The AgriFoSe2030 Annual Report 2019

AgriFoSe2030

Agriculture for Food Security 2030
- Translating science into policy and practice

Preamble

The Agriculture for Food Security 2030 Programme (AgriFoSe2030) aims to contribute to the Sustainable Development Goal 2 – Zero Hunger. The programme-wide objective is 'to transform small-scale systems with development potential from subsistence households to more commercial agricultural companies in sub-Saharan Africa (SSA), South and Southeast (SE) Asia so that they can respond sustainably to the growing needs for food security and local economic growth'.

Following four years of conceptualising, developing and managing the AgriFoSe2030 Programme, Professor Ulf Magnusson stepped down from his position as AgriFoSe2030 Programme Director during 2019 and was replaced by me, Sofia Boqvist. I have been engaged in the programme from the start, as one of the theme leaders. Last year, 2019, was a very intense year, being the final year of AgriFoSe2030 phase 1. The AgriFoSe2030 team has continued to build on and advance the niche of the programme – supporting synthesis of knowledge, capacity development of researchers in our target regions as well as genuine engagement with target stakeholders, all through a science-based approach.

We have particularly worked on further developing the programme's model of operation (see figure on page 3), and through this process focused on several subprojects that began their activities during the first years. first years. Here we have seen that, by concentrating on outreach and engagement, project efforts reach substantial outcomes and impact in our target regions. The programme now has a functional activity-output-impact model that we hope to bring into a second programme phase. Thus, during 2019 we have also, in a collaborative programme fashion, developed a proposal for a second AgriFoSe2030 programme phase. The proposal has been submitted to our donor Sida for their consideration, and we very much hope for their continued support for the period 2020-2023.

Associate Professor Sofia Boqvist

AgriFoSe2030 Programme Director

Our activities

Programme-wide activities

The AgriFoSe2030 Programme is designed to train researchers from sub-Saharan Africa, Southeast Asia and South Asia on how to;

- *analyse and synthesise* relevant scientific data and research findings supporting smallholder transformation
- *communicate* findings to relevant stakeholders including practitioners, policymakers and development actors
- *identify* and engage with relevant stakeholders, co-creating knowledge
- *train and engage* researchers in how to bridge the gap between science, policy and practice

With this in mind AgriFoSe2030 has carried out several programme-wide and cross-theme activities during the past year.

The programme has focused on supporting theme specific subprojects that can, with help in tailored outreach and engagement, reach broad outcomes in our target regions. The Communication and Engagement (C&E) team provided trainings in how to communicate and reach desired stakeholders and outcomes in each of the projects, adopting a Theory of Change approach. The project teams deeply engaged with relevant stakeholders from the start of the projects and co-designed outputs together to reach outcomes. Some of these projects started already in 2017 and 2018, and all are able to demonstrate that new knowledge has been co-created and outcomes have been reached, including unexpected spin-offs.

AgriFoSe2030's model of operation

In January the programme also held its third training course *"Translating science into policy and practice"* in Nairobi. During the course, organized by theme 1 and 2, researchers were trained in how to communicate their results to a non-scientific audience. They got trained in messaging techniques, reducing jargon and how to better explain tricky scientific concepts. They also learnt to map stakeholders that are important for implementing their findings and how to reach out to media to get their messages acknowledged by the public. Not only did the training equip the researchers with new tools - the training also gave instant results. Rasel Madaha, lecturer and researcher at the Department of Agricultural Extension and Community Development at the Sokoine University of Agriculture in Tanzania, explained how, after the course, the researchers from Tanzania came together to form a research group that would interact directly with policymakers and practitioners (read more here).

In March, the C&E team organized a webinar to train AgriFoSe2030 researchers, and other interested parties,

The participants in the workshop in Nairobi, Kenya. Photo Linda Hansson.

on how to further engage and influence policymakers after they have summarized their research in a policy brief. This third AgriFoSe2030 webinar had a stronger focus on outreach and what happens beyond the written outputs, than previous webinars. SEIs office in Asia organized the webinar and it emphasised on policy contexts in Southeast Asia. The webinar was well attended and is available on the AgriFoSe2030 webpage. It continue to serve as a tool for researchers on how to better reach out with their knowledge beyond an academic context, as well as connect to, and receive attention of policymakers and practitioners (watch the webinar here).

When soliciting input and feedback on the development of a proposal for a second AgriFoSe2030 Programme phase, a two-day workshop was organized in Uppsala to identify challenges for agricultural production in achieving SDG2 in sub-Saharan Africa and South and Southeast Asia. The workshop gathered eleven participants from Kenya, Vietnam, Indonesia, Burkina Faso and Ethiopia and together they carved out challenges that address specific aspects of agriculture and food security in SSA and South and SE Asia. These challenges will be crystalized into areas of work during a second AgriFoSe2030 phase.

