REFOOTURE

Food System Innovation Platforms

as a pathway towards Regenerative Inclusive Food Systems

WAGENINGEN
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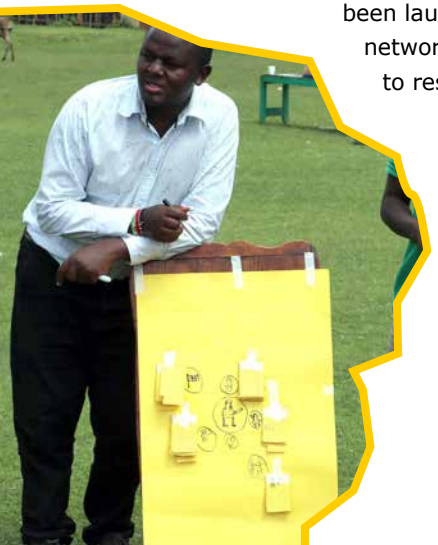
Introduction

Food systems in East Africa are under pressure. Climate change, biodiversity loss, natural resource depletion, and declining soil health are having an impact. Hunger continues to grow. Recent developments, such as the increasing price of inputs like mineral fertilisers, make the need for change even more urgent.

Many agree that to reverse these trends requires a fundamental change. We need a transition towards Regenerative Inclusive Food Systems. In another booklet we describe what Regenerative Inclusive Food Systems may look like, why we need them and what lessons we have learned in the REFOOTURE project on the transition towards such food systems.

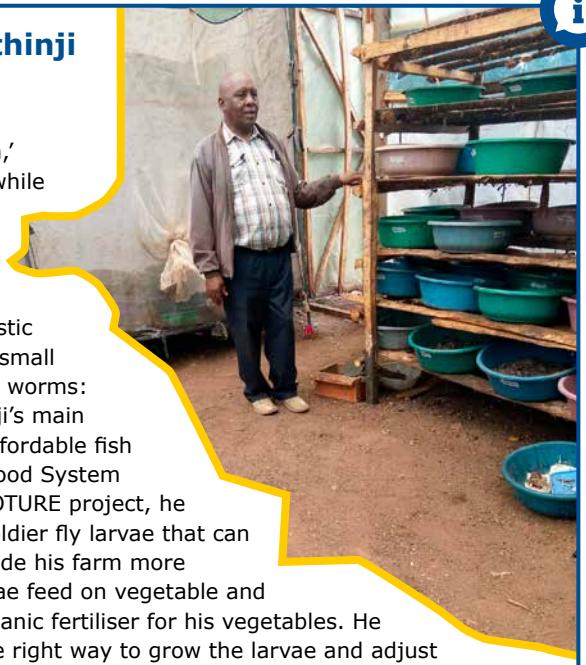
In this booklet, we go into more detail on how the process towards such Regenerative Inclusive Food Systems can be facilitated. Key to this is increasing the capacity, opportunity and motivation of farmers, innovators and entrepreneurs to experiment, measure, monitor and gain evidence, as this will allow them to transition towards Regenerative Inclusive Food Systems. Unlike approaches aimed at sustainability, our approach aims at a more radical and fundamental change of the food system itself. Approaches aiming at sustainability are usually simply trying to get more sustainable outcomes from the systems as we know them today, without real changes to the food system as a whole.



To facilitate this systems change, Food System Innovation Platforms have been launched within the REFOOTURE project. These are networks of various actors in the food system, from farmers to researchers and from government to private sector, investors and civil society. We see Food System Innovation Platforms as the tool and means to move towards Regenerative Inclusive Food Systems.

In this booklet we describe the Food System Innovation Platforms that were established and launched. We also describe the innovations they are working on, and conclude with the lessons learnt and the way forward.

Farmer Macdonald Githinji is experimenting with soldier flies



'My *shamba* is an integrated farm,' Macdonald Githinji says proudly while walking around his fields in Nakuru, Kenya. He grows vegetables, has a fishpond with tilapia and catfish, and a chicken shed. In another shed he has plastic containers that hold hundreds of small swarming creatures that look like worms: black soldier fly larvae. Mr Githinji's main problem used to be how to get affordable fish feed. Now, through the Nakuru Food System Innovation Platform of the REFOOTURE project, he has learned how to grow black soldier fly larvae that can be used as fish feed. This has made his farm more circular: the black soldier fly larvae feed on vegetable and fruit waste, and thus produce organic fertiliser for his vegetables. He learned, after some attempts, the right way to grow the larvae and adjust the different parts of his farm to each other. Now he wants to share what he has learnt. 'We are a community of several farmers.' The fruit waste of others is a resource for Githinji. 'I want to increase my production of black soldier fly larvae to share this with other farmers.'

The REFOOTURE project

Launched in 2020, REFOOTURE aims to contribute to food systems transformation by fostering Regenerative Inclusive Food Systems. REFOOTURE starts from understanding innovations as doing new things in practice. This comprises social, technical and economical innovations, which collectively contribute towards the transformation of Food Systems.

REFOOTURE is developing the strategy and tools to support food systems transformation in three East African countries: Ethiopia, Kenya and Uganda. The project collects evidence, identifies pathways and supports collaboration in innovation for Regenerative Inclusive Food Systems in Eastern Africa. We do this by mobilising motivation and capacity for innovation and strengthening the enabling environment to increase opportunities for change via Food System Innovation Platforms in the three countries. Scientists from WUR and East African universities collaborate in this project together with a broad range of stakeholders in the regional food system. REFOOTURE's starting point is empowering Food Systems Innovation Platforms to innovate for Regenerative Inclusive Food Systems.

What are Food System Innovation Platforms?

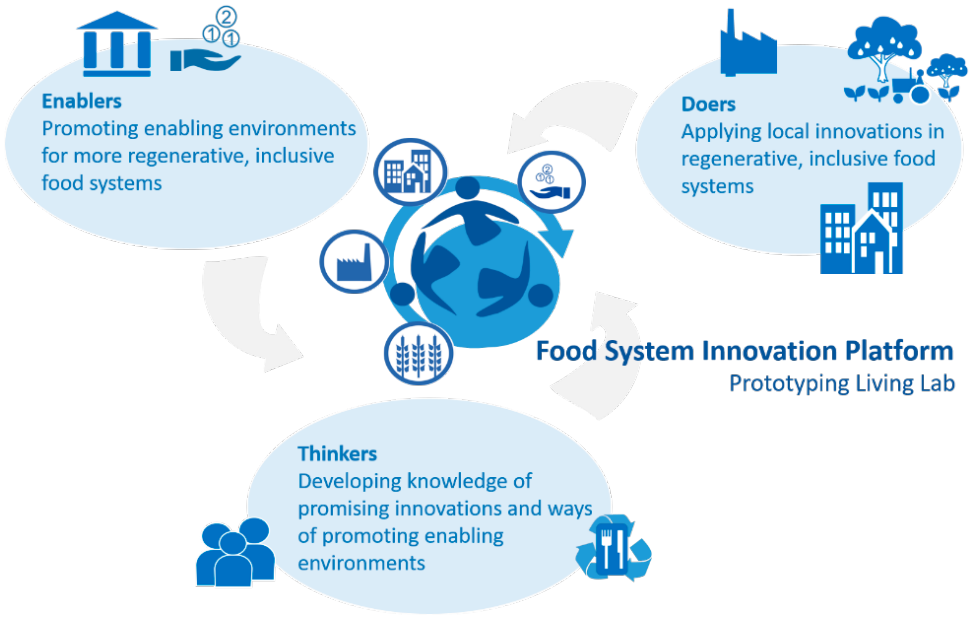
To accelerate the movement towards Regenerative Inclusive Food Systems, REFOOTURE has conceptualised, established, and strengthened three Food System Innovation Platforms in three East African countries. The platforms strengthen existing networks of local farmer community members, extension workers, researchers, policy makers, members of civil society, investors and other private sector parties. In future, they will evolve and extend into larger networks. In REFOOTURE, we defined Food System Innovation Platforms as innovation ecosystems – a social environment with the various players, stakeholders, and community members that are critical for innovation towards more regeneration and inclusion in food systems. In the platforms, people meet on a regular basis and cooperate in their support to, and learning from, local innovation cases – very practical and hands-on initiatives of local communities of farmers and local innovators.

