



# THE FRUIT AND VEGETABLE INDUSTRY SERIES



## Session n°13 The role of AI in the fruit and vegetable sector

Tuesday 12 May 2026

### HIGHLIGHTS

#### About the Fruit and Vegetable (F&V) Industry Series

In the context of the United Nations (UN) 2021 International Year of Fruits and Vegetables, the OECD Fruit and Vegetables Scheme and COLEAD launched an online series highlighting the importance of the F&V sector. The series aims to share knowledge on markets and operators, promote sustainable production and healthy diets, and showcase innovations from both European and Southern countries.

This 13th session focused on the use of Artificial Intelligence to improve decision-making and performance across fruit and vegetable value chains. Speakers explored how AI is already being applied in areas such as crop monitoring, quality assessment, traceability, market intelligence and business operations, while also looking at the practical conditions needed for these tools to be adopted more widely.

The session attracted strong interest, with 361 registrants seeking insights, resources, and opportunities to engage with key actors in the sector.

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

Recording of the session: [Link](#)

#### Key points discussed

##### AI is becoming increasingly relevant for fruit and vegetable value chains

The session highlighted how AI is already supporting different parts of the sector, from crop monitoring and business decision-making to quality control, traceability and logistics. Its value lies in helping operators make better use of data and respond more effectively across the value chain.

##### AI can help improve post-harvest performance and reduce losses

Given the perishability of fruits and vegetables, AI offers important opportunities to improve harvest planning, quality assessment, shelf-life management, cold chain monitoring and logistics. These applications can help reduce food loss and waste while improving product quality and market readiness.

##### Data, infrastructure and skills remain key conditions for adoption

Effective AI adoption depends on reliable data, digital infrastructure, connectivity, technical skills and the capacity to integrate new tools into existing business operations. These



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conditions remain uneven, particularly for smallholders, SMEs and operators in developing contexts.

### AI solutions need to be practical, inclusive and context-adapted

The discussion underlined the importance of developing AI tools that respond to real operational needs. For AI to support the sector at scale, solutions must be accessible, affordable, easy to use and adapted to the realities of farmers, SMEs and value chain actors in different contexts.

### Trust and collaboration are essential to scale AI responsibly

Scaling AI in the fruit and vegetable sector requires collaboration between technology providers, businesses, farmers, research institutions and development actors. It also requires attention to trust, data governance and the role of human expertise in interpreting and acting on AI-generated insights.

### Meet our speakers



**Mercedes CAMPI**  
Agricultural Policy  
Analyst, OECD



**Elad Mardix**  
CEO & Co-Founder,  
Clarifresh,



**Justin Bakoubolo**  
Founder and AI  
Researcher, Umbaji



**Esther Kimani**  
CEO, FarmerLifeline  
Technologies, Kenya



**Andrea Barrios  
Nakato Delia**, Data  
Manager, Enimiro,  
Uganda

#### *Mercedes CAMPI, Agricultural Policy Analyst, OECD*

Mercedes placed AI within the broader transformation of agriculture and food systems. She linked the discussion to the “triple challenge” facing the sector: **ensuring food security, addressing environmental pressures, and maintaining inclusive and economically viable rural areas**. She showed how AI can support decision-making across the value chain, from crop production to logistics and market analysis, by processing large volumes of data and turning them into actionable insights. Her intervention also underlined that AI adoption is not only a technology issue. Infrastructure, connectivity, data governance, interoperability, skills, trust and collaboration are all essential if AI is to support sustainable productivity growth without widening existing gaps between larger farms and smaller operators.

#### *Elad Mardix, CEO & Co-Founder, Clarifresh*

Elad focused on one of the most concrete pain points in fresh produce supply chains: **quality mismatch between suppliers and buyers**. He explained that rejections and price renegotiations often happen because quality specifications are interpreted differently, inspections remain subjective, and decisions are made with limited data. Clarifresh’s approach responds to this by converting buyer specifications into digital quality standards and using computer vision through a mobile app to assess size, colour and defects. Quality grades can then be generated within seconds. His contribution showed how AI can move quality control from individual judgement to shared, data-based decision-making across fields, packhouses, distribution centres and retail points.