Several criteria were important when identifying and developing these challenges; they should (i) allow a practice or policy outcome pathway according to the AgriFoSe2030 model (ii) be able to reach the outcomes within four years, (iii) address food and nutrition security, (iv) be relevant for AgriFoSe2030 partners in SSA and South and SE Asia, (v) include all three dimensions of sustainability and, finally, (vi) be linked to existing global/regional/Swedish development strategies (read a news story about the workshop here).

THEME 1

Social and economic dimensions of smallholder based agriculture and food security

Theme 1 has, among other activities during 2019, continued to produce studies highlighting key social and economic challenges for smallholder-based agriculture and food security in AgriFoSe2030 target countries. One such study focused on the dialogue and development of urban agricultural policies.

This AgriFoSe2030 project, implemented by University of Nairobi, Mazingira Institute and County departments of agriculture, livestock and fisheries in Kisumu and and Nakuru in Kenya, aimed at reaching out to urban agriculture stakeholders and introduce a platform for discussing policy directions for urban agriculture at the county level.

The targeted stakeholders included urban farmers, county agricultural and livestock officers, city planners, public health officers, traders, producers and trader organisations, NGOs, researchers, and service providers among others. The platform took the shape of several well-organised workshops, with the aim to disseminate to and discuss with stakeholders on urban agriculture. The workshops were successful since lots of insights and knowledge for policy formulation, planning and actions at county level were shared.

"In the case of Nakuru we were also able to link to and support already ongoing urban agriculture policy processes at the county level. This included sensitizing stakeholders in Nakuru about the Nakuru County Urban Food and Agriculture Bill, 2019 and in doing so, we were able to create a forum for a broad set of stakeholders to discuss urban agriculture issues. Additionally, the project helped put the bill through public participation."

– Samuel Omondi, University of Nairobi

Stakeholder workshop on urban agriculture policies, Nakuru, August 2019. Photo: Samuel Ikua Thiong'o.

THEME 2

Multifunctional landscapes for increased food security

In the past year Theme 2 continued focusing on knowledge synthesis that highlight challenges and opportunities for multifunctional landscapes in target countries. Theme 2 researchers published a book titled *Multifunctional land uses in Africa – sustainable food security solutions.*

The idea to the book emerged in January 2017, when six African researchers participated in an AgriFoSe2030 training course on *'Translating Science into policy and practice'* in Nairobi, Kenya. Coming from different scientific backgrounds, they all shared a research focus on multifunctional land use and its role for food security. During the workshop it became clear that they all had research material demonstrating successes on how multifunctional land use could reduce poverty and ensure food security. Based on this the researchers proposed to publish their success stories on multifunctional land use in Africa as a book.

The book project resulted in a published open-access volume in July 2019 demonstrating how integrated land use and natural resources, labour, and other inputs can have positive effects on food security at household, community and national levels. Drawing on case studies from Kenya, Ethiopia, Nigeria and Burkina Faso, the book illustrates how non-conventional uses can generate profit while promoting social and environmental sustainability.

– We hope that this book can inspire and support the shaping of future policies and practices within the sustainable land use sector. We are also working on teaching material that can be used in education for better understanding of the benefits and challenges of multifunctional landscapes, says Madelene Ostwald, theme leader of multifunctional landscapes within AgriFoSe2030 and editor of the book.

Musuu Farm has an open fish pond with water storage tanks that supply water for drip irrigation for tomatoes and with bamboo trees planted along the riverbed for preventing soil erosion. Illustration from the book, page 85, by Simelton 2019.

"Musuu Farm demonstrates that an enterprise centred on contributing to the needs of local communities can succeed. This multifunctional approach to land use, with benefits spilling over to community members, serves as a model of success amid scarcity of resources.
Intensification of food production systems within a multifunctional land-use approach seems to be a viable option where pressure for agricultural land is increasing rapidly."

– Excerpts from chapter 5, *Integrated aquaculture* by Geraldine K. Matolla.

