.

Important examples noted in the ToC's first outcome area – **changes in knowledge, behaviours and relationships -** include:

- **Increased awareness and understanding among stakeholders on the importance of collaboration between smallholder farmers and extension services**. Reported by most projects, we can highlight examples in Burkina Faso, where the project catalysed co-learning between farmers and extension services on how to manage parklands sustainably, while in Kenya, stakeholders recognised the importance of establishing feedback mechanisms in developing flexible extension services that are more responsive than traditional models.
- Six projects reported outcomes relating to **collaboration between small holder producers and other stakeholders** (Laos, Uganda, Zimbabwe, Burkina Faso, South Africa and Kenya). This outcome is key in the theory of change as supporting stakeholders to collaborate is a foundation for project outcomes to be sustained into the future.
- Five projects reported outcomes where **small holder farmers established groups to amplify their voice on issues that affect them.** Examples of this in Laos, Uganda, Zimbabwe and South Africa highlighted how small producer groups are enabling men and women farmers who had previously not worked together to have dialogue, share skills, coordinate on marketing, engage decision makers and regulators, and co-develop solutions to shared problems.

Medium term, structural changes relating to **changes in stakeholders' capacities, structures, systems and practices** were also reported:

- Many projects helped to establish **inclusive improvement platforms,** bringing value chain stakeholders together for collective benefit. For example, in Zimbabwe, the project supported **three formal insect collection and trading groups.** In the Uganda milk value addition project, a **mini milk value-addition production facility** was built, providing women producers with a hygienic and equipped facility for their products. In Burkina Faso, stakeholders from three municipalities, including farmers, extension staff, NGOs, municipalities, and market actors, **collaborated in innovation platforms** to enhance sustainable production and community livelihoods.

Researchers also reported **enhanced capacities to translate science into policies and practices**, in key areas such as science communication, interdisciplinary working, participatory approaches and stakeholder engagement, enhancing gender sensitivity, equity and inclusion in projects, project management including theory of change and monitoring, evaluation and learning.

Lessons and recommendations for future projects

The main lesson for future projects is that the core model of **science translation combined with co-development of applied solutions with small-holder farmers and stakeholder mobilisation** has proved effective at catalysing

practical change and benefits. Within that frame, the review identifies six ways that this model can be enhanced.

Lesson 1. Sustainable change requires greater time and effort to really embed.

Longer project durations would enable important scoping, mapping of contexts and needs assessments to support more tailoring and a deeper engagement with local stakeholders. Projects could also provide support to change processes over a longer period to help them to embed. A broader scope would enable teams to engage in a more holistic way in food systems, landscapes and value chains.

Recommendation: **Design longer projects, with more resources and broader system scope, while maintaining a flexible and responsive approach.**

Lesson 2. Participatory processes have proven essential in the projects to co-develop solutions with small-holder farmers and other stakeholders, building trust and local ownership for sustainability.

A number of researchers identified a need to continue to build their skills in participatory approaches. Participatory processes are also essential for promoting inclusion, recognising different perspectives and lifting local knowledge as a form of expertise. Strengthening skills in this area would help to catalyse the agency of marginalised groups such as women, young people and small-holder famers themselves.

Recommendation: **Continue to prioritise collaboration, while strengthening skills in participatory approaches as key drivers of outcomes.**

Lesson 3. Projects that intentionally addressed power imbalances and created spaces for equal participation across stakeholder groups helped to catalyse the agency of small-holder farmers and their communities, strengthening their resilience and self-reliance in relation to other actors.

This highlights that building skills in project teams to enhance gender sensitive approaches and promote inclusion and equity are not just ethically important but in themselves catalyse pathways to long-term change.

Recommendation: **Continue to address power imbalances, while strengthening capacities for gender-sensitive approaches and social inclusion as catalysts for change.**

Lesson 4: Projects that successfully mobilised broad stakeholder networks, e.g. policy and decision makers helped to embed the involvement of small holder farmers in decision making, support and scale new practices and innovations.

There is potential to engage larger institutional players, and broader range of stakeholders in markets and value chains in future projects to support system-wide shifts.

Recommendation: **Continue to engage a wide array of stakeholders, and allocate sufficient resources to build a broader institutional network across food systems and value chains.**

Lesson 5: Small-holder farmers were more likely to engage in projects if they could see the economic benefits and manage the risks of shifting their practices. Young people were seen as more likely to engage if there was a clear emphasis on enhancing economic opportunities and creating a viable future livelihood. Future projects should consider how to build in a central focus on income generation and improved market access, including access to the tools and technologies needed (e.g. digital services, connectivity, transport).

Recommendation: **Expand the focus on livelihoods, market linkages and economic benefit.**

Lesson 6. Science translation for supporting small-holder farmers is still an emerging field and skill-set in Africa and Asia, in need of further development.

Researchers highlighted their interest in knowledge exchange and peer learning from other regions to strengthen their own capabilities for science translation. As this is an emerging field and scientific skill set in Africa and Asia, there is also a keen interest to expand the field of science translation through creating formal academic publications from the work done in projects. As the AgriFoSe2030 researchers come from a range of disciplines, support for publications would be required from a future programme.

Recommendation: **Continue to strengthen peer learning and exchanges between AgriFoSe2030 teams, while formalising and consolidating learning through publications to build the field of science translation.**

AgriFoSe2030

Outcome Review of Phase 2

1. Introduction and overview

This report shares the findings of the outcome review of the Agriculture for Food Security 2030 (AgriFoSe2030) programme, Phase 2. The review and data collection took place during October 2024-February 2025. The study aims to:

- Conduct a limited review of the outcomes that have emerged for local stakeholders – e.g. smallholder farmers, practitioners, policy and decisionmakers, others – supported by the AgriFoSe projects, and the significance of these to local stakeholders, including any ongoing benefits.
- Understand the potential for change trajectories to be sustained and/or expanded locally.
- Understand how effective the projects have been at producing these changes, and what has worked, for whom, in what circumstances and why.
- Generate lessons to inform the design of the next phase of the programme.

