

# AgriFoSe2030

Agriculture for Food Security 2030

Translating Science Into Policy & Practice

## Rooted in practice: 17 success stories of science making a difference

2018 – 2024



This report was compiled by the AgriFoSe2030 team, led by Elisabeth Rajala (Programme Director, SLU) and Sofia Boqvist (Deputy Programme Director, SLU), with support from Ivar Virgin, Selorm Kugbega, Brenda Ochola, Silvija Marcinkevičiūtė (Communications and Engagement Officers, SEI), Agnes Bondesson (Communications Officer, SLU), Isabel Vogel (MEL Consultant), Heather Mackay (Swedish Scientific Mentor, LU), Veronica Brodén Gyberg and Madelene Ostwald (Swedish Scientific Mentors, LiU). Contributions were also provided by AgriFoSe2030 researchers across partner countries in sub-Saharan Africa, South and Southeast Asia.

The synthesis of narratives from AgriFoSe2030 project reports and programme evaluation documents was led by Selorm Kugbega, Brenda Ochola, and Lovisa Hast (SEI Intern). All photos in this report were taken by members in the different projects.

## The AgriFoSe2030 Programme

The AgriFoSe2030 programme assists countries in sub-Saharan Africa and South East Asia to strengthen their capacity to synthesize and translate robust scientific evidence into policies and practices. These aim to accelerate the transition toward more sustainable food systems and contribute to improved food security. By utilizing a knowledge co-creation approach, the programme brings together a network of researchers, practitioners, and policymakers to develop context-specific solutions that are grounded in local knowledge and expertise.

Within the period covered by this report (2018–2024), AgriFoSe2030 aligned its workplan to focus on sustainable agriculture production and food security. This work was then organized into four solution-oriented “Challenge areas” identified in consultation with partners in sub-Saharan Africa, South and South East Asia. They include:

1. Improving access to safe and nutritious food
2. Agricultural productivity and ecosystem functions
3. Science-based innovation and extension
4. Smallholder agriculture within transforming food systems

Within each challenge, there were approximately four illustrative change projects showcasing practical science translation processes for addressing a range of issues within agriculture and sustainable food systems. This report highlights some of the impacts in all 17 change projects under each of the four challenge areas listed above. The detailed compendium of impacts is available [here](#).

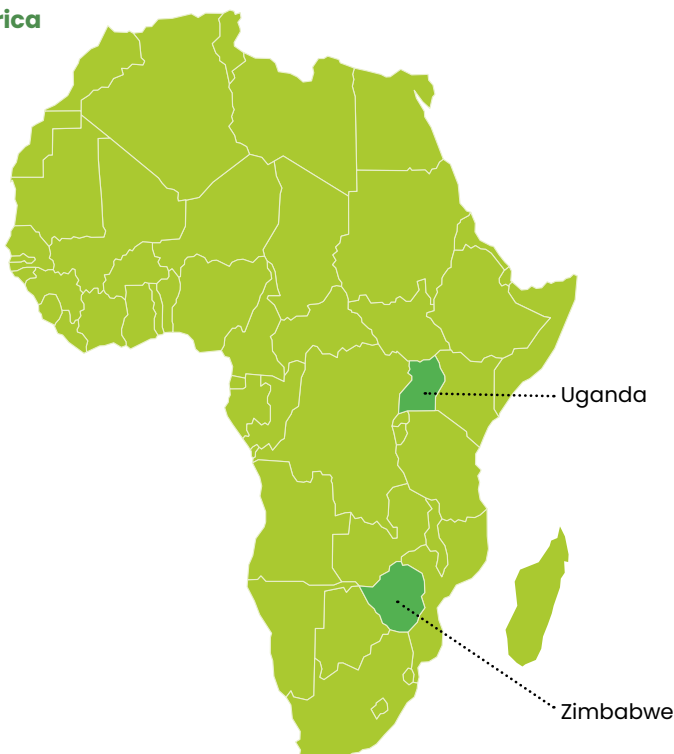
# Challenge 1

*Improving access to safe and nutritious food for smallholder farmers*

## Projects:

- **Improving goat health, productivity, and market access for smallholder farmers in Laos**
- **Empowering women and youth through safe insect production and market growth in Zimbabwe**
- **Enhancing milk safety and value chains through gender-responsive practices in western Uganda**
- **Advancing sustainable feed and rural livelihoods through BlackSoldier Fly innovation in Vietnam**

**Africa**



**South and Southeast Asia**



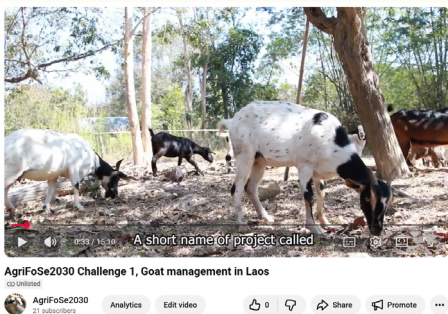
# Improving goat health, productivity, and market access for smallholder farmers

**Project title: Smallholder goat production in Laos – improving quality of extension services and access to markets**

The project improved goat health, productivity, and market access by strengthening extension services and farmer knowledge. As a result, smallholder farmers adopted better husbandry and disease management practices, leading to higher-quality products, improved incomes, and stronger links between farmers and local markets.

**Location:** Vientiane capital and Bolikhmaxay province, Laos PDR

**Duration:** 2021–2024



[Watch the video](#)

Smallholder goat farmers in Laos often face herd losses due to poor management and nutrition, limiting their ability to meet market standards. This project strengthened extension services and market access through trainings on improved husbandry, health care, fodder production, and pen construction. Practical skills reached over 1,000 participants, with 129 farmers actively trained across 13 villages. 11 farmer field schools and demonstration farms were established, leading to rehabilitation of 17 hectares of pasture, construction of 37 improved pens, investment in better breeds, and health interventions benefiting 2,722 goats. Market demand for higher-quality goat meat has grown, with new links to restaurant buyers.