The platforms are supported by scientists from Wageningen University & Research, Jimma University and Bahir Dar University (Ethiopia), Egerton University (Kenya) and Muni University (Uganda). The scientists are from different scientific disciplines and work together in a transdisciplinary way. The African universities host the secretariat of the platforms and manage day-to-day business.

New generation of platforms

Food System Innovation Platforms are a new generation of platforms that apply the working modes of Living Labs (see box on page 7). Stakeholders work together to develop

innovations that contribute to a Regenerative Inclusive Food System. The platforms connect 'doers' (farmers, entrepreneurs) with 'thinkers' (researchers, innovators) and 'enablers' (policy makers, financial institutions). Of course, roles are not fixed. A researcher can be a doer, and many farmers act as thinkers. Also, nature itself has a place at the table. Various tools are used to include the voice of nature in deliberations. In REFOOTURE, the Food System Innovation Platforms started off as Living Labs. However, unlike some Living Labs, Food System Innovation Platforms focus on action rather than on thinking. They make action plans each year, implement various activities and monitor their own progress. In REFOOTURE we use the term Living Lab to refer to a specific way of working.



What are Living Labs and what are their working modes?

Living Labs are user-centred networks working on open innovation and co-creation, often involving partnerships between government, private sector and civil society. They integrate research and innovation processes in a real-life setting. Key characteristics of a Living Lab's working mode include:

Innovation: Actors jointly develop new products to find new solutions to existing or new problems.

Multi-stakeholder participation: Living Labs take a holistic view of society, involving stakeholders from government, academia, private sector, and civil society.

Co-creation: The participating actors shape the innovation processes together.

Iteration between activities: The feedback gathered from use and evaluation of the product or solution is used to further develop it in a later stage.

Real-life settings: A Living Lab operates in the real-life setting of the end users, infusing innovations into their real life instead of moving the users to test sites to explore the innovations.

Place-based innovations

At the core of the Food System Innovation Platforms are place-based innovations. These are innovations based on the specific characteristics of a place that is in some way meaningful to the people living there. Local communities, their territory and their surroundings determine the place-based potential for innovations. Each Food System Innovation Platform has identified several innovation cases around such place-based innovations. Existing innovation activities were strengthened and new innovation cases were developed. These innovation cases have the potential to contribute to the development of Regenerative Inclusive Food Systems. Support to these cases aimed at developing understanding of the place-based potentials, envisioning a future for Regenerative Inclusive Food Systems, and jointly setting an agenda for change from which new innovation emerges.

These place-based innovations are bottom-up initiatives, firmly rooted in local communities and their surroundings. The needs of farmers guide the process, and farmers have a say in the work of the Food System Innovation Platforms.

At the same time, the platforms not only aim to support local innovations. Their goal is to accelerate and enable transformation of the wider food system. The platforms do this by linking the local initiatives to other actors in the food system, learn from this, and lead and orchestrate the process towards a regenerative and inclusive food system. This is explained below.

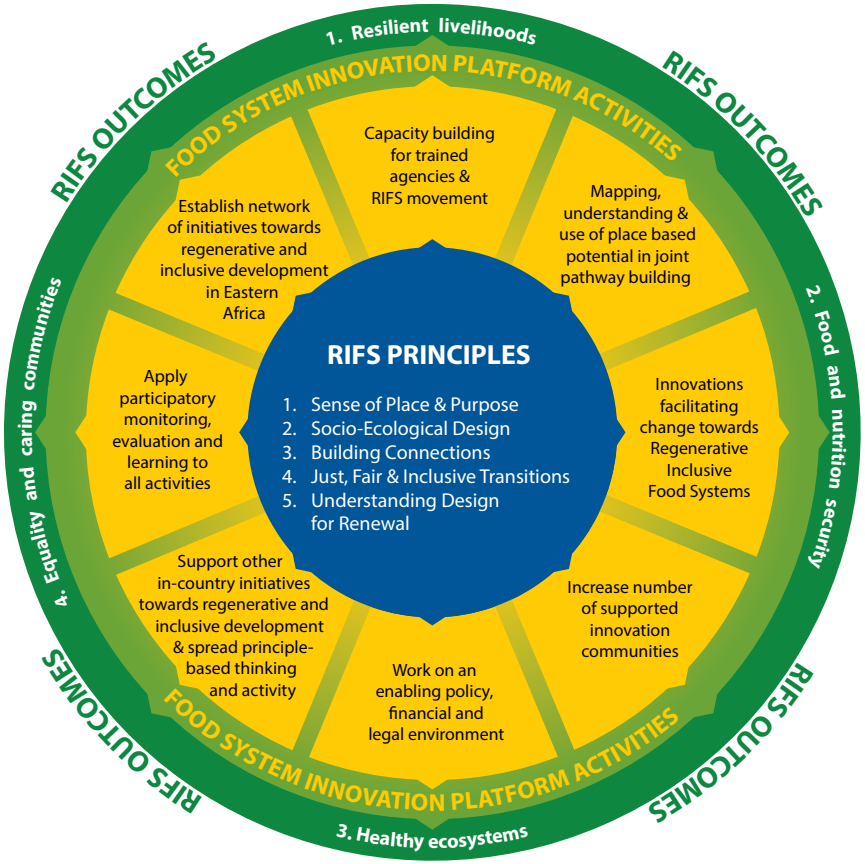
How do the Food System Innovation Platforms contribute to Regenerative Inclusive Food Systems?

The platforms orchestrate and facilitate change towards a Regenerative Inclusive Food System by undertaking various activities. They do this through different activities. These activities are also mentioned in the figure below.

- They help local communities and other stakeholders to map and understand place-based potentials, set a joint agenda for change, and build a vision of a Regenerative Inclusive Food System.
- They co-create, support and develop, together with farmers and local innovators, the place-based local innovations aimed at creating Regenerative Inclusive Food Systems.
- Based on practical and on-the-job experience, they prototype, test and develop evidence about which innovations work and which do not, and why. Again: this is done together and in co-creation with various actors.
- This evidence is used to inspire other local communities and innovation cases, and upscale the innovations and businesses in real life.
- The evidence is also used to influence decision-making processes in East Africa, thus changing the enabling environment, e.g. to change government policies and the financial and legal environment. This is a promising approach, which will be focussed on more in the future.
- Monitoring, Evaluation and Learning takes place continuously to find out what works and what not in the transformation towards Regenerative Inclusive Food Systems. This may result in adaptation of the workplan, agendas and vision.
- Food System Innovation Platforms act as a brokering and networking facility, linking and connecting stakeholders that aim for regeneration and inclusivity in the food system. They do this on a regional, national and international level.
- Based on the above, Food System Innovation Platforms conceptualise and test a regenerative development approach and form a platform for reflection on what a Regenerative Inclusive Food System looks like.
- And while doing all these activities, people's capacity and motivation are further strengthened by the REFOOTURE project to enable them to take up a leadership role to transform their food system.