THEME 3

Increased productivity and diversity in smallholder cropping systems for increased food security

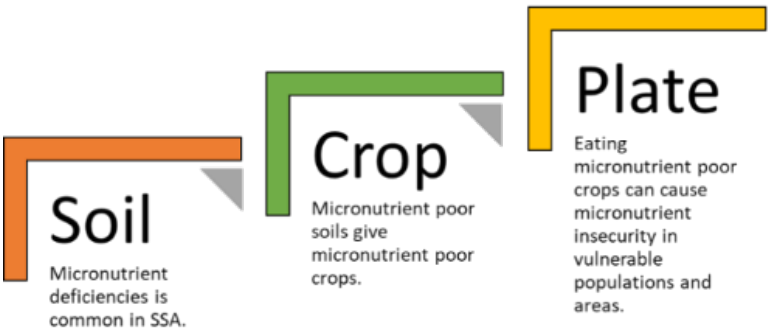
Theme 3 has continued to focus on challenges and opportunities for increased productivity and diversity in smallholder cropping systems for increased food security. Here we highlight the work done by researchers in Kenya on the importance of supplying micronutrients as an addition to conventional fertilizers to improve crop productivity and nutritional quality of crops.

Hidden hunger, or micronutrient deficiency, is a major problem in SSA. The amount of nutrient in the soil affects crop productivity but also the nutrient content in the plant parts consumed as food and feed. The use of fertilizers to increase nutrient content in the plant and crop productivity in SSA is therefore vital, but often knowledge on how to best combine these types of nutrients in the fertilizers is lacking. Micronutrients and secondary nutrients are nutrient elements essential for optimal growth and nutritional quality. But they are required in very small quantities (e.g selenium or boron) in relation to macronutrients such as nitrogen (N), phosphorus (P) and potassium (K). AgriFoSe2030 researchers at the International Center for Tropical Agriculture (CIAT), Kenya and Swedish University of Agricultural Sciences (SLU), have made a synthesis of existing datasets and scientific literature to improve the understanding of the relationships between agronomic biofortification, i.e. the application of micronutrients and secondary nutrients in fertilizers, and staple crop nutritional quality and crop productivity in SSA.

Biofortified fertilizer products can be used to improve the nutritional quality in staple crops, which implies application of micronutrients such as zinc, boron and selenium. This provides significant opportunities to address micronutrients deficiencies and alleviate hidden hunger, by raising the concentrations of trace elements important for human nutrition. In addition to improving crop quality, agronomic bio-fortification and the combined application of macronutrients (NPK), secondary and micronutrients can also increase yields on nutrient poor soils. However, for the farmers in SSA to start adopting bio-fortification practices, they need to see clear effects on farm profitability:

"We found that agronomic bio-fortification improving crop yields and crop nutrient contents, often was profitable for smallholder farmers. However, there is need for development of user-friendly decision-making tools for smallholders and local extension services to aid site-specific micronutrient applications"

- Job Kihara at (CIAT), Nairobi, Kenya



The micronutrient problem, from soil to plate. Photo: Stephanie Malyon.

THEME 4

Livestock-keeping among smallholders for a nutritious diet and increased food security

Among other activities, theme 4 continued to produce studies highlighting challenges and opportunities for smallholder livestock keeping for a nutritious diet and increased food security in 2019. A project led by researches from National University of Laos focused on improving goat keeping among smallholders for increasing food security and income generation.

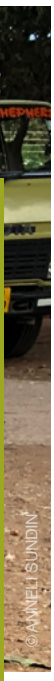
Goats are important for the livelihoods of poor smallholder farmers in Laos, particularly for those who cannot afford to invest in large ruminant production. They need less space, inputs and capital than for example cattle or buffalo. There is an increased demand for goat meat in the country, and the market price for goat meat is higher than that for cattle and pigs. The goat production in Laos however suffers from low productivity due to poor feeding regimes and management practices. The AgriFoSe2030 project *"Improved goat keeping among farmers for increasing food security and income generation"* was developed in response to these problems.

The long-term project aim was to increase the productivity for smallholder goat farmers and identify areas where policy- and decision makers can support such development. In the project, smallholder farmers and extension officers increased their capacities around goat management, through tailor-made training events. Model farms were set up to showcase best management and feeding practices, e.g. by building better housing systems and growing suitable feed crops. This resulted in a better understanding among farmers of the importance of sustainable goat management and feeding strategies. The project also meant that extension officers, smallholder farmers and academia came in closer contact with each other. Several goat farmers' groups, which had never previously existed in the region, were established on the initiative of the farmers. Through these groups, knowledge on goat production is being disseminated to other farmers.

"We have also produced booklets, posters, media on best practices specifically targeted for smallholders and extension officers on how to improve goat productivity. We hope that this project will lead to an increased dialogue between Laotian agricultural researchers, extension services and farmers on how to improve goat farming in the country."

