



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

Session n°24
Innovation and technology adoption by entrepreneurs
Tuesday 9 September 2025

HIGHLIGHTS

About the PAFO-COLEAD Innovations Series

Launched in November 2020 by the Pan-African Farmers' Organization – PAFO and COLEAD, the **Innovations Series showcase the successes of African farmer-led businesses and SMEs**, highlighting transformative innovations across value chains. These sessions foster knowledge exchange, promote sustainable business models, and connect entrepreneurs with key enablers in policy, finance, and business development. By leveraging local, regional, and export opportunities, the series contributes to resilient and inclusive food systems across the continent.

Session n°24, held on 9 September 2025, discussed innovation and technology adoption by entrepreneurs in the African agrifood sector. The discussion highlighted real-world experiences from pioneering entrepreneurs and insights from supporting institutions on how to accelerate the uptake of impactful innovations. The session attracted **464 participants**, registered to exchange best practices, access valuable resources and connect with a diverse network of entrepreneurs and industry experts.

All information about the session is available on [Agrinnovators](#) entrepreneur's platform.
Recording of the session: [Link](#)

About innovation and technology adoption in African agrifood systems

Africa's agrifood sector remains the backbone of its economy, contributing up to 30% of GDP and employing more than 60% of the workforce. Yet the continent imports over USD 50 billion of food annually despite having 60% of the world's uncultivated arable land. The paradox is largely explained by low productivity, high post-harvest losses, and fragmented value chains challenges that innovation and technology adoption can help overcome. Entrepreneurs across the continent are piloting solutions ranging from climate-smart fertilizers and hydroponics to digital platforms and circular economy initiatives. These innovations offer pathways to enhance soil health, reduce deforestation, cut waste, increase resilience to climate shocks, and generate employment opportunities.

Yet the adoption gap remains significant. Key barriers include limited access to finance, high equipment cost, poor rural infrastructure, weak policy frameworks, and gaps in digital literacy. In addition, trust in digital tools remains low in many communities, underscoring the need for inclusive design, local adaptation and demonstration efforts to foster behaviour change.

The session underscored that to scale impact, innovation must be inclusive, aligned with farmers' realities, and embedded in enabling ecosystems that combine finance, policy support, skills development, and partnerships.

Key points discussed

Climate-smart and circular innovations

Farmers are adopting technologies such as organic fertilizers, protected cultivation, and circular economy solutions that transform agricultural waste into valuable products. These innovations improve yields, sequester carbon, and generate income, while addressing climate challenges and environmental degradation.

Digital platforms for efficiency and inclusion

Digital ecosystems are emerging as powerful enablers for connecting farmers, SMEs, and cooperatives to inputs, equipment, finance, training, and markets. For these platforms to be truly inclusive, attention must be given to digital literacy, the affordability of smartphones and connectivity, and building trust with rural communities. When well-implemented, such one-stop digital services can transform fragmented smallholder systems into efficient networks, improving access to knowledge, finance, and buyers while unlocking the full potential of digital agriculture.

Tools, talents, and trust as adoption bottlenecks

Even the best innovations risk failure if the right infrastructure, skills, and trust from end users are not in place. Ensuring affordable access, providing training, and engaging farmers in co-design are essential for long-term adoption.

Financing constraints and ecosystem gaps

Access to finance remains a major barrier, with most agrifood SMEs unable to secure affordable loans or investment. Entrepreneurs called for blended finance, de-risking mechanisms, and tailored credit solutions to expand adoption. Stronger linkages between innovators, farmer organisations, policymakers, and research institutions are also critical to reduce fragmentation and accelerate scaling.

Policy and enabling environment

The role of policy emerged strongly as a driver of scaling. Regulatory modernization frameworks are urgently needed to support the adoption of emerging technologies, from drones and digital marketplaces to biotechnology and organic fertilizers. Harmonisation across countries is also crucial, especially under the AfCFTA, to reduce administrative bottlenecks for cross-border trade. Governments should extend subsidies to organic fertilizers, provide clear implementation frameworks for climate-smart agriculture, and promote evidence-based policies grounded in adoption data.

Partnerships and collaboration

Collaboration between entrepreneurs, farmer organisations, research institutions, multinationals, and development partners unlocks synergies that no actor can achieve alone. Effective partnerships enable the bundling of complementary technologies, scaling distribution through cooperatives, and validating products with large companies. Africa's innovation ecosystem must be collaborative by design, bringing together public, private, and community actors to co-create solutions that are inclusive and sustainable.