> "In the innovation platform, farmers themselves co-create and innovate. We do experiments together with farmers, and find evidence of what works and what does not work. Based on that evidence, we can upscale the lessons learnt to others. In the Food System Innovation Platform, the ten innovation cases can interact. That has created great synergy between the innovation cases."
>
> Tom Owino, Regional Coordinator Kenya, REFOOTURE project

The experience of the first phase of the REFOOTURE project underlines the potential of the established Food System Innovation Platforms to integrate people from different domains and to stimulate the local innovation process as a practical game-changer towards Regenerative Inclusive Food Systems.



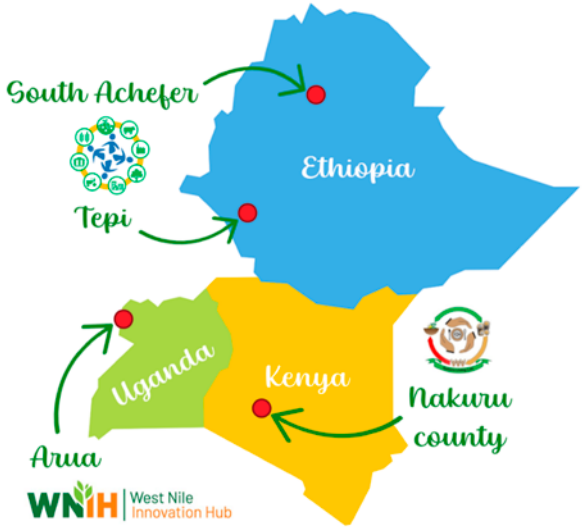
This figure summarises our approach for transformation towards Regenerative Inclusive Food Systems, starting from the principles in the centre of the figure. The activities carried out in parallel by Food System Innovation Platforms are shown in yellow.

"The Food System Innovation Platform is a way to reflect on what food system we need. Farmers are now part of the Food System Innovation Platform. Their voice and their interests are put on the table and brought to the notion of other stakeholders. Their priority challenges are being addressed. It works very well."

Tewodros Tefera, Country Manager Ethiopia, REFOOTURE project

Food System Innovation Platforms in Ethiopia, Kenya and Uganda

The REFOOTURE project has established three Food System Innovation Platforms that are the driving force behind four Living Labs action sites. One Food System Innovation Platform is in Nakuru, Kenya. The Platform in Ethiopia has two Living Lab action sites: one in Teppi in the Southwestern Region, the other in South Achefer, which is in the north-western part of the country in the Amhara region. The last and most recently established platform is in Arua, located in West Nile region, Uganda.



Location of the three Food System Innovation Platforms.

Each Food System Innovation Platform is active in a region with specific food system challenges. We describe these regions and the opportunities and challenges, then tell more about the platforms, their activities and the innovations they supported.

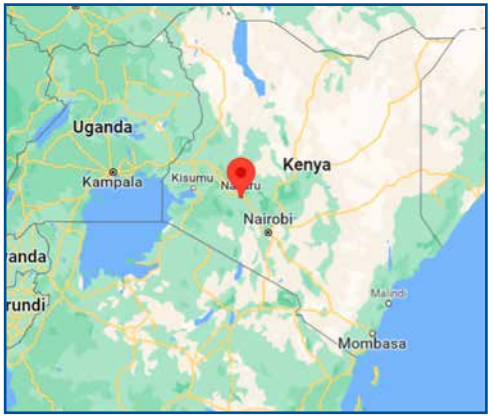
The role of WUR

Wageningen University & Research supports the African universities in setting up and strengthening the innovation capacity of the Food System Innovation Platforms. WUR provides concepts, organises joint sense-making dialogues, sets up protocols and provides support in using these. Also, researchers from WUR bring the evidence to the international playing field. WUR also plays a role in bringing technical assistance and helping to boost innovation and collect evidence.

Nakuru, Kenya

Food system opportunities and challenges

Nakuru county, in the Kenya highlands, is home to two million people. The county is known for its highly productive arable land. The economy is agriculture driven, and horticulture, dairy production and aquaculture are important sectors. With several national parks (Lakes Nakuru and Naivasha, Hell's gate) and Nairobi nearby, tourism is also an important sector in the county.



Nakuru is the capital of Nakuru County situated in the Great Rift Valley.

There are opportunities. For example, there is a growing middle class with increased purchasing power and changing eating habits. That demand drives economic growth and development. Moreover, initiatives involving regenerative and inclusive practices are already taking place, for example, restoring and enriching soil fertility, biomass recycling, water-saving practices and ecosystem biodiversity and landscape restoration. Also, some farmers are seeking to diversify their livelihoods and there are initiatives that encourage inclusivity. However, these innovations have not been scaled.

And there are challenges as well: food insecurity and food poverty are still present. Moving towards intensive agricultural production methods with increased mechanisation, mono-cropping and synthetic chemical use has depleted the soils and brought soil degradation, threatening agricultural production. Also, agricultural land is increasingly being transformed into residential areas, which is poorly regulated, and deforestation is taking place.

The Nakuru Food System Innovation Platform

The Nakuru Food System Innovation Platform, also known as Nakuru Living Lab, (nakurulivinglab.org) was established in July 2021. Its day-to-day activities are run by a team of five scientists from Egerton University, who form the secretariat of the platform. The secretariat meets on a weekly basis. The platform has a board of around 11 representatives of different actors in the food system. It aims to be inclusive and has five female and six male members. The board meets four times in a year and cooperates in finding solutions for the food system issues in the region.

The Nakuru Food System Innovation Platform supports local co-innovation and co-creation processes. It offers and will offer different services. These include networking, market linkage and regional branding, access to finance, development of policy and partnerships and facilitation of knowledge exchange and dissemination, for example through field days and workshops. Key is the gathering of evidence on which innovations work, and which don't. An important activity is capacity building and movement building, through training. This also includes support of businesses or start-ups through the development of business models and business proposals. Another important aspect is vision building and vision journeys.

Inclusion in Menengai Community

Inclusion is key in facilitating Regenerative Inclusive Food Systems. This starts at the very beginning with the question who to include in multistakeholder processes. An example of how to make sure that a process is inclusive, is the visioning exercise that the REFOOTURE team facilitated with residents around Menengai forest. The group of people worked together for several days building the vision on what the forest means to them, and how to preserve it. The team used various tools to make sure the process was inclusive. A deliberate targeting strategy was used to reach stakeholders who are highly dependent on the place but who are poorly organised, lack a voice in area planning or are marginalised.

Stakeholders were mapped and a power analysis was made. Marginalised people were reached through local community groups. Visioning was used to strengthen the sense of place and purpose at the individual level, preparing them for meaningful participation in collective visioning and helping individuals to feel ownership of collective plans. Diagramming and drawing were used, instead of writing, to put local and indigenous knowledge on the table. Inclusion also means giving nature itself a place at the table. This was made possible by having someone in the process act as 'Mother Menengai' during workshops and meetings. Participants were able to imagine what 'Mother Menengai' would say or do. That helped them to see the forest that people depend on as a living being and a stakeholder with its own agenda.