Digital platforms were created to connect farmers and traders. Capacity was also built among 76 extension staff, ensuring continued knowledge dissemination. Overall, farmers report improved productivity and income through healthier animals that meet market requirements. The project has also catalyzed peer-to-peer learning by forming new farmer groups, strengthening community cohesion and fostering a culture of continuous knowledge sharing.

## Stories from the field:



### Goat management in Laos

Smallholder goat farmers in Laos have adopted new goat management practices including approaches to fodder and animal health care. This change is supported by the AgrifoSe2030 project through emphasizing knowledge sharing, skills-building, and mentorship.

[Full change story](#)



### Boosting smallholders to reach beyond food security

As a result of prevailing market, demographic shifts and extreme environmental conditions, global communities are attempting to enhance food security through different sustainable agrifood system transitions.

[Read the blog post](#)

“This programme of translating sciences to practices is a crucial investment in our national agricultural strategy. By equipping our extension officers with targeted technical skills, like those for productive goat farming, we are directly empowering our farmers to increase their output and maximize economic benefits. – former Director of Department of Agricultural Extension and Cooperatives.”

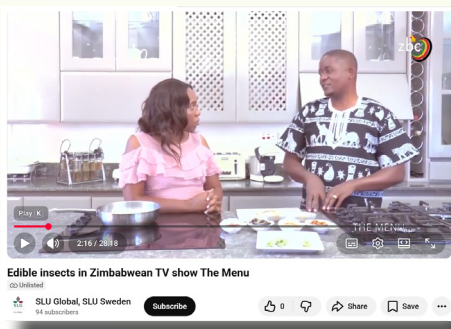
# Empowering women and youth through safe insect production and market growth

**Project title: Improving market access and scaling up trading of safe and nutritious edible insects by women and youth in Zimbabwe**

This project supported women and youth to scale up safe insect production and trade, improving food safety practices and market participation. Impact included increased incomes, enhanced food safety awareness, and recognition of edible insects as a viable nutrition and livelihood option.

**Location:** Zimbabwe - Chinhoyi town

**Duration:** 2019-2024



[Watch the video](#)

Edible insects are an important, affordable protein source in Zimbabwe, but harvesting and marketing have been informal, with food safety risks and limited awareness of nutritional benefits. This project strengthened sustainable sourcing, safe processing, and value addition while empowering women and youth as key market actors. Training supported insect collectors and traders in farming, handling, storage, and innovative product development, backed by nutritional and safety analyses.

A model insect farming facility at Chinhoyi University trained 120 participants, while three formal trading groups were established and linked with regulators, helping formalize the sector. A dedicated edible insects market was created in Chinhoyi through donated land, providing the district's first specialized trading space. National recognition grew, with a steering committee formed to develop food standards and the government officially prioritizing edible insects research in 2025. Around 3,000 women and young people gained skills in sustainable enterprise development, leading to new value-added products, award-winning cookbooks, expanded restaurant demand, premium prices for collectors, wider public awareness through media and playing a lead role in planning Africa's first edible insects conference.

Overall, three major insect collection and trading communities have been empowered to scale-up their businesses and champion insect stewardship, safe handling and value addition in their localities.

## Stories from the field:



## Edible insects for food security

The world's population is expected to reach 8.6 billion by the year 2030 and this requires increasing food supply to meet expected demands. In 2022, FAO estimated that 827 million people are affected by hunger and malnutrition while 2.3 billion people are food insecure.

[Full change story](#)



## The project in media

- [Cookbooks, television show and app create demand for insects](#)
- [Edible insect project broadcasted on national television](#)



“I never thought I'd eat crickets but having them in a product we are used to consuming really won me over. It's a good way to introduce people to edible insects.”- A customer at the Zimbabwe Agricultural Show

# Enhancing milk safety and value chains through gender-responsive practices

**Project title: Gender-based approaches for improving food safety, value addition and marketing in livestock systems in western Uganda**

The project strengthened milk safety, value addition, and marketing through gender-responsive training and practices. Impacts included reduced contamination risks, increased household incomes, and greater participation of women in decision-making, contributing to improved food safety practices along local dairy value chains.

**Location:** Kiruhura district, western Uganda

**Duration:** 2021-2024



[Watch the video](#)

In Uganda, women play major roles in dairy farming but face structural barriers and patriarchal norms that limit their control over cattle, income, and participation in profitable activities such as milking and marketing. Seasonal milk surpluses also lead to spoilage due to inadequate cooling and reliance on traditional processing methods that reduce safety and quality. This project strengthened women's participation in safe milk production, value addition, and market access through targeted trainings, stakeholder engagement, and the formation of women's farmer groups and Village Savings and Loans Associations (VSLAs).

Women gained skills to produce higher-value products such as yoghurt and cheese with longer shelf lives, enabling sales in local markets and in cities like Kampala. Households reported increased incomes, and one women's group established a milk processing facility with marketing outlets and equipment for storage. The project also shifted gender dynamics: men's initial resistance eased as they recognized the benefits of household welfare, leading to greater trust, support for women's economic roles, and growing male interest in investing in milk value addition especially during periods when milk prices are low.

## Stories from the field:



## AgriFoSe2030 inspires women's group in Kinoni Sub-County, Uganda

Due to the poverty and food insecurity challenges among women in Western Uganda, the AgriFoSe2030 programme initiated a project led by Dr. Judith Nagasha from Kyambogo university to train women on value addition and marketing of milk products.