1.1 Overview of the programme

AgriFose2030 aims to contribute to achieving the sustainable development goals (SDGs), with a primary focus on promoting sustainable agriculture and ensuring food security for smallholder farmers.

Phases 1 (2016-2020) and 2 (2021-24) of AgriFoSe focused on supporting Higher Education Institutions (HEIs) in sub-Saharan Africa (SSA) and Southeast Asia (SEA) to develop their capacity to catalyse and inform the transition to meet SDG 2, and support vulnerable populations in attaining food security, nutrition improved livelihoods and sustainable food systems.

The overarching objectives of the AgriFoSe programme are:

- increased capacity of scientists, mainly young and emerging researchers, to synthesise, analyse, and communicate science with different stakeholders
- increased use of science-based knowledge in policies and practices
- improved connection between science, policy, and practice.

AgriFoSe2030 works with a programme-specific ToC approach that guides the programme towards a series of desired changes and goals. The programmme works through two channels –

i) capacity strengthening of scientists and their institutions to do science translation; and

ii) projects working directly with smallholder communities to translate science into improved practices and policies.

In order to establish if the goals of the programme are being met, and to inform the design of Phase 3, the programme commissioned an outcome review to establish the extent and significance of outcomes catalysed by the local science translation projects.

2. Purpose, focus and scope

To meet the objectives, the review is utilization focused, that is, aiming to produce practical, applicable learning for the evaluation users. The evaluation also fulfils an accountability purpose by establishing what has been achieved and the significance of these for local stakeholders.

2.1 Review focus and design

The review focused on the outcomes that have emerged for local stakeholders – e.g. smallholder farmers, practitioners, policy and decisionmakers, others – catalysed by the AgriFoSe projects.

The review followed a theory-based evaluation (TBE) design, framed by the outcomes set out in the programme-level theory of change and the project level theories. A theory-based evaluation uses a clear theory of change or logic model to explain how a development intervention works, from activities to outcomes. It tests this theory to see if it holds true. [1] TBE is appropriate given the complex effects of multi-stranded design of the AgriFoSe projects and their interaction with local dynamics.

Within this frame, the main data collection and analytical approach will be primarily qualitative analysis.

2.2 Review questions

[1] https://www.intrac.org/wpcms/wp-content/uploads/2017/01/Theory-based-evaluation.pdf

The review addressed the following questions:

1. What outcomes have emerged for local stakeholders, both those anticipated by the ToCs and those that were unintended?
    a. How significant are these for local stakeholders, what benefits have they gained?
    b. What's the potential for these outcome trajectories to be sustained or expanded locally?
2. How effective have the sampled projects been at catalysing these changes?
    a. How have the projects contributed to the observed outcomes, alongside other factors?
3. What lessons can be identified for the next generation of AgriFoSe projects?

2.3 Scope

The review is focused on the second stream of the AGriFoSe2030 programme – the Challenge projects. It will not be examining the institutional capacity strengthening aspects, although it does reflect on the researchers' capacities strengthened through leading the projects.

There are 17 Challenge projects, which are covered via the desk review and four projects which were selected for a deeper analysis (see Annex X for an overview).

3. Methods

The review followed a TBE design, so the programme ToC provided the analytical framework (see Figure 1 overleaf.) The review used a combination of document review and key informant interviews. A desk review of the existing monitoring and evaluation documentation from all 17 Challenge projects was reviewed. Four projects were selected for a 'deep dive' case study. For these case studies, primary evidence was collected via a set of 14 stakeholder interviews to provide local perspectives.

The deep dive projects were selected using the following criteria:

- Alignment with outcomes of interest in the programme ToC
- Sufficient time having elapsed for outcomes to emerge, so projects with earlier start dates.
- Representative spread across Challenges and continents Africa and Asia.
- Feasibility of accessing local stakeholders for individual key informant interviews (KIIs), either in person or remotely.

The four projects selected were:

- Challenge 1: Safe and nutritious food – Small-holder Goat production in Laos

- Challenge 2: Climate resilient landscapes - Promotion of sorghum-cowpea rotations in smallholder farming systems in South Africa for climate change adaptation
- Challenge 3: Digital Extension Services – Digitalization of extension services in South-east Asia – Vietnam
- Challenge 4: Rural Urban Food Systems: Resilient urban food systems, Uganda.

Data collection and reviewing were conducted by the evaluator and research assistants from October 2024 to February 2025.