See: nakurulivinglab.org/menengai-community-forest-association-2

At the core of the Nakuru Food System Innovation Platform is the innovation agenda, which currently works on 10 innovations that are expected to contribute to Regenerative Inclusive Food Systems. Kenya has a well-established culture of innovation, and most innovation cases concern existing agricultural businesses that have demonstrated an ambition to work on regeneration or inclusion. Some innovation cases are mainly aimed at regeneration, for example by restoring and enriching soil fertility, recycling biomass and waste, using renewable energy sources, water-saving practices or biodiversity and landscape restoration. Others are mainly aimed at increasing inclusivity, for example through generating employment and entrepreneurship for youth and women, livelihood diversification or closing the gap between formal and informal markets.

"The vision building process provided a good platform to promote inclusivity. The multistakeholder process made it clear that there is great diversity in the community. In the spirit of not leaving anybody behind, we also include those who are usually voiceless. And the group involved expanded. First, 12 people were involved, but on their own initiative, 80 more residents from the community were invited to have their say. This case very much inspired other innovation cases. We gave a training to the other innovation cases on the experiences with vision building process in Menengai. They loved it. The process gives purpose to the innovation cases and motivation. That was one of the most empowering trainings."

Tom Owino, Regional Coordinator Kenya,
REFOOTURE project

Improving potato production

Because they are often struck by potato diseases, such as bacterial wilt, a group of farmers called Green Vision wanted to have access to clean potato seeds. In this region, less than 5% of farmers use certified seed; most farmers are used to recycling their own unclean seeds, which has led to the recurrence and upsurge of bacterial wilt disease, and hence reduced yield. Through Nakuru Food System Innovation Platform, they have been facilitated to carry out off-season production of potato mini-tubers for seeds using drip irrigation and organic fertiliser. The use of clean seed potato tripled the yields from 15 tons to 45 tons per ha. However, soils were also too acidic due to continued use of inorganic fertilisers. Nakuru Living Lab introduced the use of organic fertiliser (the product from another innovation case, GRIINCOM Organic fertiliser) by setting up field trials. Over time, the organic fertilisers will slowly correct the soil pH in Nakuru farms. These organic fertilisers are also cheaper than what has been available so far, which will lower the current high costs of production. Innovation has been fostered by training sessions in agribusiness, power messages, evidence-based experimentation with regenerative practices and soil testing. Also, the farmers as a group gained more clarity on where to go in future, after a visioning exercise.

The Griincom innovation challenge: how to mechanise compost processing in order to increase volume and improve nutrient value of organic fertiliser.

South Achefer, Ethiopia

Food system opportunities and challenges

Agriculture is the main source of livelihood in Ethiopia. South Achefer district has relatively stable crop production that produces enough surplus for petty trading and selling in local markets. Farmers also have small amounts of livestock such as cows, chickens, goats and sheep.

The South Achefer district is located in the highlands of the Amhara region in northern Ethiopia.

There are opportunities for transitioning towards Regenerative Inclusive Food Systems. Regenerative practices such as mulching, composting, integration of animals in the farm, and using locally available resources are given high attention. However, agriculture in South Achefer also faces challenges. Soil acidity and lack of soil fertility are great problems. There are barriers to agribusiness development. Some policies are also a hindrance, such as non-inclusive finance, one-size-fits-all extension services, an underdeveloped private seed sector and non-inclusive fertiliser markets. There is a lack of infrastructure, affecting market linkage, and access to innovation and technology are major bottlenecks to the system. The effects of climate change (extreme events, very high and very low rainfall) and land degradation have led to constraints in crop productivity.

The South Achefer Food System Innovation Platform

A Food System Innovation Platform was established by Stichting Wageningen Research (SWR)-Ethiopia, an international NGO that has been registered in Ethiopia since March 2021, and Bahir Dar University (ethiopialivinglab.org/home-south-achefer). The Food System Innovation Platform (also referred to as South Achefer Living Lab) is organised at *woreda* (district) level and is supported by an ad hoc think-tank structure at regional and national levels.

Establishment of the platform was preceded by a stakeholder mapping in the area. Based on that, 14 people were selected to be members of the platform. Government representatives of the district are involved, as are farmers, cooperatives and businesses and financial institutions, as well as researchers of Stichting Wageningen Research (SWR)-Ethiopia and Jimma University, Amhara Regional Agricultural Research Institute (ARARI) and Bahir Dar University. The latter had a key role in testing and validating innovations. The Ministry of Agriculture played a key role in mobilising farmers, replicating and mainstreaming key achievements and providing technical backstopping. These partners are also connected with other stakeholders such as farmer cooperatives, microfinance institutions, seed enterprises, agro-dealers, and NGOs.

The members of the platform built a vision together on where to go. The vision is that by 2031, Regenerative Inclusive Food Systems contribute to agricultural sector transformation in South Achefer and to an Ethiopian pathway to prosperity. The platform wants to contribute to that through generation, validation and dissemination of knowledge and practices on Regenerative Inclusive Food Systems. The platform members jointly establish an agenda for development in villages, and co-creating innovations together with farmers, extension service, businesses and researchers.

There is great potential. Following earlier Dutch-funded projects such as CASCAPE and REALISE, many farmers in South Achefer adopted potato production instead of maize. That was a game changing innovation. It led to relatively high yields and substantial financial returns. Farmers used the extra income to increase their dairy cattle herd. However, unlike maize, potato does not provide a by-product to feed animals. Thus, farmers started to plant Rhodes grass for animal feed. Government extension officers recommended using mineral fertilisers due to depleted soils. However, the fertiliser only feeds the crop and will not solve soil health problems such as soil acidity and nutrient depletion. To overcome this challenge, the South Achefer Living Lab promoted the use of compost and reduce the recommended fertiliser dose by half. The transition to using lower amounts of external inputs contributes to regenerative practices and reduces the cost of production significantly.

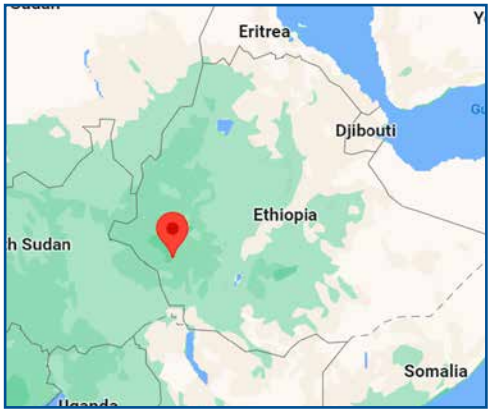
Evidence changed behaviour and policy

Combining compost and reduced amounts of mineral fertiliser was shown to be possible without compromising crop yield. This evidence-based approach proved to be a powerful way to change farmers' behaviour. Moreover, based on this, high-level policy makers were convinced to change policy on the message extension officers were to give to farmers. Instead of recommending mineral fertilisers, the use of compost is now also being recommended. This brings a major change to many farmers, and allows the system to gradually transform into circular agriculture.