[Full change story](#)



## The project in media

- [How to turn Uganda's milk into cosmetics](#)
- [AgriFoSe2030 researcher Judith Nagasha wins the VUB Social Entrepreneurship Challenge](#)
- [AgriFoSe2030 project in Western Uganda supports capacity building for women in the milk value chain](#)

“This project has given me development ideas and opportunities that I had never thought about; it's better I participate so that I improve the welfare of my family and the community at large.- Male community member

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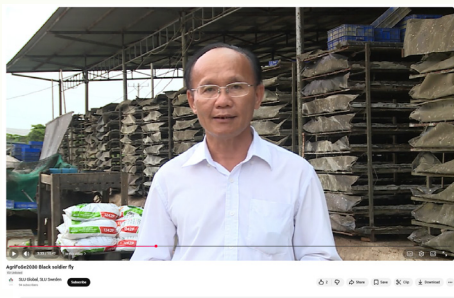
# Advancing sustainable feed and rural livelihoods through Black Soldier Fly innovation

**Project title: Application on Black Soldier Fly (*Hermetia illucens*) rearing technology as a tool to improve environment safety, sustainability and rural development in South of Vietnam: Emphasis on aquaculture production**

This initiative showed how Black Soldier Fly rearing can boost feed sustainability, reduce environmental impact, and support rural livelihoods, while advancing circular economy and low-carbon aquaculture policy goals.

**Location:** Vietnam (Ho Chi Minh City, Long An, Đồng Nai, and Tiền Giang provinces)

**Duration:** 2022 – 2023



[Watch the video](#)

Vietnam's aquaculture sector faces rising feed costs and heavy dependence on imported fishmeal, increasing financial risks for farmers and vulnerability to global markets. At the same time, large volumes of organic waste remain underutilized, contributing to pollution and emissions. This project introduced Black Soldier Fly (BSF) larvae as a low-cost, sustainable protein source for aquafeed and frass as organic fertilizer, supporting circular agriculture in Southern Vietnam. Through surveys, trainings, and demonstration pilots, 811 participants gained hands-on skills in BSF rearing, waste-to-feed conversion, and integrated BSF-fish farming systems.

Adoption improved waste collection and recycling practices, reducing unmanaged waste and supporting cleaner farm environments. Extension officers and local authorities strengthened their capacity to guide farmers, while farmer groups and stakeholder networks enhanced peer learning and long-term support for scaling BSF technology. Communication tools, including a widely used training video featured on Ho Chi Minh City Television, boosted public awareness. Households reported lower feed costs and new income opportunities from larvae and frass sales. The project also helped catalyze a major government-supported low-carbon BSF initiative (2024–2026), highlighting BSF's growing role in sustainable aquaculture and climate-smart development.

## Stories from the field:



## Visiting Nong Lam University to strengthen institutional collaboration

Part of the AgriFoSe2030 team visited one of the collaborating universities, Nong Lam University in Ho Chi Minh City, Vietnam, to meet teams from supported projects. [Read the article](#)



“Before the training, I didn't know how valuable our daily waste was. Using BSF, we now turn kitchen and farm residues into feed and fertilizer. It cuts costs and keeps the farm cleaner. – Farmer, Tan Hung District, Long An Province”

“BSF aligns with our new waste-to-resource strategy. It addresses methane reduction, feed autonomy, and rural income- three priority areas for 2025–2030 provincial planning. – Provincial Planning Officer, Mekong Delta Region”

# Challenge 2

## *Agricultural productivity and ecosystem functions*

### **Projects:**

- **Strengthening resilient farming through agroecological practices and local input in Burkina Faso**
- **Improved rice straw management for climate-smart agriculture and livelihoods in Vietnam**
- **Promotion of sorghum-cowpea rotations for climate-resilient smallholder farming systems in South Africa**
- **Participatory analysis of intensification pathways for sustainable coffee-banana systems in Uganda**
- **Restoration of degraded rangelands for improved productivity and conflict-sensitive outcomes in Kenya**

### **Africa**



### **South and Southeast Asia**



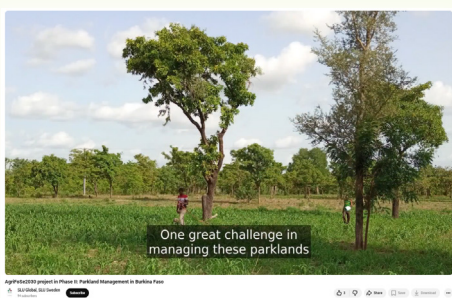
# Strengthening resilient farming through agroecological practices and local inputs

**Project title: Agroecological practices for restoring parklands – co-producing science-based skills and knowledge for increased agricultural productivity**

Farmers adopted agroecological practices using local inputs, improving soil fertility, yields, ecosystem health, and resilience while reducing fertilizer dependence.

**Location:** Nobéré, Saponé and Yako communes, Burkina Faso

**Duration:** 2021-2024



[Watch the video](#)

In Burkina Faso, agroforestry parklands vital for soil fertility, biodiversity, and climate resilience have faced degradation from agricultural intensification and climate change. This initiative engaged 1200 smallholder farmers, including women and youth, to scale up agroecological practices that restore soils, regenerate trees, and reduce reliance on chemical inputs.

Through innovation platforms, demonstration plots, radio programmes, and 72 village meetings, farmers strengthened their capacity to transition to sustainable parkland management. Women increased incomes by applying new skills to improve the shea value chain, producing higher-value products that also incentivize tree conservation.

Cross-institutional collaboration improved sustainable land management strategies, while newly formed agroecological cooperatives now ensure continued knowledge sharing, market access, and long-term resilience across communities. Each municipality selected farmer-trainers, linked to extension and local government officers, who will continue training producers on agroecological practices, ensuring ongoing knowledge sharing and innovation within communities.

## Stories from the field:



### Putting parklands at the frontline for food security in Burkina Faso

Parklands play a key role for the livelihoods of rural people in Burkina Faso. When managed well, they generate food, fodder, medicine and several ecosystem services. But the parklands are degraded, and food insecurity rises.

