



PAFO-COLEAD INNOVATIONS SERIES: Innovations and successes of African farmer-led businesses and SMEs

SESSION N°13

Producers' and SMEs innovations in agroecology for sustainable agrifood systems

Wednesday 10 May 2023, 12:00-14:00 UTC

Online ([Zoom](#))

English-French-Portuguese interpretation available

1. Context

The agricultural sector is facing unprecedented challenges due to multiple health, food, climate and energy crisis and their impact on food and nutrition security, biodiversity and natural resource availability. In the context of rapid population growth, urbanisation and consumers' expectations, there is a strong need for transforming food production and consumption patterns, promoting sustainability and increasing the resilience of smallholders.

Food systems encompass the entire range of value-chain actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries. These value-addition activities are part of the broader economic, societal and natural environments in which they are embedded.

The food system is composed of sub-systems (e.g. farming system, waste management system, input supply system, etc.) and interacts with other key systems (e.g. energy system, trade system, health system, etc.). Therefore, a structural change in the food system might originate from a change in another system; for example, a policy promoting more biofuel in the energy system will have a significant impact on the food system.

A sustainable food system (SFS) is a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental food resources for future generations are not compromised. This means that:

- It is profitable throughout (economic sustainability);
- It has broad-based benefits for society (social sustainability); and



- It has a positive or neutral impact on the natural environment (environmental sustainability).¹

A SFS lies at the heart of the United Nations' Sustainable Development Goals (SDGs). Adopted in 2015, the SDGs call for major transformations in agriculture and food systems in order to end hunger, achieve food security and improve nutrition by 2030. To realise the SDGs, the global food system needs to be reshaped to be more productive, more inclusive of poor and marginalised populations, environmentally sustainable and resilient, and able to deliver healthy and nutritious diets to all. These are complex and systemic challenges that require the combination of interconnected actions at the local, national, regional and global levels.

Although there is a consensus about the necessity of transitioning towards sustainable food systems, there are currently multiple approaches in practice, each with varying stakeholders and methods of implementation. Sustainability in one context may not be applicable in the same way in another, as the agroecological and socio-economic factors differ.

Agroecology is one of these approaches that is holistic and integrated, and that simultaneously applies ecological and social concepts and principles to the design and management of sustainable agriculture and food systems. It seeks to optimise the interactions between plants, animals, humans and the environment while also addressing the need for socially equitable food systems within which people can exercise choice over what they eat and how and where it is produced. Agroecology is concurrently a science, a set of practices and a social movement. It has evolved as a concept over recent decades to expand in scope from a focus on fields and farms to encompass the entirety of agriculture and food systems. It now represents a transdisciplinary field that includes the ecological, socio-cultural, technological, economic and political dimensions of food systems, from production to consumption.²

Agroecology is therefore an integrated and holistic approach for achieving food systems transformation. Farmers and other value chain actors not only contribute to economic growth but also create knowledge, develop innovations and participate in building agrifood systems that are socially, economically, and environmentally resilient.

The core principles on which agroecological practices build upon (i.e.: diversity, efficient use of natural resources, nutrient recycling, natural regulation and synergies) also support adaptation and resilience to climate change.

2. Agroecological practices and innovations from farmers and entrepreneurs

In Sub-Saharan Africa, inadequate food production is still the major cause of food and nutrition insecurity. In this context, smallholders and value chain actors often choose a diversification approach in crops and sectors to strengthen their resilience.

Knowledge, skills and resources (including extension and advisory services) are critical to support the transition to more sustainable practices and adopt new production, processing and marketing approaches by smallholders, small and medium-sized enterprises (SMEs), startups etc.

¹ FAO. Sustainable food systems. Concept and framework. <https://www.fao.org/3/ca2079en/CA2079EN.pdf>

² FAO. [Sustainable and circular bioeconomy in the climate agenda: Opportunities to transform agrifood systems](#). 2022.



Soil fertility management, water management and soil erosion control are critical at the production level to transition to more sustainable farming practices which use resources more efficiently, and are less dependent on seasonal external inputs, such as chemical fertilisers and pesticides.