Teppi, Ethiopia

Food system opportunities and challenges

Farmers in Teppi district, part of Southwestern Region in Ethiopia, mainly grow coffee, and other perennial spice crops, such as ginger, turmeric, black pepper and cardamom. Farmers also grow food crops such as maize, teff, wheat and pulses, and they rear cattle. Demand for improved technology and external inputs, such as artificial fertilisers, is increasing. Traditional farming practices prevail, yet farmers are trying new crops and practices. Regenerative agriculture has great potential. Advancing the production of spices in the existing coffee-based farming system provides opportunities to improve financial livelihoods, while also advancing the natural resource base in terms of soils, biodiversity and carbon sequestration.



Teppi is located in the Southwestern Ethiopia Regional State.

Challenges are extreme poverty, heavy dependence on traditional farming practices and lack of sufficient extension support. Also, there are low literacy levels, weak coordination and collaboration among key value chain actors and poor market linkage.

The Teppi Food System Innovation Platform

A Food System Innovation Platform was initiated by Jimma University and the NGO Stichting Wageningen Research (SWR)-Ethiopia under the name Teppi Living Lab (www.ethiopialivinglab.org/teppi-2/).

The Teppi Living Lab was started after a stakeholder mapping had been done. Around 15 stakeholders were identified as members of the Living Lab at regional, zonal and *woreda* (district) levels. The vision building led to a focus on enhancing sustainable agricultural development within local production systems. Because the production of black pepper was identified as having particular potential, the vision made with the stakeholders in the Teppi Living Lab is for the region to become recognised as a sustainable black pepper producer in East Africa.

Spices such as turmeric, ginger, black pepper and cardamom are commonly grown. The farming systems of these spices are characterised by low external inputs. Traditional farming practices are still widely used. Black pepper production is increasing in popularity among smallholder farmers in the region and can form an opportunity for Regenerative Inclusive Food Systems.

Regenerating forest with black pepper

In an innovation case, farmers are experimenting with more sustainable practices to grow black pepper, and increase their livelihoods. This includes youth and women, who are already playing a role in the production process. The case focuses on the regeneration of degraded forests through agroforestry with black pepper, a forest-friendly spice that provides multiple ecosystem services. Work was done on improving agronomic practices for better productivity. Also, the processing of black pepper was improved. Farmers were linked to the market, bypassing brokers that exploit farmers. The Teppi Species Agricultural Center, the Bebeka private farm, the *woreda* agriculture office, private processors, and farmers are coming together to address the challenges under the Teppi Living Lab.

West Nile, Uganda

Food system opportunities and challenges

Most people in West Nile region live in rural areas, and 80% depend on subsistence farming for their food and nutrition security. However, most people need additional income from non-agricultural activities as well to make ends meet. Most farmers mix crops like cassava, maize, groundnuts, beans, sesame, sorghum, millet and soybean. Almost all agricultural production in West Nile is rainfed.

The Arua district is in the NorthWestern part of Uganda. The district is part of the West Nile region, which borders with Congo and South-Sudan.

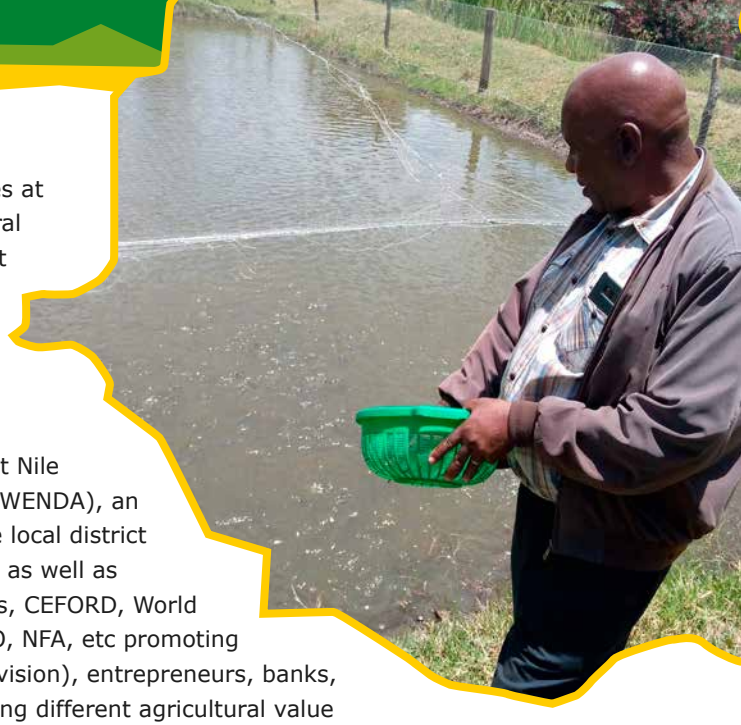
The great influx of refugees from South Sudan and the Democratic Republic of Congo in the region has resulted in increased pressure on resources such as land and water for agriculture. Refugee settlements may also affect food markets in various ways, for example through surplus food aid being sold at the local markets.

The city of Arua is nearby, offering a market, and recently, there has been a shift towards the production of high value crops like onions, tomatoes, cabbages, spinach, and kale. This has been accompanied by a shift toward use of improved agro-inputs.

There are also great challenges. Food insecurity is widespread. The West Nile food system is under threat due to land degradation, unreliable rainfall due to climate change and low and declining soil fertility. Crop and livestock productivity is low, and use of agro-inputs is unsustainable.

The West Nile Food System Innovation Platform

The West Nile Food System Innovation Platform was recently (November 2022) launched as the West Nile Innovation Hub. It is being convened and developed by Muni University, which has also recently established a Faculty of Agriculture and Environmental Sciences. The day-to-day activities of this Food System Innovation Platform (FSIP) are carried out by a team of five staff, three (3) from Muni University and two (2) from Kilimo Kisasa. The staff from Kilimo Kisasa are based in the West Nile Innovations Hub offices at NARO, Abi Zonal Agricultural Research and Development Institute (Abi-ZARDI).



Current and prospective members of West Nile Innovation Hub include representatives of the West Nile Development Association (WENDA), an umbrella association of the local district Governments of West Nile, as well as various NGOs (SNV, Caritas, CEFORD, World Vision, DCA, ZOA, TUNADO, NFA, etc promoting activities related to WNIH vision), entrepreneurs, banks, and individual farmers, along different agricultural value chains. Researchers involved are from Muni university, Wageningen University & Research as well as the National Agricultural Research Organisation (Abi-ZARDI). These partners contribute through their knowledge, research capacities and network. They help to develop supporting policy, training, communication, and engagement activities. Examples of activities are communication training for small enterprises where they learn how to make short, powerful messages using a mobile app. Other trainings were on best agronomic practices, soil and water conservation, business planning and management and fish feed management and formulation using alternative feed ingredients.

Through the hub, businesses, investors, NGOs, research organisations and farmers work together to enhance innovations fostering regenerative and inclusive food systems. The focus of the West Nile Innovation Hub is on the pressing challenge of managing the impact of a growing population on natural resources, in a region that is already experiencing the impacts of climate change. The innovation agenda that has been co-developed with members of the innovation hub wants to answer three questions. How can healthy diets be provided to all, now and in the future? How can food production be increased and diversified? And how can we regenerate the degraded environment?

The hub currently supports three innovations and their networks: on circular farming, fisheries and aquaculture, and commercial climate-smart vegetable production for improved diets and income. In the last one, farmers in refugee settlements and host communities are targeted. All three innovation cases actively assess the effects of different innovations and learn from their experiments. The innovation cases also share their insights and receive feedback from their networks as a way of improving the innovations. The West Nile Innovation Hub supports their progress to maturity and helps to identify the success factors so that they can be copied, improved and scaled up.