[Read the article](#)



“Thanks to the project’s activities, we are convinced that if we do not apply agroecological practices, especially soil and tree preservation, our descendants will not have enough to eat and will suffer. – Farmer in Bakago, Nobéré Commune”

“We have been working with the project for three years, and we really appreciate it because it allows us to exchange our experiences among the three communes (Saponé, Nobéré, Yako). We invite all stakeholders to adopt agroecological practices, which are beneficial for health, unlike the chemical products that are commonly used. – Member of Weogo-la-viim association, Nobéré Commune”

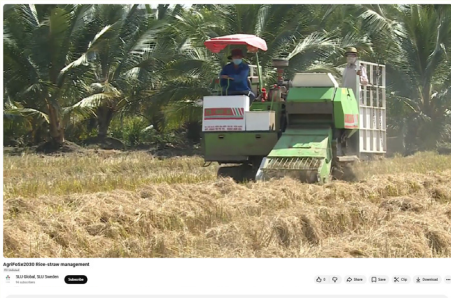
# Improved rice straw management for climate-smart agriculture and livelihoods

**Project title: Sustainable rice straw management for improving farmer livelihoods and low environmental footprint in rice based production systems**

Farmers improved rice straw management, reducing burning and pollution, enhancing soil quality and livelihoods, and informing climate-smart rice policies.

**Location:** Tien Giang and Long An Provinces, Vietnam

**Duration:** 2022-2023



[Watch the video](#)

In Vietnam's Mekong Delta, widespread rice straw burning has contributed to severe air pollution and resource waste. This project transformed rice straw from waste into value by introducing mechanized collection, improved livestock feed technologies, mushroom production, and composting systems. A total of 153 farmers adopted treated straw feed, improving year-round livestock nutrition, while trained mushroom producers increased productivity, income, and formed a registered producer association. Composting practices enhanced soil health and reduced reliance on chemical fertilizers.

Extension workers strengthened participatory advisory skills, and rice straw management recommendations were integrated into district training programmes. Nationally, improved straw management is now recognized as a key component of Vietnam's low-emission rice strategy, contributing to climate mitigation, improved livelihoods, and more sustainable rice systems.

## Stories from the field:



## Scientific article

**Feed intake and daily weight gain of cross-bred Sindhi cattle fed fermented rice straw and basal diet using soybean meal and dried brewer's malt**

Published: December 2024, *Phuong T B L, Khanh M Tran,*

*Son V N, Hai T Nguyen, Hang T T Le and Khang N Duong*

[Read the scientific article](#)

“ We are adopting a new technique, promoted by the Research and Technology Transfer Centre and the District Extension Center, to turn rice straw into fermented silage feed. Through this widespread model, local Extensionists and Farmers' Association are providing us with the necessary training and support. This is a very effective way to manage our feed costs. By utilizing fermented rice straw, we can now secure a practical source of nutrition for our livestock, which is a big help given the sharp rise in commercial feed prices. - Local farmer in Thanh Tri Village, Go Cong Tay District, Tien Giang Province

”

# Promotion of sorghum-cowpea rotations for climate-resilient smallholder farming systems

**Project title: Promotion of sorghum-cowpea intercropping systems in smallholder farming systems in South Africa for climate change adaptation**

The project promoted climate-resilient crop rotations, resulting in improved soil fertility, diversified production, and increased resilience to climate variability.

**Location:** South Africa (Manzawayo village in Nongoma municipality, Zululand district, Kwazulu Natal Province; and Clau clau village in Mbombela municipality, Ehlanzeni district, Mpumalanga province)

**Duration:** 2022-2023



[Watch the video](#)

In South Africa, climate change threatens smallholder crop productivity and livelihoods. This project strengthened resilient sorghum-cowpea rotation systems through a multi-stakeholder approach linking farmers, extension officers, researchers, and local government. Farmers strengthened skills, diversified cropping systems, and expanded sorghum production, with cooperatives gaining market recognition and selling produce at competitive prices. Innovation platforms improved collaboration, amplified farmers' voices, and strengthened research-extension linkages. Extension officers increased technical capacity and engagement, while local government and private sector actors provided seeds, tillage, and business support. Collaborating smallholder groups namely Fukuda cooperative and Clau Clau farmers expanded sorghum production to 0.75 and 1 hectares respectively with the Fukuda cooperative selling up to 130 kilograms of sorghum in 2023.

Overall, the project enhanced farmers' technical skills, fostered collaboration among diverse stakeholders and strengthened market and resource access. This contributed to increasing smallholder resilience, soil fertility, water efficiency, income generation, and sustainability in the face of climate change. Farmers now possess the knowledge, motivation, and platforms to continue improving sorghum and cowpea production, contributing to broader food security and agricultural development goals.

## Stories from the field:



### Sorghum - A climate smart crop

Sorghum production ignites hope for profitable and climate smart agricultural production in Manzawayo village, South Africa.

[Full change story](#)



“ AgriFoSe2030 has empowered us to have a voice and work together as farmers to seek solutions to our problems. – Clau Clau farmer ”

“ Thanks to AgriFose2030 project, we now have a reliable market for our sorghum and hope to grow our cooperative to a business. – Fuduka cooperative member, Nongoma ”

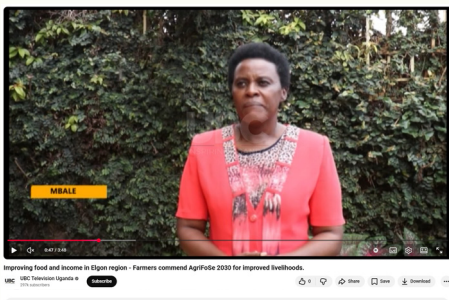
# Participatory analysis of intensification pathways for sustainable coffee-banana systems

**Project title: Participatory analysis of the conventional-agroecological intensification continuum for increased productivity and sustainability in the coffee-banana systems**

Through participatory analysis, farmers and stakeholders identified sustainable intensification pathways that balanced productivity and ecosystem health.

**Location:** Mt Elgon region of Uganda - Sironko and Kapchorwa districts

**Duration:** 2022-2024



[Watch the video](#)

In Uganda's Mt. Elgon region, climate change, land pressure, and limited agronomic support constrain productivity in coffee-banana farming systems. This project strengthened sustainable intensification by building multi-stakeholder collaboration among farmers, extension agents, financial institutions, traders, and policymakers.