Meet the businesses and entrepreneurs



Samuel Rigu
Ceo Safi Organic



Bethlehem Dejene
Ceo Zafree Papers



Steve Hoda
Ceo AfriCereal Group



Nathaniel Edjeba
BC Soiless Farm Lab

Samuel Rigu, Founder, Safi Organics Ltd

Samuel Rigu leads Safi Organics, a Kenyan social enterprise that produces carbon-negative, locally made fertilizers. By converting farmers' crop residues into organic fertilizers, Safi reduces input costs, restores degraded soils, and creates rural jobs. The company works with youth aggregators and smallholder networks across Kenya, combining circular economy principles with climate-smart solutions. Since 2015, Safi has sequestered over 20,000 tons of CO₂ and upcycled more than 35,000 tons of waste.

Samuel highlighted Africa's urgent soil degradation crisis, where 65% of soils are degraded and yields have declined by up to 34% in 20 years. Safi Organics addresses this by producing affordable, soil-specific fertilizers that increase yields by 30% and incomes by 50%. He shared testimonies from farmers who have doubled avocado incomes or reduced coffee costs through Safi's products. Looking forward, Safi plans to reach 200,000 farmers within two years and expand village-based production units across Africa, while tapping into carbon credit markets as a new revenue source.

Bethlehem Dejene, CEO, Zafree Papers

Bethlehem Dejene is the Founder & CEO of Zafree Papers, a clean-tech company transforming agricultural waste into 100% tree-free paper products, reducing deforestation while creating value for over 10,000 smallholder farmers. An Economics graduate from Addis Ababa University, she has successfully expanded her venture from Ethiopia to Zambia with plans for wider African scale-up.

Bethlehem shared how Zafree transforms millions of tons of discarded banana stems into tree-free packaging, simultaneously creating organic fertilizer from extraction by-products. She emphasized that partnerships with fast-moving consumer goods companies and breweries are critical for scaling impact and revealed that Zafree is piloting with multinational firms to verify quality and price competitiveness. She also stressed the importance of circular economy approaches ensuring that nothing goes to waste and invited collaborations on scaling production, fertilizer development, and regional expansion into Uganda and Tanzania, Africa's largest banana producers.

Steve Hoda, Co-Founder, Africereal Group Sarl

Steve HODA is the CEO of AfriCereal Group, a pioneering company revolutionizing agriculture through technology, mechanization, and training. For over ten years, he has dedicated his expertise to improving farmers' livelihoods and professionalizing agricultural practices with innovative solutions. Under his leadership, AfriCereal launched IKENA, a multiservice platform positioned as a phygital one-stop shop, connecting, equipping, and supporting producers, cooperatives, and agribusinesses for greater efficiency and sustainability.

Steve presented Ikena's platform as a one-stop-shop for modern agriculture, offering mechanization rentals, market access, e-learning, and financial scoring to unlock credit. He reported yield improvements of up to 30% and waste reduction of 15% among participating SMEs. The company's ambition is to become the "Uber + Alibaba of agriculture" in West Africa, reaching 1.5 million producers by 2027. He invited collaboration with fertilizer innovators and highlighted the importance of digital inclusion for women and youth, supported by partnerships with Smart Africa and the Mastercard Foundation.

Nathaniel Edjeba, Business Coach, Soilless Farm Lab

Nathaniel Edjeba is a Business Coach at Soilless Farmlab, a technology-driven agribusiness specializing in hydroponics, smart irrigation, and protected cultivation systems. The company trains, equips, and incubates youth agripreneurs while producing and processing vegetables, herbs, and spices for both local and export markets. With expertise in agribusiness, project management, and farm operations, Nathaniel has mentored over 70 agribusinesses and supported innovative financing models, including cluster fish farming.

Nathaniel shared how Soilless Farm Lab combines production, training, processing, and commodity trading to accelerate technology adoption. Through free three-month training cycles, 1,000 youths are trained each quarter in greenhouse construction, hydroponics, and agribusiness skills. Beyond training, Soilless supports graduates with seeds, inputs, and markets, ensuring long-term adoption. The lab aims to expand to four

Nigerian states and export to the UK and US, positioning technology-enabled youth agripreneurs as the drivers of Africa's agricultural transformation.