*Justin Bakoubolo, Founder and AI Researcher, Umbaji, Togo*

Justin brought a strong perspective from the African context. He focused on how AI can help reduce losses and improve producers' access to value in fruit and vegetable markets. He explained that when too much time passes between harvesting and consumption, fruits and vegetables are more likely to deteriorate, leading to higher losses.. He also presented Umbaji's work on early warning systems and multilingual communication tools. A distinctive point from his intervention was the importance of making AI accessible through channels that farmers already use, including SMS, phone calls and WhatsApp. He also stressed the importance of local languages, explaining that Umbaji has developed a language model for Togolese languages. His contribution showed how AI can be designed around local realities rather than imported as a generic solution.

*Kenya Esther Kimani, CEO, Farmer Lifeline Technologies, Kenya*

Esther shared a practical example of how AI can respond to a problem she experienced directly in a farming community: heavy crop losses caused by pests and diseases. She presented FarmerLifeline's solar-powered crop pest and disease detection device, which uses machine learning and computer vision to continuously monitor crops. When a pest or disease is detected, the system sends farmers an SMS in their local language, with recommendations and quantities to apply. This makes the technology usable even for farmers without smartphones. Her contribution strongly illustrated that inclusive AI is not only about advanced technology. It is also about affordability, timing, language and the ability to reach farmers before losses become irreversible.

*Nakato Delia, Data Manager, Enimiro, Uganda*

Delia presented a very operational view of what it means to build AI-ready systems in a Global South agribusiness context. Enimiro works with smallholder farmers in Uganda and uses digital systems to support traceability, export compliance and operational management. Delia explained that traceability starts with the farmer: registration, GPS data, farm visits, crop monitoring, harvest intake and batch information are linked to create structured databases. These databases can later support forecasting and AI analysis. Her intervention was particularly valuable because it showed the practical conditions behind AI adoption: good data quality, continuous training of field teams, offline-capable tools for rural areas, farmer trust, and the need for human judgement when field realities contradict model outputs.

## Resources

### 1. Report and studies

OECD, 2026, [https://www.oecd.org/en/publications/progress-in-implementing-the-european-union-coordinated-plan-on-artificial-intelligence-volume-2\\_3ac96d41-en.html](https://www.oecd.org/en/publications/progress-in-implementing-the-european-union-coordinated-plan-on-artificial-intelligence-volume-2_3ac96d41-en.html)

World Bank, 2025, [Digital Agriculture Roadmap Playbook](#)

FAO, 2025, [Agrifood Systems Technologies and Innovations Outlook \(ATIO\): Driving Technologies and Innovations Towards Equitable Agrifood Systems Transformation](#)

World bank, 2025, [Shaping the Deep-Tech Revolution in Agriculture](#)

OECD, 2024, [The Impact of Artificial Intelligence on Productivity, Distribution and Growth](#)

African Union, 2024, [Digital Agriculture Strategy and Implementation Plan 2024–2030](#)

UNECE, 2023, [Code of Good Practice: Reducing Food Loss and Ensuring Optimum Handling of Fresh Fruit and Vegetables Along the Value Chain](#)

FAO, ITU, 2022, [Status of Digital Agriculture in 47 Sub-Saharan African Countries](#)

## 2. Trainings and other opportunities

[World Bank Academy E-Learning on Digital Agriculture](#)

[World Bank Academy AgTech: Harnessing Technologies for Sustainable Food & Agriculture Systems](#)

[FAO eLearning Academy](#)

[ITU AI for Good / FAO: AI for Agriculture: Shaping Standards for Smart Food Systems](#)

[OECD.AI Policy Observatory: AI Principles and Responsible AI Policy Resources](#)

[UN Women – COLEAD South-South Series, Session 8 : Artificial intelligence for women entrepreneurs](#)

### Coordination team for these series:

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