Zero Waste Innovation Case

In the West Nile Region in Uganda, farmers used to mostly grow tobacco. Tobacco growing needed a lot of mineral fertilisers and contributed to deforestation and soil degradation. A concerned and innovative farmer wanted to find alternative livelihoods and motivate the community towards more regenerative type of agriculture.

The zero-waste concept from his farm, Wole Mixed Farm, has inspired farmers to adopt a much more circular farming system, in which waste from one part of the farm became input in another part of the farm. Animal manure from the cow and piggery unit is used to generate biogas, a source of clean energy that can be used for cooking. The bio-slurry that is the result of generating biogas is used to feed black soldier fly larvae, and some is used to make liquid manure. The black soldier fly larvae, which are also fed on rotten fruits and vegetables, are a source of protein in feeds for the fish, chicken, and pigs on the farm. Some of the vegetable waste is used to feed rabbits, whose urine is collected as a fertiliser and pesticide for the vegetables on the farm.

The West Nile Innovation Hub was also inspired by this innovation case and its networks and has since provided support for its pathway towards Regenerative Inclusive Food System. The support provided includes participation in workshops on regeneration and inclusivity, trainings on organic manure and alternative fish feeds ingredients, technical support on black soldier fly production, learning journeys to national institutions in the agricultural sector and linkage to market opportunities, other innovators in the region, input dealers and banks for finance. This has contributed to the development of the innovation case. The farm regularly receives visitors who seek to learn from their experience, including government institutions and departments, schoolchildren, community members, youth, women, NGOs and refugees. The lead innovator has dedicated Sunday as a free learning day to everyone who visits the farm to learn, whereas he charges a modest facility fee on other days to facilitate effective trainings of the different visitors. This has been shown to change the minds of many towards regenerative and inclusive practices elsewhere in the food system.

Zero waste innovation: black soldierfly production.

Lessons learnt

During the first phase of the REFOOTURE project, we have worked and reflected intensively on how the transformation towards Regenerative Inclusive Food Systems could best be facilitated. We have learnt that Food System Innovation Platforms can indeed play a catalytic role in this transformation.

Building capacities, motivation and engagement

Staff of Wageningen University & Research provided training to various people. The teams of partners managing the Food System Innovation Platforms received training and skills development on co-innovation, on multi-actor partnerships and on making pitches and power messages to communicate experiences and evidence on innovation, as well as on developing business plans aimed at supporting financial self-sustainability. The partners have co-developed websites for each country and designed logos and power messages that have been shared through various types of social media.

These skills were used in supporting farmers, innovators and other stakeholders in the day-to-day practice of working on the innovation cases. Innovation vouchers were given to farmers and innovators, creating for them the opportunity to get training and tailor-made advice. Innovators also participated in power message trainings, to improve their ability to tell their stories, do local marketing and call for action.

Various in-country exchange visits were organised within countries to contribute to building capacity on how to form Food System Innovation Platforms. For example, the team from the West Nile Innovation Hub had an in-country visit to Fort Portal city in Western Uganda to learn about governance issues and best practices from a multi-stakeholder partnership which has been in existence for more than eight years. This increased appreciation of the role that a Food System Innovation Platform can play in addressing challenges in the food system.

Main results of the Food System Innovation Platforms

The Food System Innovation Platforms are led by Tewodros Tefera in Ethiopia, Professor Bockline Bebe and Tom Owino in Kenya and Robert Kajobe in Uganda.

These partners identified the following as the main results of the Food System Innovation Platforms:

Knowledge generation and brokering: the innovation cases became more market ready and increased in number over the project periods.

Co-creation and co-innovation: farmers, entrepreneurs, researchers, practitioners and policy makers contribute to the co-creation process of innovations.

Demonstration of best agricultural and agribusiness practices: practices related to compost, integrated soil fertility management, waste recycling, improved agronomic practices, business plan and business incubation are tested, validated and demonstrated.

Facilitation of information flows: storytelling, power messages, short videos, leaflets, brochures and posters were prepared and shared with Living Lab members and other stakeholders.

Momentum for change was created or increased in agribusiness, in regenerative practices and in policy.

Guidance of action research, policy, and investment: Areas of long-term engagement were identified, on which research, policy and investment should focus. These are soil health, biodiversity, improved nutrition and healthy diets, decent income and livelihood improvement.

Business incubation: examples with potential for replication and scaling were identified, such as organic foods, compost business, dairy business, Rhode's grass seed business.

Capacity development and building entrepreneurial skills: Unpacking the concepts of Regenerative Inclusive Food Systems, Food System Innovation Platforms and the regular meetings and virtual events contributed greatly to networks' capacity. The members are capacitated with tailor-made trainings, learning journeys and experience exchange.

Policy development and advocacy: special field visits, workshops and meetings organised for policy makers and decision-makers created a conducive environment, awareness raising and commitment to change.

The in-country exchange visits also contributed to reflection on what the concept of Regenerative Inclusive Food Systems should be about in that particular situation.

International cross-country exchange visits among the three East African countries also led to better understanding of the concept of Regenerative Inclusive Food Systems as a group. Lessons were shared on the differences and similarities in establishing Food System Innovation Platforms in the different countries. Each country team hosted such a visit, and presented and discussed their work with their peers from the other countries.

Finally, the capacity of the REFOOTURE team itself was built through bi-monthly mini conferences. These were an opportunity to jointly reflect on our own concepts and activities, especially the operationalisation of the theory underlying Food System Innovation Platforms, concepts and assumptions.

Building capacities, motivation and engagement during COVID

The REFOOTURE project ran during a period when travelling was restricted due to COVID-19. That challenged the team to explore new forms of hybrid communication. We were able to organise multiple virtual, blended, and local live meetings. Advances in online working opportunities have contributed a great deal to this and the project benefited from those developments. The virtual field visits were a great way to promote hybrid knowledge sharing and engagement between actors from all over the world. REFOOTURE's communication and exposure support to members of Food System Innovation Platforms made them enthusiastic and willing to share their knowledge and experience. It gave them a chance to express their needs and a platform to share what they are doing. COVID-19 prevented the Northern partners from travelling, which meant the Southern partners had more opportunity to take a leading role. This represented a new starting position to work towards newly balanced relationships. In the next phase of REFOOTURE we want to move further towards more equal partnerships.

Establishing the Food System Innovation Platforms in the region

From the start, the establishment of the Food System Innovation Platforms was the result of a careful process in which multiple stakeholders cooperated. In the initiation phase the partners discussed the reason for applying Living Lab working modes (see glossary) within the Food System Innovation Platforms. They also did a mapping of similar initiatives already taking place and policy ambitions already in place, in order to define the added value of the Living Lab. This made clear why the Living Lab would be needed.

A small group of colleagues was formed in each of the countries. These functioned as a kind of inception body that did preparatory work and launched the platforms. After that, the official secretariat started and included a broader alliance of stakeholders. Processes, activities, and timelines were laid out and activity plans were developed.