Meet the organisations supporting businesses



Ousmane Ndiaye
Ceo ACMAD



Dr. Daniel Kyalo
Snr. Manager AATF

African Center of Meteorological Application for Development (ACMAD), represented by Ousmane Ndiaye, Acting Director General

ACMAD is the African leading regional institution for meteorology and climate services. Based in Niamey, Niger, it provides weather forecasts, early warning systems, and climate projections to support agriculture, water management, and disaster risk reduction across the continent. It was represented by Dr. Ousmane Ndiaye, Acting Director and an expert in climate prediction and its practical applications. Under his leadership, district-level working groups in Senegal have been strengthened to translate climate data into actionable services for farmers and fishers through rural radio, mobile messaging, and social media.

Mr. Ndiaye underscored the importance of climate information services for intelligent farming decisions in a changing climate. With advanced satellite data and AI, forecasts can now guide when to plant, apply fertilizers, weed, or harvest reducing waste and avoiding crop losses. He shared examples from Senegal where farmers avoided costly fertilizer losses thanks to timely rainfall forecasts. He also emphasized seasonal forecasts and climate projections as tools for crop choice, insurance schemes, and investment decisions, urging stronger collaboration between meteorological institutions and farmers' organizations.

Agrobusiness, Policy and Commercialization, AATF, represented by Daniel Kyalo Willy, Snr. Manager

AATF is a pan-African foundation headquartered in Nairobi that supports the development and commercialization of agricultural technologies across 23 African countries. It works with seed companies, agro-dealers, digital innovators, and farmer organizations to scale adoption through market-driven models. The foundation was represented by Dr. Daniel Kyalo Willy, Senior Manager for Policy, Agribusiness, and Commercialization. Dr. Kyalo is an agricultural economist specializing in technology deployment and commercialization, policy reform, and value chain development.

Dr. Kyalo stressed that innovation alone is not enough: adoption and sustainability are the real challenges. He presented five pillars for success: (1) bundling technologies, (2) public-private partnerships, (3) de-risking through blended finance and insurance, (4) empowering youth and women, and (5) enabling policies. He cited AATF's success in scaling drought-tolerant maize and hybrid rice, and in supporting SMEs to deliver mechanization services. He concluded that innovation is the fuel for Africa's next generation of entrepreneurs, transforming farmers into business leaders and SMEs into engines of inclusive growth.

Resources

1. Reports and Studies

AFREXIMBANK, Food imports and food security in Africa, 2024,

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World Bank Group, From fields to markets: the role of digital platforms in West Africa's agricultural success,

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<https://openknowledge.worldbank.org/entities/publication/acb134b2-3b82-5ccf-87a0-d6882a53d92e>

World Economic Forum, 2024, <https://www.weforum.org/stories/2024/06/science-based-strategy-key-africa-agricultural-transformation/>

2. Trainings and other opportunities

Agribusiness Digital Transformation Training Course (TrainingCred), https://trainingcred.com/training-course/agribusiness-digital-transformation-training?utm_

Climate Smart Food 2025, <https://climatesmartfoodsummit.com/live/en/page/home>

Climate-Smart Agriculture Basics (AICCRA / CGIAR Webinar / module), <https://aiccra.cgiar.org/events/training-climate-smart-agriculture-basics-introduction-practices-technologies>

Climate-smart crop production (FAO eLearning), <https://elearning.fao.org/course/view.php?id=436>

e-Learning on Digital Agriculture (World Bank Group / WBGx / AFCHub), https://academy.worldbank.org/en/planet/agriculture/e-learning-on-digital-agriculture?utm_

Introduction to Climate-Smart Agriculture (FAO eLearning), <https://elearning.fao.org/course/view.php?id=439>

Precision Agriculture and Technology Online Course, https://trainingcred.com/course-schedules/precision-agriculture-and-technology-training/virtual/?utm_

Webinar on Climate-Smart Agriculture (CSA) for Increasing Inclusive Employment (Green Policy Platform), <https://www.greenpolicyplatform.org/webinar/webinar-climate-smart-agriculture-csa-increasing-inclusive-employment>

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COLEAD: Isolina Boto – Head of Networks and Alliances, Ahoefa Soklou – Project Officer, Nina Desanlis-Perrin – Project Officer,



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