



IICA-COLEAD Caribbean Agrifood Business Series

Session n°17: Innovation and technology adoption by entrepreneurs in the Caribbean

Thursday 24 April 2025 – 14:00-16:00 UTC / 10:00-12:00 AST

[Online \(Zoom\)](#)

Live interpretation in English, French, Spanish and Portuguese

1. Context

The agrifood sector is a crucial component of the Caribbean economy, contributing significantly to employment, food security, and rural development. However, traditional agricultural methods and business models face growing challenges, including climate change, limited access to financing, and market volatility. Innovation and technology adoption can help entrepreneurs overcome these challenges, enhance productivity, and remain competitive in the global market.

Innovation in the agrifood sector includes advancements such as precision agriculture, digital platforms for market access, and value-added processing technologies. The application of modern farming techniques, such as hydroponics and aquaponics, enables more efficient use of land and water resources thereby contributing to address the region's vulnerability to climate change. Additionally, information and communication technologies (ICTs) facilitate improved supply chain management, better market forecasting, and real-time monitoring of farm activities, thus enhancing decision-making and operational efficiency.¹

Moreover, the integration of innovative practices aligns with regional and global trends toward sustainable agriculture. Consumers are increasingly demanding eco-friendly and ethically produced goods requiring increased traceability, presenting an opportunity for Caribbean agribusinesses to differentiate themselves through sustainable innovation. By leveraging new technologies, entrepreneurs can expand their market reach and contribute to the region's economic resilience.

¹ FAO (2021). The Future of Food and Agriculture – Trends and Challenges. Food and Agriculture Organization of the United Nations.

2. Opportunities for Caribbean entrepreneurs in the agrifood sector to increase their business through the use of innovation and technology

Innovation and technology offer various pathways for agrifood entrepreneurs to optimize their business operations, reach new markets, and increase profitability. The following opportunities demonstrate how technology can stimulate growth within the Caribbean agrifood industry.

Smart Agriculture and Precision Farming

The adoption of smart agriculture solutions, such as GPS-enabled tractors, drones, and Internet of Things-based sensors, enables farmers to optimize resource use, monitor soil conditions, and automate irrigation systems. These technologies reduce costs and increase yields by ensuring optimal growing conditions.²

Digital Marketplaces and E-Commerce Platforms

With increasing internet penetration, digital platforms provide a cost-effective way for farmers and agribusinesses to connect with consumers, bypassing traditional middlemen. E-commerce platforms like AgriMarketplace and mobile payment systems facilitate direct-to-consumer sales, offering farmers better prices for their produce while enhancing consumer convenience.³

Value-Added Processing and Agri-Tech Startups

Entrepreneurs can benefit from adopting food processing technologies that extend shelf life, improve packaging, and create new product lines. Small agribusinesses can explore innovative food preservation techniques such as freeze-drying, vacuum sealing, and bio-packaging, which increase export potential and reduce food waste.⁴

Renewable Energy and Climate-Smart Solutions

Energy costs remain a major concern for agrifood businesses in the Caribbean. Entrepreneurs can explore renewable energy solutions such as solar-powered cold storage units and bio-digesters to reduce operational costs and improve sustainability. Climate-smart agricultural practices, including drought-resistant crop varieties and water-efficient irrigation techniques, further enhance resilience to climate change.⁵

² World Bank (2022). Digital Agriculture: The Future of Food Production. The World Bank.

³ IDB (2020). Agricultural Innovation in Latin America and the Caribbean. Inter-American Development Bank.

⁴ CTA (2019). The Digitalization of African Agriculture Report 2018–2019. Technical Centre for Agricultural and Rural Cooperation

⁵ FAO. (2021). Digital agriculture: Transforming agrifood systems in small island developing states. Food and Agriculture Organization of the United Nations.

3. Some challenges for adopting innovation and technology in Caribbean businesses

While the benefits of technology adoption are clear, several barriers hinder Caribbean entrepreneurs from fully leveraging innovation in the agrifood sector.

High Initial Investment Costs

Many technological solutions require significant capital investment, which is often prohibitive for small and medium-sized enterprises (SMEs). The lack of affordable financing options and limited access to credit further exacerbate this issue (IDB, 2020).