Through training, demonstration plots, and community consultation hubs, 463 farmers and 1756 school participants gained knowledge on climate-resilient production, gender-responsive farming, and value chain opportunities. Farmers improved technical skills, resource efficiency, and market access, enabling higher coffee-banana productivity, better income generation, and enhanced food and nutrition security. Extension and value chain actors are now more responsive to farmer needs, supporting long-term sustainable agriculture, youth awareness, and climate-resilient livelihoods in the region.

## Stories from the field:



## Summary of the project

This project leverages on partnership. The project developed platforms in two districts where players from all levels in the coffee-banana value chain were brought together and offered equal opportunity in experience and knowledge sharing, and dissemination.

[Read the article](#)



“ I have a small portion (land) but see a big change in that, the bunch is big and yield is promising; and I have completed my studies. - Female Farmer ”

“ Is there another chance for training, please we are very ready; one day we had a meeting at the sub county, and the leadership was referring to the community to come and learn from my garden.- Farmer, Sironko district ”

# Restoration of degraded rangelands for improved productivity and conflict-sensitive outcomes

**Project title: Science-based and co-produced transformative rangeland management practices – how to deal with encroachment of unwanted woody species (TRAMAP Kenya)**

The project restored degraded rangelands by addressing woody encroachment, leading to improved vegetation cover, reduced soil erosion, and better livestock productivity. These changes also reduced tensions between pastoralist and farming communities, demonstrating conflict-sensitive environmental restoration.

**Location:** Samburu, Kenya

**Duration:** 2021-2024

In Samburu, Kenya, climate change, invasive plant species, and rangeland degradation threaten pastoral and agro-pastoral livelihoods. Camels were recently introduced in the county as more adaptive to extreme heat and flooding effects of climate change due to consistent loss of cattle herds. However, their management in these new conditions including feeding vis-a-vis proliferation of invasive plant species is lacking. This project strengthened community resilience by building practical skills in sustainable rangeland and camel husbandry management through co-learning and multi-stakeholder collaboration. 22 community trainers and veterinary personnel improved disease detection, animal welfare, and livestock management, while 40 trainers were equipped in commercial fodder production.

The co-produced camel production and welfare handbook improved extension services and training delivery. Farmers adopted invasive species control, soil and water conservation, and drought-tolerant fodder production, supporting ecosystem restoration, reducing grazing conflicts, improving milk productivity, and strengthening early warning systems. The project enhanced knowledge exchange among communities, government agencies, and technical partners, contributing to sustainable pastoral livelihoods and climate resilience.

“ I embraced superior camel breeds, learned husbandry skills and now use nutritious camel milk both for income and as a vital substitute for scarce vegetables in semi-arid Wamba.  
- Female camel farmer in Samburu East ”

## Stories from the field:



### The native land grabber

The *Vachellia reficiens* is a native species in most part of Samburu East. The local community described *V. reficiens* as a 'land grabber' because where the species grow, there are no pastures for livestock and wildlife and creates soil surface crusting. [Read the article](#)



### TRAMAP boosts livestock management and environmental conservation

The project "TRAMAP" has been a successful collaborative effort between pastoralists, agro-pastoralists, scientists, and local authorities in Samburu County, Kenya, and shown promising results to empower agricultural productivity and develop sustainable rangeland management. [Read the article](#)

“ Thanks to the TRAMAP camel husbandry training, I can now diagnose diseases correctly, seek veterinary support, and I have boosted my milk yields” - Female camel farmer in Samburu East ”

# Challenge 3

## *Science-based innovation and extension*

- **Training village-based agricultural agents in gender-sensitive extension services (GenSens) in Tanzania**
- **Agricultural biologicals for safer pest management in Ethiopia, Kenya and South Africa**
- **Bridging the gap between research, extension and smallholder farmers in Kenya, Sri Lanka and Laos**
- **Digital extension expanding access to timely science-based advice in Cambodia, Philippines and Vietnam**

### Africa



### South and Southeast Asia



# Training village-based agricultural agents in gender-sensitive extension services

**Project title: Training and empowering village-based agricultural agents to be more gender sensitive (GenSens)**

Extension agents improved their capacity to deliver gender-responsive and participatory services, resulting in greater inclusion of women farmers.

**Location:** Ilonga Agricultural College and Lushoto District, Tanzania

**Duration:** 2023–2024

In Tanzania, gender bias within agricultural extension systems has long limited women farmers' access to knowledge, resources, and decision-making power. Working with the Ministry of Agriculture Training Institute (MATI) in Ilonga and Lushoto District, this project moved beyond "equal numbers" approaches to embed meaningful gender responsiveness in extension training and practice.

Reaching 101 participants, the project sparked deep mindset shifts: women reported greater confidence and visibility, while male participants acknowledged their role in reinforcing inequality and committed to change. Tutors and extension officers gained practical tools, including a Gender Gap Visualization exercise, transforming abstract gender concepts into actionable teaching strategies.

Crucially, the Ministry of Agriculture recognized the model as a missing link in operationalizing gender equity and showed interest in scaling it nationally in 2026—positioning the project to reshape how future extension officers serve both women and men farmers across Tanzania.

“My husband and I will work together to eliminate gender norms that oppress women and encourage our community to change these norms for inclusive development.” - Female farmer and group leader

## Stories from the field:



### Small-scale interventions ignite powerful shifts for Gender Transformation in Tanzania

In Tanzania, women form the majority of agricultural labor, yet they face systemic barriers that hinder their productivity and decision-making capacity. Cultural norms, gender biases, limited literacy and inadequate access to gender-sensitive agricultural extension services have long hampered female farmers.