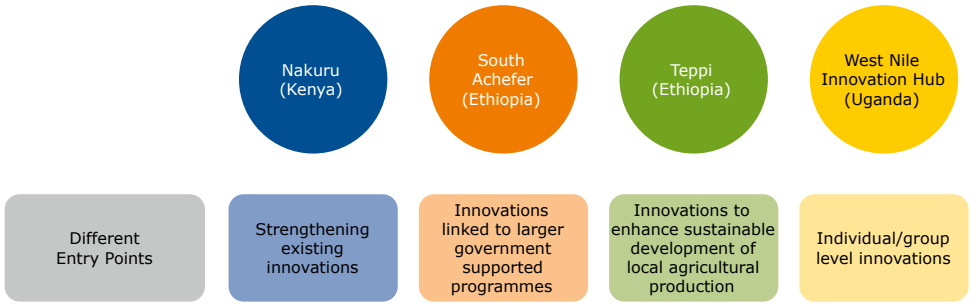
Next, another mapping was done, aimed at identifying challenges in the food system. The mapping was based on an analysis of the strengths, weaknesses, opportunities and threats (SWOT analysis) of the local food systems. From this, potential partners and stakeholders to be identified in the Food System Innovation Platforms were identified.

The main lesson learnt here was that it is essential to link this SWOT-analysis to the characteristics of Regenerative Inclusive Food Systems. We did this by using the Regenerative Inclusive Food Systems principles as guidelines (for more information see the booklet on Regenerative Inclusive Food Systems). We developed a framework that outlines the strengths, weaknesses, opportunities and threats for each geographical area in terms of the principles. For example, one of the strengths of West Nile region is that it is a centre of regional trade; trade is important in the sense of place of people. Following this analysis, the teams were able to identify specific opportunities for a Regenerative Inclusive Food System in the region.

Multiple ways to start-off a Food System Innovation Platform

From the experiences in the three countries, we learnt that there are multiple ways to start off the establishment of Food System Innovation Platforms. Contexts differ for each region, and the Living Lab working mode needs to be adapted to these. Key is that a bottom-up approach is followed in forming the Food System

Innovation Platforms. For example, given the culture of innovation in Nakuru, the Nakuru Food System Innovation Platform focused on strengthening existing innovations related to organic fertilisers, short value chains and circularity. As a result, the Food System Innovation Platform started by linking those innovators, bringing in government representatives at a later stage. The South Achefer Food System Innovation Platform was different, because innovation cases were already linked to larger government supported programmes. So here, the emergence of the platform was driven by linkages with government representatives, knowledge institutes and the private sector. The West Nile Innovation Hub is university driven, with individual innovations as entry points. There is no 'one-size-fits-all' manual on establishing the Food System Innovation Platforms: each one needs a tailor-made approach adapted to local contexts and developments.



Different ways of starting a Food System Innovation Platform.

Inclusion is key

Food System Innovation Platforms need to be inclusive. We learnt that Food System Innovation Platforms operate in a political context with a potentially far-reaching impact on the food system. It is therefore crucial that these platforms are inclusive, to ensure the various stakes are understood and acknowledged and the relevant expertise is on board.

Inclusion is important in different ways. In the first place, when working towards Regenerative Inclusive Food Systems, inclusion of nature itself is important. Nature should get a seat at the table and be seen as a stakeholder itself. Inclusion also means the need for truly transdisciplinary teams in the Food System Innovation Platforms. This means the involvement of thinkers (research and academia), doers (farmers, cooperatives, and private enterprises), and enablers (extension system, policy makers) who all play important roles in further developing Regenerative Inclusive Food Systems. Inclusion means that practical knowledge is regarded as just as important as scientific insights; farmers are indispensable knowledge holders within Food System Innovation Platforms. Apart from conventional actors that might need new capacities, non-conventional stakeholders with new insights and perspectives should also be welcomed. Examples from this phase include Kenya's Equity Bank or refugees and schools in Uganda.

Organising dialogue and visioning Regenerative Inclusive Food Systems is important

We learnt that it was important to organise dialogues within the Food System Innovation Platforms on the concept of Regenerative Inclusive Food Systems in the initial phase. Joint understanding is the basis for action towards system transformation. We need to talk to understand each other. Dialogue was needed to develop a common vision on what regeneration or inclusion means. The answers to the question *What are Regenerative Inclusive Food Systems?* are context and space specific. Learning journeys and cross-country visits were facilitated to explore questions such as *What is an innovation*? and *How do you innovate* and *What is the role of the Living Lab working mode in achieving RIFS?*. Dialogues added new insights and value.

> "Making timelines is part of the visioning process, part of the multi stakeholder process. Timelines and workplans create a platform for self-monitoring, make clear what your targets are and who is doing what and when that should be finished. Then one can check for oneself: have I done what I said I would do? That motivates people. We make a strategy ourselves, we made up a vision we believe in and we want to keep ourselves to it. Nobody needs to remind you because you will be eager to do it."
>
> Tom Owino, Regional Coordinator Kenya, REFOOTURE project

The platforms are key mechanisms for building a vision and setting goals towards Regenerative and Inclusive Food Systems. They help in identifying location-specific place-based potentials, guiding co-creation and implementation of innovations, monitoring the impact of these and the innovation process itself, and in adapting activity plans as well as the longer term understanding of what Regenerative Inclusive Food Systems are, based on reflection and learning.

Creating a local vision is essential

Work done through the Food System Innovation Platforms on vision-building with communities, made clear that visioning is an essential aspect. Food System Innovation platforms play a core role in mapping the place-based potential ('Story of Place'), developing a community-based joint agenda for change and visioning a regenerative, inclusive future for their food system. In doing this, it is key that all stakeholders talk on an equal basis on what they see as the way to go forward.

The visioning exercise with the community around Menengai Forest in Nakuru resulted in important lessons. Initially, the question *Who is involved and how?* is more important than the end result. Any social inequalities should be made explicit in a sensitive way and discussed in a safe environment. Therefore, visioning needs to start from disadvantaged individuals and groups who are highly dependent on the place in question for their survival and livelihood, before engaging in multi-stakeholder meetings. Trust building and honesty were key to the process. It also proved to be vital to give mother nature – in this case called Mother Menengai – a real place at the table. This was done by using role play and song, allowing participants to imagine the forest as an actor with its own interests. The experiences gained in the multistakeholder process in Menengai were used – through trainings – to inspire 10 other innovation cases to set a common vision.

Self-Monitoring and learning

Learning what regenerative and inclusive innovations actually mean to people and what works and what not, and why, is important. The direction of a transformation towards a Regenerative Inclusive Food System is not fixed, and the agenda and vision need to be adjusted along the way. To be able to adapt, monitoring, evaluation and learning is crucial. Participatory monitoring, evaluation and learning is required in all innovation cases and at Food System Innovation Platforms level. What and how to track should be defined, carried out and interpreted by the members of a particular Food System Innovation Platform and the communities working on an innovation themselves. In the next phase of the REFOOTURE project, we want to further support local communities to develop the capacity to track the change towards a regenerative and inclusive vision.

Food System Innovation Platforms collect evidence and stories on the ground of how their interventions are catalysing the transformation towards Regenerative Inclusive Food Systems. This evidence will be documented on the evidence platform, which is available online: (https://evidence-platform.online) where more experiences, lessons and evidence will be shared in future.

Financial vulnerability

We found that there is an abundance of local entrepreneurship, spirit, and drive among farmers, innovators and researchers around the existing innovations that we worked on through the Food System Innovation Platforms. However, the first phase of the REFOOTURE project also made clear that innovation is a fragile process. In the day-to-day life of a start-up, access to finance and the management of the business are often an issue.