Limited Technical Expertise and Training

A critical barrier to technology adoption is the limited technical knowledge among farmers and agribusiness owners. Many entrepreneurs lack access to training programs on the effective use of digital tools and modern farming techniques, reducing the potential benefits of innovation.⁶

Inadequate Infrastructure and Connectivity

Reliable internet access, electricity, and transportation networks are essential for implementing modern agribusiness solutions. However, in many rural areas of the Caribbean, these infrastructure deficits hinder the effective use of smart agriculture technologies and digital platforms.⁷

Policy and Regulatory Challenges

Government regulations and bureaucratic processes can sometimes slow down the adoption of new technologies. Unclear policies on data ownership, digital payments, and agricultural innovation create uncertainty for entrepreneurs looking to invest in new technologies.⁸

4. Unlocking the full business potential of Caribbean agrifood entrepreneurs using innovation and technology

Caribbean entrepreneurs in the agrifood sector can unlock their full business potential by embracing technology and innovation to enhance productivity and sustainability. Digital platforms, precision agriculture, and smart farming techniques have enabled SMEs in the region to optimize resource use, reduce waste, and improve supply chain efficiency. For example, the integration of Internet of Things (IoT) devices and data analytics helps farmers monitor soil health, weather patterns, and crop conditions in real time, leading to improved yields and reduced environmental impact (FAO, 2021). Additionally, the adoption of e-commerce and blockchain technology allows agrifood businesses to connect directly with

⁶ CTA (2019). The Digitalization of African Agriculture Report 2018–2019. Technical Centre for Agricultural and Rural Cooperation.

⁷ World Bank (2022). Digital Agriculture: The Future of Food Production. The World Bank.

⁸ *Ibid.*

consumers, ensure transparency in trade, and expand beyond local markets, fostering economic growth and resilience in the sector (IICA, 2022).⁹

Moreover, investment in agritech startups and digital financial services has provided Caribbean agrifood entrepreneurs with increased access to funding and business development resources. Fintech solutions such as mobile banking, crowdfunding, and digital payment platforms have addressed long-standing financial barriers, allowing small-scale farmers and food processors to secure capital, invest in innovation, and scale operations (World Bank, 2020). Additionally, agribusiness incubators and technology-driven training programs have been instrumental in equipping entrepreneurs with the skills and knowledge necessary to navigate global trends, climate change challenges, and consumer demands (Caribbean Development Bank [CDB], 2023). By leveraging technological advancements, Caribbean agrifood entrepreneurs are not only enhancing operational efficiency but also positioning themselves competitively in the global marketplace, ensuring long-term sustainability and economic transformation in the region.

5. The way forward

Innovation and technology adoption hold immense potential for transforming the agrifood sector in the Caribbean. By leveraging smart agriculture, digital marketplaces, and value-added processing, entrepreneurs can enhance productivity, increase market access, and build more resilient agribusinesses. However, challenges such as high investment costs, inadequate infrastructure, and regulatory hurdles must be addressed through targeted policy interventions and stakeholder collaboration. With the right strategies in place, the Caribbean can unlock the full potential of its agrifood sector, fostering economic growth and food security in the region.

⁹ IICA. (2022). *Blockchain and e-commerce in agrifood supply chains*. Inter-American Institute for Cooperation on Agriculture.

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Agenda

14:00-14:05 Introduction

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

14:05-15:00 Panel 1: Opportunities for Caribbean entrepreneurs in the agrifood sector to increase their business through the use of innovation and technology

- *Jill Donk, Manager, ZUDO Tropical Fruit, Suriname*
- *Mahalia Joseph, Managing Director, 3BA Allamanda Enterprise Limited, Trinidad and Tobago*
- *Tim Hauber, Farm Development Officer, Centre for Training and Innovation, The Bahamas*
- *Richéda Speede, Managing Director, Blue Shell Productions, Barbados*

Moderation: *Allister Reynold Glean, Representative in Barbados, IICA*

15:00-15:30 Panel 2: Insights from experts

- *Fayaz Shah, Manager of Science, Technology and Innovation, Caribbean Agricultural Research and Development Institute (CARDI)*
- *Dr. Ruel Ellis, Lecturer, University of the West Indies*

15:30-15:50 Q&A session

15:50-16:00 Conclusion and way forward



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