[Read the article](#)



“As a man, this training has opened my eyes. I pledge that, from today, I will ensure responsibilities are equally shared among my sons and daughters at home.” - Male farmer

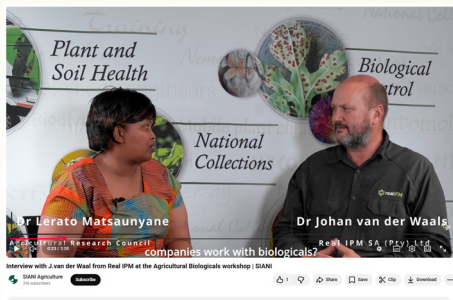
# Agricultural biologicals for safer pest management in sub-Saharan Africa

**Project title: Agricultural biologicals - Identifying hurdles of use of biologicals by a Knowledge, Attitude and Practice (KAP) analysis of stakeholders in sub-Saharan Africa**

The project promoted biological alternatives to chemical inputs, leading to safer pest management, reduced environmental harm, and improved farmer awareness.

**Location:** Ethiopia, Kenya and South Africa

**Duration:** 2021–2023



[Watch the video](#)

This project catalyzed a policy and practice shift toward sustainable agricultural biologicals in Ethiopia, Kenya, and South Africa. By mapping knowledge, attitudes, practices, and regulatory gaps across the value chain, it exposed critical barriers limiting adoption and sparked high-level policy dialogue.

In Ethiopia, advocacy contributed to fast-track registration processes for bio-pesticides and bio-fertilizers and the development of dedicated directives. In Kenya, engagement with regulators accelerated draft policies and legislative reforms to ease registration and use. In South Africa, the project influenced discussions on adapting efficacy requirements to better suit biologicals.

Beyond policy reform, the project raised farmer and agro-dealer awareness, strengthened institutional collaboration, and highlighted the urgent need for better science communication. It also laid the foundation for an African Agricultural Biologicals Network and unlocked major follow-on funding (InSALSA and AgBio4SSA projects), positioning the initiative as a regional driver of evidence-based reform, innovation, and sustainable intensification across sub-Saharan Africa.

## Stories from the field:



### Making agriculture safer with biologicals

By arbitrarily applying conventional pesticides on crops and wearing poor or no protective equipment when using these chemicals have large impacts on human health and the environment. This is why there is a need for safer alternatives. [Read the article](#)



### Possibilities and hurdles for biological plant protection

Biologicals are potential alternatives to conventional agrochemicals to manage crop pests and pathogens. Their use is steadily increasing in developed countries, leading to more environmentally sustainable plant protection methods. However, there is limited information on the status of biologicals in sub-Saharan Africa.

[Read the article](#)

“The future of agricultural biologicals in Kenya is bright. There are huge opportunities to integrate them into crop production to enhance food safety.  
- Agrodealer

”

# Bridging the gap between research, extension, and smallholder farmers

## Project title: Functions in extension service pathways – Kenya, Sri Lanka and Laos

This comparative analysis strengthened understanding of how extension systems function in practice, informing reforms that improved coordination between researchers, extension services, and farmers.

**Location:** Kenya, Sri Lanka, Laos

**Duration:** 2022-2024

The project generated policy- and practice-relevant insights that are reshaping how agricultural extension is understood and delivered in Kenya, Sri Lanka, and Laos. The project engaged over 1,100 stakeholders including policymakers, researchers, extension officers and farmers. By documenting system strengths and weaknesses and facilitating dialogue, it promoted more participatory, coordinated, and learning-oriented extension approaches.

The comparative analysis revealed persistent institutional constraints, including limited funding, staff shortages, weak coordination, and fragile links between research, policy, and practice. Country-specific challenges—such as bureaucratic systems and high farmer-to-extension ratios in Sri Lanka, and resource and communication gaps in Laos—further limited effectiveness. The project strengthened collaboration among stakeholders and generated evidence on knowledge flows and institutional bottlenecks, informing more coordinated and evidence-based extension planning. It also highlighted that effective reform requires not only technical improvements but stronger social and institutional dynamics—such as trust, communication, and accountability—to better scale innovations that improve productivity, resilience, and sustainability for smallholder farmers.

## Stories from the field:



### Supporting the engagement of smallholder farmers in local government policy making processes

The AgriFoSe2030 project on Functions in extension service pathways is rooted in a desire to improve smallholder farmers' livelihoods. It focuses on addressing challenges in agricultural extension functions and facilitating cross learning in extension between Kenya, Sri Lanka and Laos. [Full change story](#)



### Stakeholder engagement drives agricultural progress in Kenya

A decade ago Kenya embarked on the path of devolution, a transformative move to enhance service delivery and foster self-governance by shifting governmental functions to the county level. This decentralization presented both challenges and opportunities, especially in the agricultural sector. [Read the article](#)

“The project helped us understand the different structures in extension services including their strengths and weaknesses. This has helped us understand the different systems, share lessons and advise local governments and extensions officers better.  
Researcher, Kenya

”

# Digital extension expanding access to timely science-based advice in Southeast Asia

**Project title: Digitalization of extension services in the Southeast Asia (SEA) region**

Digital tools improved farmers' access to timely, relevant, and science-based advice, strengthening extension reach and efficiency.

**Location:** Cambodia, Philippines and Vietnam

**Duration:** 2021-2023

The project strengthened the adoption and understanding of Digital Extension Services (DES) in Cambodia, the Philippines, and Vietnam, addressing barriers that limit smallholder farmers' access to timely agricultural information. By conducting research, capacity-building workshops, surveys, and regional consultations, the project enhanced digital knowledge and skills among extension staff, researchers, and farmers. A total of 1,523 stakeholders benefited, with farmers trained to use mobile applications and extension actors better equipped to support digital advisory services.

The project strengthened institutional collaboration between universities, government agencies, and extension providers. It also influenced policy and practice by generating evidence on digital extension systems, informing stakeholder discussions, and embedding DES into academic curricula, including new postgraduate training programmes. The visibility of DES research increased as national departments of agriculture expressed interest in the findings, ensuring broader knowledge dissemination.