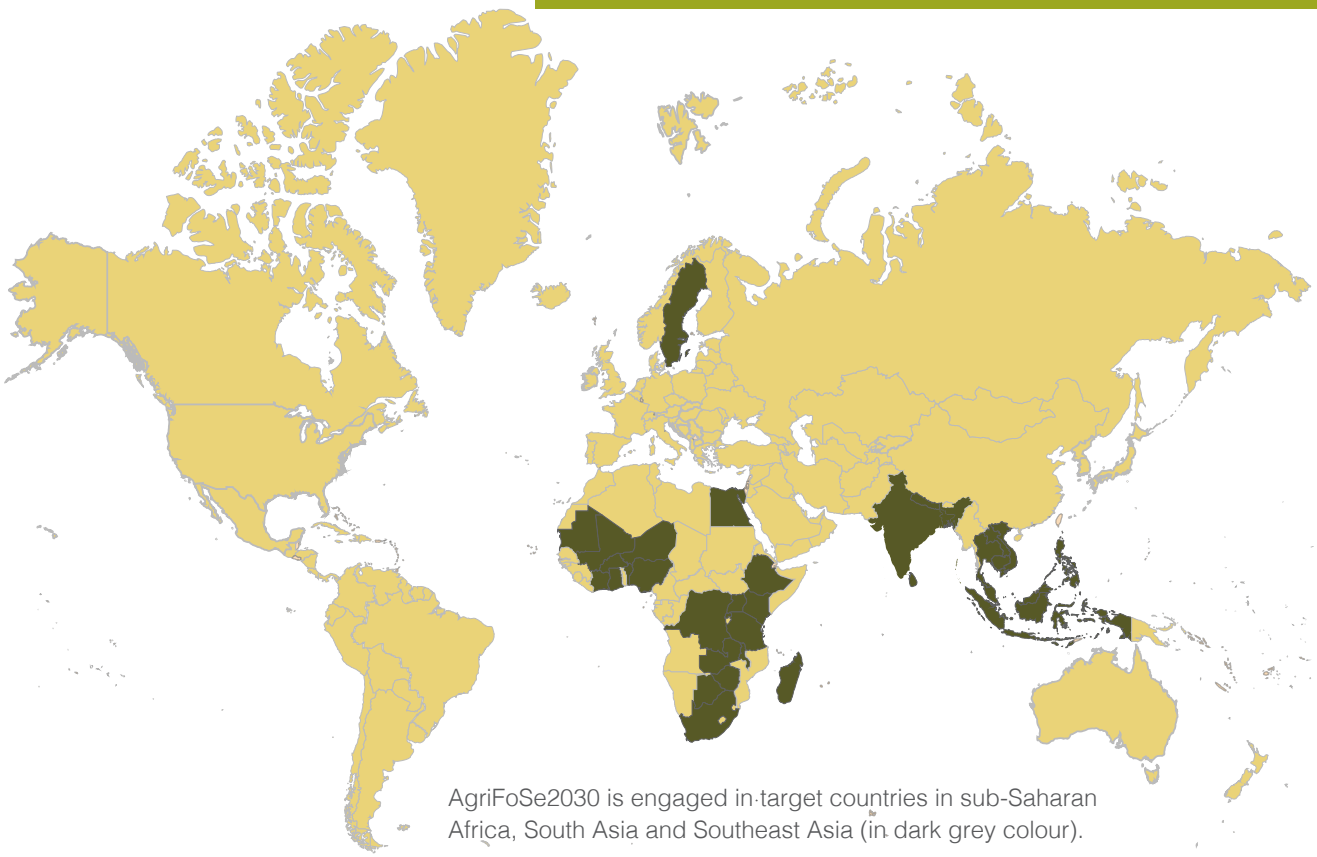
-Daovy Kongmanila. National University of Laos.

Left: Making of mineral blocks for the goats, as supplemental feed. Farmers are there to learn to make blocks themselves. Right: A goat in a clean and appropriately designed goat house, i.e. a couple of meters above ground. Photos: Anneli Sundin/AgriFoSe2030.



During 2019 the AgriFoSe2030 programme has:

- Conducted 8 research exchanges (to and from Sweden)
- Organized 6 local and regional workshops and writeshops
- Organized 1 international conference
- Organized 3 courses and webinars
- Produced 7 knowledge syntheses, reviews and reports
- Produced 18 peer reviewed journal papers
- Produced 10 AgriFoSe2030 briefs
- Published 1 story in international news media
- Published several stories through the SIANI network
- Produced several video films and news stories for the AgriFoSe2030 website



AgriFoSe2030 is engaged in target countries in sub-Saharan Africa, South Asia and Southeast Asia (in dark grey colour).

AgriFoSe2030

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SLU · Lund University · SEI · University of Gothenburg

Read more about our workshops courses, reports, briefs, syntheses and see webinars on:

www.slu.se/agrifose