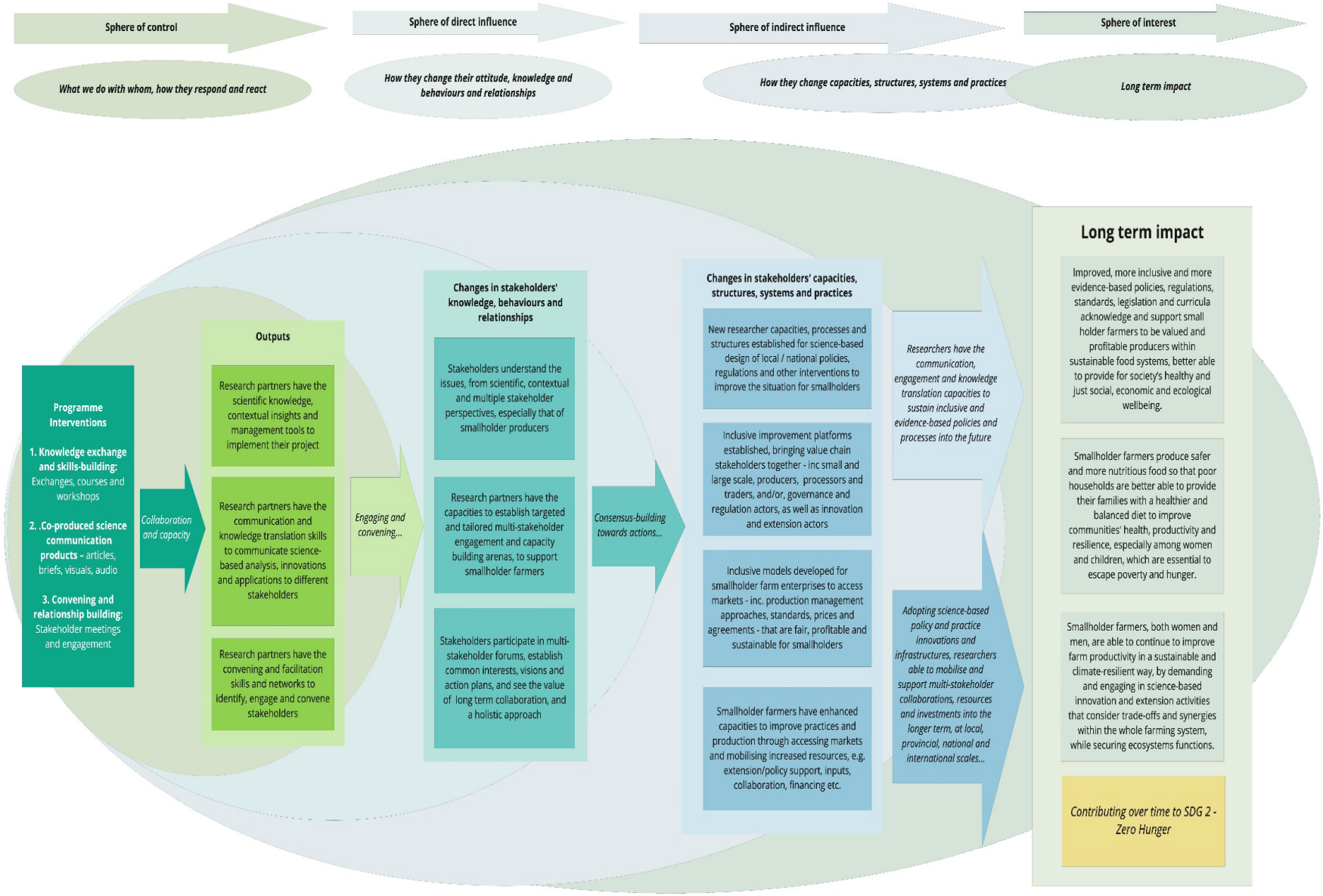
For each deep dive project, three respondents were identified by the project teams and the PI was also interviewed. The qualitative documentary and interview data were coded and analysed using Excel, structured using the three outcome categories set out in the ToC, and the review questions. Co-Pilot (Microsoft) was used to conduct preliminary thematic analyses of anonymised coded data extracts which were then cross-checked and enriched manually by the evaluator.

3.1 Limitations

Limitations to the outcome review are as follows:

- Outcomes reviewed are synthesised from self-reports by project teams. *Mitigation*: The teams report on progress and outcomes every six months throughout the project duration, facilitated by the central MEL team, enhancing the reliability of the self-reported outcomes.
- Interviews with local stakeholders were conducted remotely over WhatsApp and Zoom by the evaluator, limiting the ability to explore project outcomes at first-hand. Some interviews also required translation. Also, it was only possible to interview two stakeholders from the Uganda project due to scheduling challenges. *Mitigation:* Interviews in Vietnam and Laos were conducted by local research assistants, enhancing the reliability. As a whole, the interviews were treated as additional qualitative data points to enrich the document analysis and illustrate outcomes rather than as sources of verification which would have required a larger-scale evaluation.
- It was not possible to address one of the original review questions due to insufficient data – "What worked for whom and why?"

AgriFoSe 2030 Phase II Programme ToC



4. Findings

This section discusses the findings, using the programme level ToC as the outcome framework, and the review questions to structure the analysis.

The programme ToC sets out a sequence of outcome categories:

- Research partners' capabilities for science translation enhanced.
- Changes in stakeholders' knowledge, behaviours and relationships.
- Changes in stakeholders' capacities, structures, systems and practices

This section will discuss first the outcomes and benefits - for local stakeholders, their significance, and sustainability, before discussing outcomes for research partners. Then the analysis will focus on the sampled case study projects, to understand how they contributed to the outcomes.

4.1 Outcomes for local stakeholders

Changes in stakeholders' knowledge, behaviours and relationships

The programme ToC anticipates two sub-outcomes relating to changes in stakeholders' knowledge and behaviours, and the review identified an additional one.

a. Stakeholders understand the issues, from scientific, contextual and multiple stakeholder perspectives, especially smallholder farmers

Most projects reported **increased awareness and understanding among stakeholders** on the importance of collaboration between smallholder farmers and extension services. Projects in Laos (goat management), Burkina Faso (parkland management); Kenya, Sri Lanka, Laos and Sweden (digital extension services); Vietnam (digital extension services) noted changes around improved collaboration and joint working, often catalysed by participatory approaches. For example, in Burkina Faso, the project catalysed co-learning between farmers and extension services on how to manage parklands sustainably, while in Kenya, stakeholders recognised the importance of establishing feedback mechanisms in developing flexible extension services that are more responsive than traditional models.

The projects working on digital extension services in south-east Asia (DES) also reported increased awareness and understanding amongst smallholder farmers and extension officers on the importance of DES and working together to improve these.

Important examples of changes in awareness and understanding reported included shifts in community and smallholder farmers' attitudes on gender relations. In the project on milk value chains in Uganda, there were reported shifts in cultural attitudes towards the empowerment of women in dairy value chains, while in Tanzania (the project on gender-sensitive extension services), there were positive shifts in understanding about how gender gaps in skills, abilities and power arise between

women and men in smallholder farming communities. Some strategies for reducing gaps and better supporting women were identified. In South Africa, the indigenous grains project reported increased enthusiasm, knowledge, skills, and capacity to upscale pea and sorghum, especially among women smallholder farmers.