Overall, the initiative increased awareness, research capacity, and cross-sector partnerships, laying the foundation for more effective, accessible, and digitally enabled agricultural advisory systems that can better support smallholder productivity, resilience, and decision-making.

## Stories from the field:



### Digitalization of extension services in Quảng Trị delivering early results

Access to up-to-date farming knowledge is key to global food security, but traditional extension is hard to scale. Growing mobile access in low- and middle-income countries offers new opportunities through digital agricultural extension tools. [Full change story](#)



## Scientific article

**Barriers and enablers of digital extension services' adoption among smallholder farmers: the case of Cambodia, the Philippines and Vietnam**

**Published:** June 2024 Taylor & Francis Online

Le Thi Hoa Sen, Phantih Chou, Flordeliz B. Dacuyan, Ylva Nyberg, Johanna Wetterlind

[Read the scientific article](#)

“ There are many advantages to DES. Foremost, I can have more time now doing other tasks since I can share these apps with people/farmers online or through the internet. I can just contact them, so I can prioritize those who are in faraway places, instead. – Farmland owner and extension service provider

”

# Challenge 4

## *Smallholder agriculture within transforming food systems*

- **Empowering smallholders for resilient urban food systems (RUFFS) in Uganda**
- **Transforming pastoral livelihoods through local policy adaptation in West Pokot, Kenya**
- **Strengthening food system governance for nutrition and food security in Nakuru and Kisumu Counties, Kenya**
- **Boosting smallholder participation in fruit e-commerce in Vietnam**

**Africa**



**South and Southeast Asia**



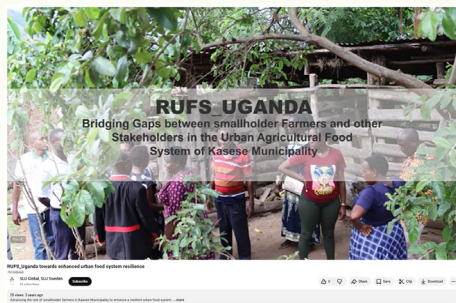
# Empowering smallholders for resilient urban food systems

## Project title: Unlocking the potential of smallholders for resilient urban food systems (RUFS, Uganda)

The project strengthened smallholder integration into urban food systems, improving market access, food availability, and system resilience.

**Location:** Mbale City and Kasese Municipality, Uganda

**Duration:** 2021–2023



### [Watch the video](#)

The project transformed how local authorities engage with smallholder farmers, recognizing them as key actors in building resilient urban food systems. It established multi-stakeholder Urban Food Systems Platforms that bring together farmers, policymakers, traders, researchers, and civil society to coordinate action on food security and resilience. Smallholder farmers were organized into groups, strengthening peer learning, collective marketing, and knowledge sharing.

The project also generated new data on smallholder contributions and challenges, improving evidence-based planning and policy dialogue. The institutional changes that followed include: Kasese Municipality allocating budget for smallholder activities; and Mbale City creating a Horticultural Officer position and designated land for an agro-demonstration site to support training and innovation. Farmers also shifted toward more business-oriented agriculture, identifying profitable agro-enterprises suited to local markets. Overall, the initiative strengthened farmer empowerment, improved collaboration among stakeholders, and laid a foundation for more inclusive and resilient urban food systems.

## Stories from the field:



### RUFS advances the potential towards enhanced urban food system resilience

Resilient Urban Food System Uganda (RUFS\_Uganda) advances the potential of smallholder farmers in the Kasese Municipality towards enhanced urban food system resilience. [Full change story](#)



### Scientific article

#### Using a Theory of Change Approach for Inclusive and Resilient Urban Food Systems in Uganda

**Published:** February 2025, Springer Nature Link

*Frank Mugagga, Paul I Mukwaya, Peter Kasajja, Patricia Nagawa Kiggundu, Ritah Nakanjako, Allen Kiiza, Eunice Muyama, Juma Wepukhulu, Mary Kemigisha, Heather Mackay, Magnus Jirstrom*

[Read the scientific article](#)

“ I would like to pass a vote of thanks to RUFS. They opened our eyes and mobilized us to form groups rather than working as individuals. With this mobilization, the future of smallholder farmers is bright because we now consult and advise each other on a number of things including where to get quality seeds and markets for our produce”. – Chairperson, Nabuyonga Horticulture Farmers’ Association, Mbale



# Transforming pastoral livelihoods through local policy adaptation

**Project title: Transformation of pastoral livelihoods through enhanced capacity for adaptation of nutrition and commercialization policies to local contexts: West Pokot-Kenya**

This project enhanced the adaptation of nutrition and commercialization policies to local pastoral contexts.

**Location:** West Pokot, Kenya

**Duration:** 2021-2024



[Watch the video](#)

Despite rich biodiversity and climate-resilient traditional crops, West Pokot County in Kenya continues to experience recurrent food insecurity due to climate and economic challenges. The project strengthened food security and local governance in West Pokot by promoting indigenous foods and shifting extension services toward participatory, community-driven approaches. It increased recognition of traditional crops such as millet, sorghum, and indigenous vegetables as key to nutrition and climate resilience.

Through farmer training, food demonstrations, media engagement, and exchange visits, communities gained practical skills in food preparation, preservation, and improved production methods. Women's groups played a central role in knowledge sharing, while local media amplified awareness and adoption of indigenous crops. The project influenced local policy – the County Government incorporated farmer group formation and farmer field schools into the 2022–2027 County Integrated Development Plan and allocated resources for training. This marked a shift away from donor-dependent food aid toward locally driven solutions. Overall, the initiative strengthened farmer networks, improved awareness of indigenous foods, and promoted more sustainable, resilient local food systems.

## Stories from the field:



### Supporting the engagement of smallholder farmers in local government policy making processes

Amidst recurrent global economic shocks and increases in smallholder vulnerability, attaining the objectives of sustainable development by 2030 is becoming a daunting task in many parts of the world.