Many innovations adopted by farmers and entrepreneurs have proven to contribute to the development of sustainable agrifood systems from an agroecology lens, such as:

- **Agroforestry:** This is a land use system that integrates trees, shrubs, and crops on the same land to create a diversified and resilient ecosystem. Agroforestry provides multiple benefits such as soil conservation, carbon sequestration, and improved water quality.
- **Conservation agriculture:** This approach involves minimising soil disturbance, maintaining soil cover, and crop rotation to improve soil health, water retention, and nutrient cycling. Conservation agriculture also reduces the use of synthetic fertilizers and pesticides, thus promoting environmental sustainability.
- **Integrated pest management:** This is a holistic approach to managing pests that combines different methods such as biological control, cultural practices, and chemical control to minimise the use of pesticides and protect the environment.
- **Agroecological zoning:** This is a planning tool that helps to identify the most suitable land use and management practices for a particular area based on its ecological characteristics, socio-economic conditions, and cultural values. Agroecological zoning can contribute to reducing conflicts over land use and promoting sustainable development.
- **Participatory research and extension:** This approach involves working closely with farmers, local communities, and other stakeholders to co-create knowledge and develop solutions that are adapted to local conditions and needs. Participatory research and extension can promote social equity, local empowerment, and the sustainability of agrifood systems.

Practices that contribute towards creating agroecological farms include crop-rotation, intercropping, varietal mixtures, organic fertilisation, biological control of pests, integration of natural elements into or around agricultural fields, reduced or no-tillage to improve soil health, use of cover crops, green manure, agroforestry, and other diversified practices. Short supply chains, the diversification of production, access to markets and fairness in the value chain support the resilience of agroecological farming systems.

The substantial amount of food that is lost and wasted from production to consumption has severe implications in terms of food and nutrition security and economic losses, but also negative impacts on the environment, use of land and water resources, biodiversity, climate change³, and pollution.

Many entrepreneurs support the circular economy by transforming agricultural food waste into productive resources (i.e. biofertilisers, renewable energy...). Waste valorisation - the process of reusing and recycling waste materials into useful products - also increases market competitiveness, employment creation and the generation of income along the food chain. Diversification within the agricultural sector through increased processing is a solution for local SMEs to develop value-added and quality food products, while also reducing post-harvest losses and food waste along the value chain and generating increased revenues.

³ FAO. [Sustainable and circular bioeconomy in the climate agenda: Opportunities to transform agrifood systems](#). 2022.



3. The way forward

The complexity of food systems requires a more holistic and coordinated approach to finding solutions for meeting the SDGs. Many food security and nutrition challenges are complex problems whose solutions require interdisciplinary and integrated approaches by all stakeholders involved.

Entrepreneurs operating in agri-value chains need to benefit from policy measures and incentives to transition to more sustainable practices and participate to the green economy. Capacity building is at the heart of the agroecological approach and support is needed to scale up skills development in new production, distribution and consumption models based on agroecological principles benefiting the value chain actors.

Inclusiveness and participation of all stakeholders in the design and implementation of sustainable approaches adapted to local contexts have to be encouraged.

Peer to peer learning and exchange of best practices are the core of the Innovations Sessions that PAFO and COLEAD organise. Farmers and entrepreneurs will share how they contribute to agroecological transitions and what innovations they are developing which could inspire others.

Key points for discussion:

- What are the key innovations that farmers and entrepreneurs develop and adopt contributing to agroecological transitions?
- What type of investments are needed to support entrepreneurs to contribute further to agroecology?
- What incentives can be provided to SMEs and smallholders to better acquire technical skills needed to contribute to the circular economy?



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Agenda

12:00-12:10 Introduction: *Dr. Babafemi Oyewole, CEO, PAFO*

Moderator: *Isolina Boto, Head of Networks and Alliances, COLEAD*

12:10-13:00 Panel: farmers and entrepreneurs practices supporting agroecology

- *Robin Ndung'u, Founder and CEO, Kisumeo Organics Limited, Kenya*
- *Costantine Edward, Co-founder and Managing Director, AgriLife, Tanzania*
- *Ella Inzahbo, Founder, AGROTECH, Chad*
- *Edmond Ng'walago, Founder and CEO, Ngwala Inventions, Tanzania*

13:00-13:20 Discussants

- *Rosinah Mbenya, Country coordinator, Participatory Ecological Land Use Management (PELUM), Kenya*
- *Koudasse Afantchawo, President, ROPPA Youth College and Coopérative Terre Bénie, Togo*

13:20-13:50 Debate

13:50-14:00 Key takeaways and conclusion