Among decision makers, there was increased recognition of the role and contributions of smallholder farmers as key players in food systems in Uganda and Kenya. In another project in Kenya and Ethiopia on agricultural biologicals, decision makers realised the need for regulation of the use of biologicals and contributed to re-starting a process to develop a directive in the respective countries.

b. Stakeholders participate in multistakeholder forums, establish common interests, visions and action plans, and see the value of long-term collaboration and a holistic approach.

Six projects reported outcomes relating to **collaboration between small holder producers and other stakeholders (**Laos, Uganda, Zimbabwe, Burkina Faso, South Africa and Kenya)**.** This outcome is key in the theory of change, as supporting stakeholders to collaborate is a foundation for project outcomes to be sustained into the future.

Of even more importance is for small holder farmers to establish **groups to amplify their voice on issues that affect them**. By working together in groups, smallholder farmers are able to demand better services from extension services, pool and share their skills and boost their negotiating position, as well as voice their perspectives in decision making spaces. We saw examples of this in Laos, Uganda, Zimbabwe and South Africa, where small producer groups are enabling men and women farmers who had previously not worked together to have dialogue, share skills, coordinate on marketing, engage decision makers and regulators, and co-developing solutions to shared problems.

In the parklands project in Burkina Faso, the establishment of innovative platforms for stakeholders to learn from each other has yielded important changes. Farmers are planning to move into formal cooperatives, while extension agents from three ministries of agriculture forestry and livestock have reached a common agreement on sustainable parkland management through agro-ecological practices, where previously there had been separate plans and management approaches.

In the deep dive projects, stakeholders interviewed from Laos emphasised the benefits the project had brought in terms of **strengthened community co-operation and self-reliance** through the project, although there were still some inequities to address in terms of access to the project benefits.

In South Africa, stakeholders emphasised that the **community has grown** through the work on climate resilient and indigenous crops, with greater participation in the famers group by women than men. Even where disagreements have arisen, the group have learned how to resolve them and continue to work together and present a united front to market buyers of sorghum.

In Uganda, stakeholders noted that urban farmers **now know how to work together** where previously this was done in isolation, and are sharing know-how to improve their food, coordinating on marketing and prices.

c. Extension workers gain new capacities

This is a new outcome area, not anticipated in the ToC, but of some significance. Projects in three countries reported this: Laos (goat management), Vietnam (rice straw) and South Africa (cowpea and sorghum project). New knowledge, skills and capacities reported included knowledge of the specific crops and livestock animals, but also of the importance of convening multistakeholder processes and the skills required (e.g. Participatory Rural Appraisal -PRA techniques). These new capacities are important for extension services to respond better to smallholder farmers' needs, implementing new, more effective practices, and sustaining outcomes in communities.

Changes in stakeholders' capacities, structures, systems and practices

The programme's ToC anticipates three sub-outcomes relating to more deep-seated, structural changes that are expected to emerge over the medium term.

a. Inclusive improvement platforms established, bringing value chain stakeholders together - including small and large-scale producers, processes and traders, and/or governance and regulation actors, as well as innovation and extension actors

'Inclusive improvement platforms' refer to formally constituted spaces where small holder producers and other value chain actors are able to dialogue and collaborate to solve value chain problems in their mutual interest, innovate together and improve the quality and value of products along the chain. Improvement platforms offer a structured way for traders, extension services and other entities to engage with farmers at a collective level. Many of the AgriFoSe2030 projects aimed to establish inclusive platforms where smallholder producers, women as well as men, could have fairer representation and a stronger voice, or to make existing platforms more inclusive.

We saw examples in Zimbabwe (insect project) Uganda (milk value addition), Burkina Faso (parklands management) and Uganda (urban food systems) of how the projects had contributed to this. For example, in Zimbabwe, the project supported **three formal insect collection and trading groups**. These groups were able to share knowledge on improving quality and safety of insect products from harvest to marketing, and were able to engage with the municipal authorities and onward sellers for collective benefit.

In the Uganda milk value addition project, a **mini milk value-addition production facility** was built. This new infrastructure provided the women producers with a hygienic and equipped facility for their products, and a physical space within which to gather to share knowledge, interact with other stakeholders and establish a fledgling innovation platform.

In Burkina Faso, stakeholders from three municipalities, including farmers, extension staff, NGOs, municipalities, and market actors, **collaborated in innovation platforms** to enhance sustainable production and community livelihoods. This collaboration fostered knowledge sharing and the development of new agroecological practices. One example of how this has contributed to improvements in the value chain was reported in the shea value chain, where the stakeholders decided to focus on local processing of almonds into butter and soap was emphasized. Women trainers were brought in to teach others how to produce higher quality soap with better marketing potential than traditional soap. This initiative aims to increase the value of shea production, boost farmers' income, and support better conservation and higher density of shea trees in the parklands.

In Uganda urban food systems, the AgriFoSe2030 project mobilized stakeholders in Mbale City and Kasese urban regions to **set up platforms for enhancing urban food systems resilience**. Important processes and mechanisms were set up as a result of the project, including budgetary allocations to support farmers in Kasese, creation of a dedicated post for Horticulture in Mbale, and an allocation of land as an agricultural demonstration site for smallholder farmers to practically demonstrate their innovations. Women farmers were also encouraged to take up leadership positions, for example, the platform in Kasese is led by a women farmer.

In South Africa, **platforms brought together smallholder farmers, government and the private sector**. As well as knowledge sharing benefits, these interactions helped give farmers a platform to express their needs and perspectives.

The significance of these outcomes hinges on the **enhanced confidence and capacity of smallholder farmers to engage with other value chain actors, political and local governance entities.** As a result of the AgriFoe2030 projects, smallholder farmers have greater abilities to represent themselves as a group, expressing their needs and holding dialogues. This is a significant change as their views and voices are not often heard in decision making that affects them in the different project settings.

b. Inclusive models developed for SHs enterprises to access markets - including production management approaches, standards, prices and agreements, that are fair, profitable and sustainable for SHs

This outcome refers to ways for small holder farmers to access markets that are inclusive, fair and profitable. These might include meeting the formal standards for their products that indicate quality and confidence to buyers, and supply agreements. Two important examples were reported in this outcome category.