[Full change story](#)



### Pipe project fights hunger in West Pokot as women embrace simple tech

This AgriFoSe2030 project strengthens smallholder farmers so that poor smallholders can have stable access to and consume safe and nutritious food. The projects has got national attention in Kenya due to its successful results. [Read the article](#)

“Before the exchange visit to Bungoma, I did not know that vegetables could be grown in plastic pipes with limited water. Now, I can feed my family by growing my own vegetables using waste plastic pipes with only 5 litres of water in a week” – A farmer whose practice of simple vegetable growing skills captured media attention and was reported in the Daily Nation newspaper on 5th December 2022.

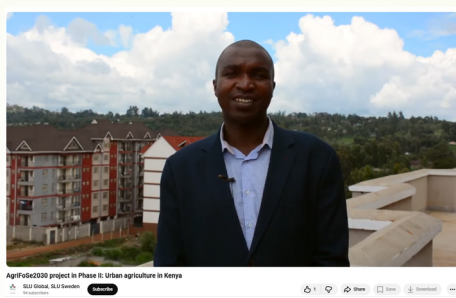
# Strengthening food system governance for nutrition and food security

**Project title: Governance of food systems for improved nutrition and food security in Nakuru and Kisumu Counties, Kenya**

The project informed county-level governance on nutrition and food security, contributing to evidence-based planning, cross-sector coordination, and improved policy coherence.

**Location:** Nakuru and Kisumu Counties, Kenya

**Duration:** 2021-2023



[Watch the video](#)

As urban areas expand and agricultural land becomes fragmented, the demand for sufficient, safe, and nutritious food in Kenya continues to rise. The project strengthened urban food system governance in Kisumu and Nakuru by promoting a holistic, systems-based approach to food security. It increased awareness among policymakers, farmers, traders and extension workers of the interconnected nature of food production, processing, distribution, and consumption. Through stakeholder consultations, trainings, and peer learning, traditional leafy vegetable farmers—previously marginalized in governance processes—gained a stronger voice in decision-making and organized into groups to engage more effectively with county authorities.

Farmers and traders improved their skills in production, value addition, food safety, and record-keeping, enhancing market opportunities and income potential. The project also supported the development of a draft food system strategy in Kisumu and strengthened collaboration among stakeholders. In addition, scientific testing validated traditional cooking practices, helping bridge indigenous knowledge and formal research. Overall, the initiative advanced more inclusive governance, strengthened local capacities, and promoted nutritious traditional crops within urban food systems.

## Stories from the field:



### The EastAfrican emphasise AgriFoSe2030 project in Kenya

The newspaper The EastAfrican published a news article emphasising the successful training manuals produced within Challenge 4 . [Read the article](#)



### Handing over of the training manual for traditional leafy vegetables

One of the AgriFoSe2030 projects organised a one day event in Kisumu to share research findings on the effects of cooking methods on the nutritional value of selected traditional leafy vegetables. [Read the article](#)

“Our field extension workers can now train farmers easily using this training manual. It does not only provide guidelines on production, but also management, harvesting, record keeping, preparation, cooking and nutritional value. It is a manual that can be used by all the actors in the traditional leafy vegetable value chain. This will greatly improve the productivity of these vegetables which we are trying to promote as a County - Chief Officer in charge of the Department of Agriculture, Livestock and Fisheries in Nakuru County.”

# Boosting smallholder participation in fruit e-commerce in Vietnam

**Project title: Mapping knowledge-, practical-, and policy-level challenges to increase the role of smallholder farmers in e-commerce of fruit products in Vietnam**

The project increased smallholder engagement in digital markets which enhanced market access, policy-relevant insights on e-commerce barriers, and smallholder visibility in emerging value chains.

**Location:** Hanoi and Son La Province

**Duration:** 2021–2023



[Watch the video](#)

The project strengthened the adoption of agricultural e-commerce in Vietnam by improving awareness, skills, and engagement among farmers, cooperatives, traders, and local authorities. Through training, research dissemination and stakeholder dialogue, participants gained technical capacity to use digital platforms and better understand opportunities for online market access. As a result, several cooperatives and producers began promoting fruits through platforms such as Zalo and Postmart, while traders and aggregators reported improved digital skills and increased online customer demand.

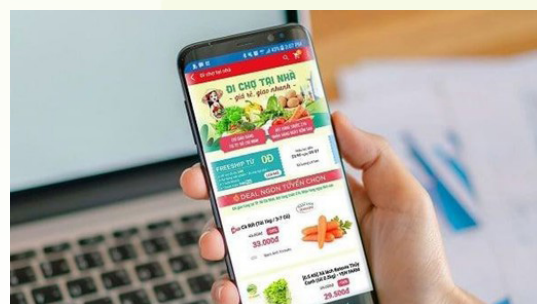
Participation in online fruit sales rose, with reported increase in sales of about 15% among farmers, 20% among cooperatives and 10% among traders. The initiative also encouraged safer fruit production practices and greater attention to product quality and safety. Project findings further influenced provincial agencies in Son La to organize workshops and exhibitions promoting agricultural e-commerce, demonstrating broader uptake and supporting local strategies to modernize agriculture and expand market access for smallholder producers.

## Stories from the field:



### Linking farmers with consumers through e-commerce in Vietnam

E-commerce in Vietnam has supported the consumption of fruit products, thereby serving as a direct connection between consumers and farmers. [Read the article](#)



### E-commerce as a bridge connecting farmers and consumers

E-commerce has boosted the consumption of fruit products and serves as a bridge between producers and customers. [Read the article](#)

“Thanks to the training on PostMart facilitated by the project, I understand better about this e-commerce platform and hopefully I can get more income by also selling fruit products through this platform. Thank you AgriFose2030 – Female farmer in Quoc Oai district”

# AgriFoSe2030

## Agriculture for Food Security 2030

Translating Science Into Policy & Practice

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#### Africa



#### South and Southeast Asia



This project map shows all countries where AgriFoSe2030 have had ongoing projects

#### Compendium of Impacts

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