Future outlook

Enhancing innovation at a larger scale

It is important for Food System Innovation Platforms to link with other innovative initiatives and transformations in the wider food systems. During the first phase of the REFOOTURE project, the Food System Innovation Platforms were increasingly seen as a space for learning and reflection, co-creation and innovation. In the next phase of REFOOTURE, we will build more evidence on what works, what not and why, and exchange these lessons learnt with other initiatives in the food system. Conversely, we will bring lessons learnt and opportunities from 'outside' initiatives in to REFOOTURE. This will take place in an inspiring way. Our ambition is that REFOOTURE plays an active role in contributing to the acceleration of a more inclusive and more regenerative transformation of the wider food system.

Governance

Guidance on governance is important. Setting up the governance models of the Food System Innovation Platforms was an important step in the development of the platforms themselves. Partners in REFOOTURE have brainstormed and engaged in dialogues aimed at understanding what future governance models for the Food System Innovation Platforms of Nakuru, West Nile, Teppi and South Achefer could look like. Lessons for the future are that it is important to take different geographic levels (district, regional and national) into account in governance of the platforms. Also, governance of the Food System Innovation Platforms should include any actor who 'has a stake'. Members can offer support based on a variety of roles and skills. The governance model also includes a vision for resource mobilisation to make sure that the Food System Innovation Platform will be self-sustainable in the long term.

Financial sustainability

Food System Innovation Platforms need to explore financial sustainability. Financial independence and economic stability are considered key aspects of the future sustainability of Food System Innovation Platforms by stakeholders at all levels. Food System Innovation Platforms and their partner networks have tried to mobilise support among a broad and influential stakeholder group to promote a wider uptake of regenerative and inclusive innovations and to take on board and utilise the insights created. This involves outreach and linking to other initiatives that could stimulate Regenerative Inclusive Food Systems in the East Africa region. We will make use of smart connections, for example with youth leaders and government officials, to inspire decision-makers. Moreover, partners agreed that there should be support for translating innovation experiments into products and services that improve the investment return, for example, through business mentorship bootcamps, financial literacy training, and engagement of the banks in developing inclusive finance and trade options.

Enabling conditions

Food System Innovation Platforms can play a key role in improving enabling conditions at an overarching level through their activities at the national, regional and local scale. They can address bottlenecks in smallholder farm development and agribusiness innovation by increasing access to markets, finances and knowledge. They can also perform an advocacy role in relation to regulations and policies. For example, results from field experiments in Ethiopia have opened up high-level policy dialogues, resulting in policies that enable the use of compost and reduce the need for mineral fertiliser, contributing to overall soil health. In this case, evidence created entry points for commitments to regenerative development that go beyond isolated interventions. Other policy dialogues and interactions with the private sector have taken place during the first phase of the REFOOTURE project. All of these revealed a strong interest among policy makers and businesses to explore the concept of Regenerative Inclusive Food Systems and to collaborate with the Food Systems Innovation Platforms.

Glossary

REFOOTURE approach

The REFOOTURE project is based on the hypothesis that advancing Regenerative Inclusive Food Systems requires increasing capacity for the self-regeneration of food systems. Food System Innovation Platforms started as Living Labs and provide the institutional structure for the necessary transdisciplinary facilitation, collaboration, experimentation and learning to develop Regenerative Inclusive Food Systems.

Food systems

A food system is defined as "all the elements and activities related to producing and consuming food, and their effects, including economic, health, and environmental outcomes." The system is also influenced by social, political, technological, economic and environmental drivers. Applying the food systems approach to analyse current issues allows for useful interdisciplinarity and broadening of perspectives, which aids in the mapping of the impacts of main drivers on outcomes such as food security, for example for determining the limiting factors in achieving it and providing a list of elements to be addressed when trying to improve it.

Food System Innovation Platforms

In REFOOTURE, we defined Food System Innovation Platforms as innovation ecosystems – a social environment in which the development towards more regeneration and inclusion in food systems can be accelerated. Food System Innovation Platforms started under the name Living Labs (*see definition below*). They accelerate the movement towards Regenerative Inclusive Food Systems. Within Food System Innovation Platforms, a variety of actors from civil society, government, the private sector and research can jointly support existing innovation towards more regeneration and inclusivity, facilitate the co-creation of new initiatives aimed at regeneration and inclusivity, and improve the enabling environment for innovation. We see Food System Innovation Platforms as a vehicle on the pathway towards Regenerative Inclusive Food Systems. Food System Innovation Platforms aim to facilitate cooperation between different stakeholder categories, provide support in innovation, and to organise adaptive management in the entire development process towards Regenerative Inclusive Food Systems.

Living Labs

The European Network of Living Labs defines Living Labs as: "… open innovation ecosystems in real-life environments using iterative feedback processes throughout a lifecycle approach of an innovation to create sustainable impact." In REFOOTURE we use the term to refer to a specific mode of working.

Regenerative Inclusive Food Systems (RIFS)

Regenerative Inclusive Food Systems are socio-ecological systems that work innovatively with nature to ensure vibrant and healthy agro-ecosystems which enable resilient livelihoods and food and nutritional security for all. In the fair and just transition towards such Regenerative Inclusive Food Systems, no being is left behind. Our vision is to improve the quality of life through Regenerative Inclusive Food Systems.
In Regenerative Inclusive Food Systems, people produce food responsibly in a way that ensures food security and restores the environment by improving soil health, biodiversity, carbon stocks and crop diversification, thus regenerating and advancing the natural resource base. Inclusiveness of the food system means it provides a fair income for farmers, agribusinesses and upstream and downstream sectors including consumers. It also means the food system provides accessible, affordable, and nutritious food.

Principles underlying Regenerative Inclusive Food Systems

The transition towards Regenerative Inclusive Food Systems (RIFS) is seen as a long-term process that can be guided by regenerative principles. We have conceptualised a set of five integrated and non-hierarchical RIFS principles: (1) sense of place and purpose, (2) social-ecological design for innovation, (3) connectedness, (4) fair, just and inclusive transition and (5) design for renewal.

Innovation & Innovation case

In REFOOTURE, innovations are generally identified as all the practices and activities in the food systems that could lead to regeneration and inclusiveness. In the REFOOTURE project, the identification of innovation cases is an important activity in the development of the Food System Innovation Platforms. These innovations can be something completely new but also something that was already present in the area. For example, indigenous practices that are considered 'innovations' because people start to re-adopt them.

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Citation

Froebrich, J & A.E. Groot (Eds) (2023). REFOOTURE: Food System innovation Platforms. Wageningen University & Research, Wageningen, The Netherlands. https://doi.org/10.18174/629016

Text Joris Tielens

English language editing Sara Butler

Graphic design identim.nl

Photography The REFOOTURE team

Publisher Wageningen University & Research

DOI 10.18174/629016

ISBN 978-94-6447-667-5

How can the transformation towards a Regenerative Inclusive Food System in East Africa be supported and facilitated? This booklet explains how the REFOOTURE project created Food System Innovation Platforms, which supported the capacities, opportunities and motivations of farmers, innovators and entrepreneurs in the food system to make a change, based on evidence from innovations in the field.

This booklet is part of a series of three booklets. The other two booklets are on the concept of Regenerative Inclusive Food Systems (DOI 10.18174/629017) and on the REFOOTURE project itself (DOI 10.18174/629015). Each booklet can be read on its own.

Funded by IKEA Foundation

Supported by UNIVERSITY FUND WAGENINGEN