In Zimbabwe, **three innovative insect products** have been developed for market with the support of the AgriFoSe2030 project, designed to suit the markets of rural and urban communities as well as school-going children. This is an important step towards diversifying food sources and improving nutrition in both rural and urban areas. A **framework agreement** was also developed to facilitate the direct supply of insects from collectors to the Chinhoyi market, which is an important step in enhancing the

livelihoods of insect collectors by providing them with a stable and profitable market. At a national level, the Standards Association of Zimbabwe has initiated steps to **establish edible insect food standards** in Zimbabwe, as a new food sector. Establishing edible insect food standards can ensure the safety and quality of these products, potentially leading to increased acceptance and consumption.

In the Uganda milk project, a process was initiated for the value-addition products to **undergo registration with the Uganda National Bureau Standards**. In both examples, these outcomes highlight the efforts to create sustainable and profitable markets for small holder farmers' products, a foundation for contributing to food security and economic development in these countries.

c. SH farmers have enhanced capacities to improve practices and production through accessing markets and mobilising increased resources, e.g. extension / policy support, inputs, collaboration and financing.

This outcome is a key one in the AgriFoSe ToC, representing one of the principle aims of all the projects. There were examples from across all projects and regions of this outcome, some have been selected below.

In the Laos goat improvement project, the projects' surveys indicated that 114 farmers of the total 129 farmers engaged in the project reported that they had **adopted improvement practices in goat production**, specifically in parasite deworming, while 52 farmers undertook improvements in their goat breeds and all farmers improved their goat pens. The local stakeholders interviewed for this study confirmed that, in their view, the initiative has made a significant contribution to improved livelihoods in the communities engaged by the project by introducing better goat breeds, enhancing animal husbandry practices, and providing training on sustainable management. By focusing on improved nutrition, veterinary care, and market linkages, the project was seen to have contributed to increased goat productivity and household income, fostering economic resilience.

In Zimbabwe, the edible insect market in Chinhoyi, established by the AgriFoSe2030 project, has become **established and continues to trade sustainably**, bolstered by the supply agreements and standards development mentioned above.

In the Uganda milk value addition project, reports state that the women who participated in the project are now **engaging in productive work** away from their homesteads, in collaboration via women's groups (e.g. village savings and loans associations) to enable them to easily access the market. Women now have agreements from their spouses to provide a sustainable supply of milk (in this community's culture, men lead on milk production) and have the skills to transform them into marketable goods with extended shelf lives. At the end of the project, it is reported that the women seem to be on track to build sustainable and competitive enterprises with the support of their spouses. This has already led to perceived increases in household income in the communities.

In the resilient urban food systems project in Uganda, smallholder farmers, initially focused on farming for home consumption, have now learned to **approach farming as a business** using available land and relevant agro-enterprises. Through capacity-building activities supported by the project, they have adopted practices to utilize resources effectively and overcome agricultural risks like drought and floods. The project reports contributions to enhanced resilience by providing phased training on land management, farming practices, agriculture finance, business opportunities, and sustainable use of local resources. Local experts have facilitated knowledge sharing and field excursions to support these efforts. The stakeholders interviewed for this project confirmed these changes, noting the **improvements in knowledge about food safety and product quality among farmers** as a result of the project. They also noted the benefits of the enhanced collaboration between urban farmers, livestock and crop farmers, as well as improvements in farmers' resilience to flooding arising from training given in the project.

In Burkina Faso, the project reports that the **innovation platforms are being maintained** after the project's end. To continue promoting agroecological practices, the smallholder farmers involved have started the process of organizing themselves into agroecological cooperatives across three municipalities. These cooperatives, which are intended to include agroecological producers, traders, processors, and input cooperatives, will be created in villages and grouped into municipal cooperatives. It is hoped that these municipal cooperatives will interact with municipality extension services, local policymakers, and research institutions, via the innovation platform, ensuring the continuation of agroecological practices and improved market access.

In Kenya, the project to enhance pastoral livelihoods through indigenous vegetable production has seen **greater adoption of simple innovative methods of vegetable production**, and greater preservation, processing and consumption of indigenous foods. This is an important pathway for ensuring that locally-available foods are integrated in households' diets for sustainable food security instead of reliance on unpredictable external relief food supply that may not be equally nutritious.

In South Africa, the farmers' groups supported by the project successfully **upscaled sorghum production**, achieving 1 ha and 0.75 ha respectively in the 2022-2023 season. Fuduka cooperative farmers established a valuable link with the local municipality through its local economic development (LED) program, benefiting from tillage services, business training, and participation in small business exhibitions. Some 130 kgs of sorghum were sold to a key trading body, and the income was reinvested into fencing off cooperative lands in Fuduka to protect the new cultivations from livestock. Stakeholders interviewed for this project confirmed these changes and emphasised that these improved linkages were a direct result of the project, which has helped establish greater awareness of indigenous grains and laid the foundations for tackling the next-stage challenges of establishing seed banks and improving transport links.

In the Vietnam rice straw project, small holder farmers have increasingly **adopted advanced technologies for collecting and removing rice straw.** They also report more skills in using fermented rice straw as feed for ruminants and for mushroom cultivation and composting. In the project districts, farmers are applying better management practices for mushroom production, using training manuals. Additionally, more farmers are reported to be using rice straw for mushroom production, enabling them to compost used straw with mechanization instead of discarding it. Farmers have also formed a mushroom producer association to share knowledge, negotiate with traders, and seek government support.

These outcomes reflect the positive impact of the AgriFoSe2030 change projects on smallholders' practices, market access, and the strengthened capacities and agency of farmers and communities. The outcomes highlight how collaboration between stakeholder groups and sustainable practices are important contributors to improved livelihoods in the longer-term.

4.2 Outcomes for research partners

As one of AgriFoSe2030's aims is to strengthen scientists' capacities to translate science, in their final reports, the programme's research partners were asked to reflect on the capacity-related changes for them.

Across the 17 projects, researchers in Africa and Asia reported growth in skill sets in the following areas:

- **Interdisciplinary teamwork, collaboration**: The AgriFoSe2030 projects were all interdisciplinary in their approach, bring together teams of researchers with natural and social science backgrounds. Teams reported better skills and knowledge for working in interdisciplinary teams – including clear communications of roles and responsibilities, enthusiasm for going beyond their disciplines so that the team can reach a common agreement, share experiences and collaborate effectively, despite the diverse range of perspectives and expertise within teams.
- **Leadership and project management**: A number of Principal Investigators (PIs) and other team members reported stronger leadership skills, including project planning, coordination, budgeting, and accounting.
- **Science communication**: In this priority area, many teams reported enhanced skills, in communicating science to non-scientific audiences developed through specific training provided by AgriFoSe2030 through University of Nairobi and Kyambogo University, as well as through hands-on opportunities in the projects.

  Teams reported gaining important skills in synthesising evidence and then translating and communicating this into locally practical, applicable, and relevant knowledge for small holder

farmers. Of particular importance, some researchers highlighted learning about how to motivate and build self-belief among local stakeholders, especially regarding how to value and apply their experiential and local knowledge, in combination with science-based knowledge.

Researchers in some countries also worked alongside extension officers to create extension tools such as booklets, posters, and videos to share information from the research. This was facilitated by several training sessions aimed at increasing the capacity of researchers and extension officers to translate science into practice.

- **Stakeholder engagement**: Teams reported enhanced skills in strategic stakeholder analysis, how to conduct multistakeholder engagement processes and enhanced network-building skills. These skill sets have been crucial for building trust and effective collaboration with farmers, extension officers, and policymakers.

- **Theory of change (ToC) and monitoring, evaluation, and learning (MEL) tools**: Many teams highlighted stronger skills in using ToC and MEL tools for reporting and tracking progress. These were seen as key tools for tracking progress and systematically documenting activities, reporting, and planning for upcoming activities. The ToC training and MEL tools brought additional skills in situation analysis, needs identification, stakeholder engagement, and pathways mapping. Teams reported that the MEL tools assisted them to systematically carry out post-meeting reviews, after-action reviews, and project reporting. The ToC and MEL tools also helped teams with their project management - keeping ongoing activities on track, reflecting on how the project activities were building towards the project outcomes and identifying additional activities to achieve the expected outcomes. One team highlighted that the five MEL tools recommended by the AgriFoSe2030 programme are applicable for any research and development project, and so are a transferable skill set.

- **Strengthening the gender sensitivity of science translation projects**: Some teams working specifically on gender-sensitive projects, e.g. the gender and milk value addition project in Uganda, and the GenSens project on gender sensitive extension services, also in Uganda, reported valuable skills in enhancing gender sensitivity of their projects. For example, In GenSens, the team developed an innovative methodology using a visualisation scenario to catalyse insights into gender gaps. The scenario approach was effective in visibly and experientially drawing attention to gaps and prompting critical reflection among the team members and the stakeholders involved. In Burkina Faso, the parklands project team reported that they learned to support women's participation in debate and decision-making from their participation in innovation platforms.

- **Technical skills**: Across all projects, teams have acquired technical skills in systematic literature reviews, conducting surveys and interviews, using online tools to collect data, policy

briefs, and the application of various tools such as Rich Pictures, Miiro software, ToCs, MELs, and Change Stories.

Teams highlighted several skills that they feel require further development for future success. These include:

- **Cross-cultural sensitivity**: Some teams highlighted a need to develop an aptitude for understanding and working effectively across different cultures.
- **Participatory approaches**: Teams felt they could strengthen the use of participatory approaches to implement future work and projects, as this could create greater receptiveness, help to build trust and facilitate the involvement of local communities, local authorities, and other stakeholders.
- **Capacity building opportunities**: Teams highlighted that they would welcome ongoing opportunities for capacity building through trainings, short courses, and sharing experiences from other countries implementing similar projects. This would aid the development of diverse methodologies and approaches to address various issues that were being addressed across the programme regions.
- **Future collaboration in other projects**: A few teams noted that a strong bond had been created between their teams and teams across the AgriFoSe32030 programme, and this could offer a foundation for future projects.
- **Joint publications**: Engaging in further scientific publications of project outputs was highlighted as essential to capture experiences to date and to build future work.

4.3 How effective have the sampled projects been at catalysing these changes?

This section analyses the ways that the deep dive projects – goat improvement in Laos, digital extension services in Vietnam, cowpea and sorghum promotion in South Africa and resilient urban food systems in Uganda – contributed to the outcomes observed in their settings, alongside factors that enabled and limited effectiveness.

Factors that underpinned effectiveness in the projects

From the interviews with local stakeholders, several common factors emerged as drivers of success across the four projects.

Effective community engagement and participation was noted as the foundation for outcomes, with extensive trust building required to demonstrate that local needs would be addressed. For example, in

Laos, regular meetings with the smallholder farmers and local community groups helped encourage them to participate in the design and implementation of the project. This created a sense of ownership and responsibility, gaining the trust and active participation of villagers.

In South Africa, the willingness and the enthusiasm from the farmers and the involvement of extension officers was seen as key to creating momentum for the project. Interviewees noted that for many farmers in this remote location, this was their first time participating in such a project, so continuous dialogue was key in getting farmers to understand the need for co-creation and joint problem-solving. Some initial resistance was overcome through ongoing discussions and demonstrating the project's commitment to support their efforts. In one of the project sites, farmers were willing to invest their own resources, showing a high degree of commitment. The presence of a social scientist in the team was noted as important for introducing the project in an engaging way.

In Uganda, the positive attitude of smallholder farmers and other stakeholders towards the project, and their willingness to participate were noted as factors that strengthened the implementation of the project. Trust-building played a crucial role. At the outset, respondents felt that smallholder farmers did not have confidence in their own capacities, and there was extensive wariness of the power imbalances between them and the other stakeholders, especially politicians and governance actors. A stakeholder respondent noted that, by conducting separate meetings with smallholder farmers, technical personnel, and politicians, the team helped identify needs and build trust, laying the groundwork for subsequent multi stakeholder meetings.

Overall, **trust** played a crucial role in ensuring the success of the projects by fostering collaboration, active participation, and a sense of ownership among the stakeholders.

Strong commitment from wider stakeholders played an important role, as a result of project teams' efforts to engage and involve value chain and governance stakeholders in their settings. For example, in South Africa, extension officers were seen as establishing a positive impression and motivating support from various stakeholders, including local municipality officers and market representatives. Commitments to continue their support after the end of the project helped to build confidence. In Uganda, as mentioned, the team carefully built engagement with local officials, mayors, town clerks, Members of Parliament and key technical officers from municipalities in order to gain their commitment.

In Vietnam, respondents felt that the project effectively engaged across all levels, from the Department of Agriculture to district agricultural offices and commune-level officials, with coordination from the Agricultural Training Institute. Similarly, in Laos, interviewees felt that the project established effective collaboration between district authorities, NGOs, and local farmer groups. Respondents considered the project to be well-coordinated, effectively resourced, and aligned with local development plans, fostering long-term sustainability.

Effective training, knowledge exchange and capacity building were highlighted as key drivers of outcomes. For example, in Laos, respondents highlighted that the project successfully involved local farmers in training sessions and demonstrations, providing practical, hands-on training on improved goat-raising techniques such as health management, feeding practices, breeding techniques, housing improvements and sustainable husbandry practices. In Vietnam, the training aspects of the project were seen as key, given that the digital extension services are a recent introduction. Interviewees noted that the synthesis provided baseline knowledge, while training helped to build practical skills to this new area of digital extension services.

In South Africa, respondents highlighted how the training helped small-scale farmers to view farming not just as subsistence but as a source of income. Training was provided on sustainable management of their fields and efficient use of labour, which increased yields and reduced the investments needed. In Uganda, the training provided was highlighted by respondents as practical and hands-on, focusing on sustainable farming, urban farming, food handling, and knowledge sharing through exchange visits. Exchange visits for farmers were noted as a highly effective initiative, enabling them to learn from each other, share practical experiences and build confidence to adopt better practices.

A focus on market linkages and economic potential was also highlighted as a foundation for outcomes. Respondents in Laos felt that the establishment of connections with local and regional markets had potential to provide farmers with better selling opportunities and fair prices. This was motivating for the project participants. In South Africa, collaboration with a trading foundation ensured a buyer for the first crop of indigenous legumes, while links with a seed company provided farmers with dry bean seeds and other legumes, which had been challenging to obtain.

In Vietnam, the project arrived when the agricultural sector was still developing its guidance for digital extension services. By the project's close, it had helped to contribute to a change in attitude in farmers, who could perceive more clearly the economic benefits of using digital services.

Factors that limited success in the projects

From the interviews with local stakeholders, several common factors emerged as limiting effectiveness. These mainly arose from the context but nevertheless had to be navigated by the projects.

Respondents raised the challenge of resource constraints and the short duration of the projects, which they perceived limited success. Given the relatively short duration of all the projects, it is to be expected that local stakeholders would perceive this as a limitation. For example, in Laos, stakeholders felt that some marginalized groups or poorer households may have been excluded due to resource constraints, affecting the project's scope and ability to reach all interested farmers within the district. Respondents also felt that training needed to be sustained over a longer period to really embed new practices. This was echoed by respondents in Vietnam, where the short project timeline was perceived to limit its

reach to a wider group of stakeholders. In Uganda, respondents felt that while the project provided valuable training and knowledge, there was an expectation for more tangible support, such as funding for market stalls, inputs like seeds, and practical solutions for environmental challenges such as flood defences.

The reluctance of some stakeholders to adopt new practices and ways of working was flagged as a limiting contextual factor. Again, this was to be expected as most of the projects were not initially demand-led but had to catalyse interest and demand from stakeholders in their initial phases, especially smallholder farmers. For smallholders, given their very limited resources, trying out new practices and technologies involves risks to harvests and livelihoods. Project teams had to carefully build trust, understand needs and reduce the risk to smallholders. For example, in Vietnam, respondents highlighted how, even though the project helped farmers to see the economic opportunities in using digital services, farmers remain cautious about using digital platforms. Large-scale producers with more education are more willing to use digital platforms, but even they worry about fraud, particularly older farmers.

Political changes and staff movements in the governance entities also posed problems for the projects. This is a recognised challenge in multi-stakeholder projects. The importance of commitment from a broad array of stakeholders was highlighted earlier, but it takes effort, time and resource to sustain relationships. Officials and politicians often move onto new posts and relationships have to be bult up again with new incomers who likely have other priorities. For example, in Uganda, a supportive local municipal official moved out of post, and the project had to engage the new leadership, prompting it to develop relationships with multiple focal people to help create a broader institutional base of support for the project.

Environmental and other external factors like Covid-19 pandemic also created challenges to implementation and limited outcomes. Over the period when the projects were being implemented, all the project settings experienced disruptions from Covid-19. For example in Laos, movement restrictions arising from Covid-19 restrictions made it difficult to travel to the villages, and online engagement was seen as less effective.

Extreme environmental events, powered by climate change, also had an impact over the project periods. For example, the projects in Uganda and South Africa suffered set backs by extreme rainfall, floods, as well as drought and diseases, although these also contributed to a more open attitude among farmers to consider other sustainable practices that would help build their resilience to environment shocks.

Overall, the projects were effective in mobilising a range of drivers to promote outcomes, while navigating some key limiting factors in the context. The limiting factors highlight the need for flexible

project funding to enable project to respond to dynamic local conditions, and particularly the importance of allocating resources to maintain stakeholder relationships and engagement.

5. Conclusions, lessons and recommendations for future projects

The aims of the review were to:

- Capture and synthesise the outcomes that have emerged as a result of the AgriFoSe2030 change projects and map these to the programme level ToC.
- Understand the potential for change trajectories to be sustained and/or expanded locally.
- Understand how effective the projects have been at producing these changes
- Generate lessons to inform the design of the next phase of the programme.

The reported outcomes reviewed illustrate good progress along the programme ToC, providing a rich range of examples of more deep-seated, structural changes that have yielded practical benefits for smallholder farmers and their communities in the project settings. These outcomes are especially notable given the relatively short duration of the projects – from 18 months to three years – and represent good foundations for change to be sustained.

Key enabling factors have been an effective project model that combines scientific knowledge with collaborative processes involving small holder farmers to translate this into practical applications to improve practices and enhance livelihoods. Alongside this, the focus on catalysing the agency, confidence and skills of small-holder farmers, especially women farmers, to form groups and engage with value chain actors and in local governance processes represents an important rebalancing of power relationships. These outcomes represent a key step towards small-holder farmers taking their place as valued and profitable producers within sustainable food systems, able to engage with broader economic opportunities than previously.

The engagement of a wider network of stakeholders via the projects has helped create the enabling conditions for outcomes to be sustained and scaled through policy and regulatory support, and more inclusive access to markets to be established for longer term benefits to be realised for small-holder farmers.

A key element in the AgriFoSe2030 programme theory of change is the enhancement of researchers' own capacities to continue to translate science into inclusive and evidence-based policy and practice innovations to benefit small-holder farmers. The capacity enhancements that researchers have reported demonstrate that this objective has been met. This means that there is now a strong cohort of AgriFoSe2030 researchers able to continue to promote beneficial change for small-holder farmers within their own settings.

5.1 Lessons and recommendations for future projects

The main lesson for future projects is that the core model of **science translation combined with co-development of applied solutions with small-holder farmers and stakeholder mobilisation** has been proven effective at catalysing practical change and benefits. Within that frame, the review identifies six ways that this model can be enhanced.

Lesson 1. Sustainable change requires greater time and effort to really embed.

Longer project durations would enable important initial scoping, mapping of contexts and needs assessments to support more tailoring and a deeper engagement with local stakeholders. Projects could also provide support to change processes over a longer period to help them to embed. A broader scope would enable teams to engage in a more holistic way in food systems, landscapes and value chains.

Recommendation: **Design longer projects, with more resources and broader system scope, while maintaining a flexible and responsive approach.**

Lesson 2. Participatory processes have proven essential in the projects to co-develop solutions with small-holder farmers and other stakeholders, building trust and local ownership for sustainability.

A number of researchers identified a need to continue to build their skills in participatory approaches. Participatory processes are also essential for promoting inclusion, recognising different perspectives and lifting local knowledge as a form of expertise. Strengthening skills in this area would help to catalyse the agency of marginalised groups such as women, young people and small-holder famers themselves.

Recommendation: **Continue to prioritise collaboration, while strengthening skills in participatory approaches as key drivers of outcomes.**

Lesson 3. Projects that intentionally addressed power imbalances and created spaces for equal participation across stakeholder groups helped to catalyse the agency small-holder farmers and their communities, strengthening their resilience and self-reliance in relation to other actors.

This highlights that building skills in project teams to enhance gender sensitive approaches and promote inclusion and equity are not just ethically important but in themselves catalyse pathways to long-term change.

Recommendation: **Continue to address power imbalances, while strengthening capacities for gender-sensitive approaches and social inclusion as catalysts for change.**

Lesson 4: Projects that successfully mobilised broad stakeholder networks, e.g. policy and decision makers helped to embed the involvement of small holder farmers in decision making, support and scale new practices and innovations.

There is potential to engage larger institutional players, and broader range of stakeholders in markets and value chains in future projects to support system-wide shifts.

Recommendation: **Continue to engage a wide array of stakeholders, and allocate sufficient resources to build a broader institutional network across food systems and value chains.**

Lesson 5: Small-holder farmers were more likely to engage in projects if they could see the economic benefits and manage the risks of shifting their practices. Young people were seen as more likely to engage if there was a clear emphasis on enhancing economic opportunities and creating a viable future livelihood. Future projects should consider how to build in a central focus on income generation and improved market access, including access to the tools and technologies needed (e.g. digital services, connectivity, transport).

Recommendation: **Expand the focus on livelihoods, market linkages and economic benefit.**

Lesson 6. Science translation for supporting small-holder farmers is still an emerging field and skill-set in Africa and Asia, in need of further development.

Researchers highlighted their interest in knowledge exchange and peer learning from others in other regions to strengthen their own capabilities for science translation. As this is an emerging field and scientific skill set in Africa and Asia, there is also a keen interest to expand the field of science translation in Africa and Asia through creating formal academic publications from the work done in projects. As the AgriFoSe2030 researchers come from a range of disciplines, support for publications would be required from a future programme.

Recommendation: **Continue to strengthen peer learning and exchanges between AgriFoSe2030 teams, while formalising and consolidating learning through publications to build the field of science translation.**

Annexes:

1. List of projects reviewed

- Challenge 1: Safe and nutritious food – Small-holder Goat production in Laos
- Challenge 2: Climate resilient landscapes - Promotion of sorghum-cowpea rotations in smallholder farming systems in South Africa for climate change adaptation
- Challenge 3: Digital Extension Services – Digitalization of extension services in South-east Asia – Vietnam
- Challenge 4: Rural Urban Food Systems: Resilient urban food systems, Uganda.

2. Stakeholder interviews overview, by type and number

Project	Stakeholder type
Digital extension services, Vietnam	Extension stakeholder
	Senior extension stakeholder
	Senior extension stakeholder
	Principal Investigator
Total	4 respondents
Goat improvement project, Laos	Provincial government stakeholder
	National government stakeholder
	Farmers' representative stakeholder
	Principal Investigator
Total	4 respondents
Cowpea sorghum, South Africa	NGO stakeholder
	Women farmers association representatives x 3

	Principal Investigators x 2
Total	6 respondents
RUFS Uganda	Local government stakeholder
	Principal Investigators x 4
Total	5 respondents

3. Approach paper

Please see separate file.