



IICA-COLEAD Caribbean Agrifood Business Series

Session n°14:

Innovations of Caribbean entrepreneurs in climate resilient technologies

Wednesday 11 September 2024 – 14:00-16:00 UTC

10:00-12:00 AST (time in Barbados) | 16:00-18:00 CET (time in Brussels)

[Online \(Zoom\)](#)

Live interpretation in English, French, Spanish and Portuguese

1. Context

Caribbean entrepreneurs have long demonstrated resilience and innovation; however, the COVID-19 pandemic underscored their importance and necessity. The agrifood systems in the Caribbean face significant vulnerabilities due to climate change, which includes risks from prolonged droughts, extreme heat, heavy rainfall and flooding, storm events, and erratic weather patterns.¹ The COVID-19 pandemic had a profound impact on the region's agrifood sector, leading to a decline in agricultural production as a result of lockdowns and other emergency measures. Experts in the field advocate for the adoption of modern agricultural technologies as a strategy to mitigate the pandemic's effects, thereby ensuring food security and enhancing food productivity.² The Inter-American Development Bank (IDB) highlights that resilience and innovation are vital for the sustainability of agribusinesses.³ It notes that agrifood chains in Latin America and the Caribbean responded robustly to the pandemic by implementing various innovations to maintain operations.

This session on the innovations of Caribbean entrepreneurs in climate-resilient technologies will examine initiatives that bolster resilience and mitigate the impacts on food availability, trade, and agricultural supply chains. The discussion will focus on the examination of the following questions:

1. What are the key practices and innovations (technological, institutional, managerial) that promote sustainable agriculture adapted to climate conditions, ensure nutritional food security, and enhance resilience to climate change?
2. What are the critical factors that influence the successful implementation of innovations in climate-resilient technologies?
3. Which organisations, policies, and initiatives facilitate the adoption and execution of innovations in climate-resilient technologies?

¹ FAO, 2024. [Resilient Caribbean Initiative](#).

² Mahmood et al. [The Effects of COVID-19 on Agriculture Supply Chain, Food Security, and Environment: A review](#), Peer J. 2024.

³ IDB, 2023. [Lessons on Resilience and Innovation in Agri-Food Systems in Latin America and the Caribbean](#).



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2. Global and regional innovations in climate resilient technologies in the agrifood sector

An article published in The Journal of Agriculture and Food Research (2024)⁴ discusses how innovative technologies and practices within the agrifood sector employ climate-smart solutions that not only alleviate the impacts of climate change but also improve the financial well-being of producers. The authors emphasize several advancements that help mitigate climate change effects, empower producers to make informed choices, optimise agricultural processes, and gain access to equitable market opportunities:

1. The creation of climate-resilient crop varieties capable of enduring extreme weather, resisting pests and diseases, and sustaining high yield levels.
2. The implementation of agroforestry, regenerative agriculture, and vertical farming methods that enhance soil health, decrease water usage, and promote biodiversity.
3. The utilisation of precision agriculture through advanced technologies such as drones for remote sensing, precision irrigation, variable rate technology, crop rotation, cover crops, smart pest and disease management, and conservation tillage.
4. The role of digital platforms, data analytics, and blockchain technology in improving supply chain efficiency and expanding market access for agrifood producers.

The Inter-American Institute for Cooperation in Agriculture (IICA), in its 2022 Climate Change report,⁵ emphasises the importance of Caribbean innovation and technology initiatives. These initiatives encompass programmes in The Bahamas, Belize, Dominica, Haiti, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago, aimed at establishing a robust foundation for a climate-responsive agricultural sector through the engagement in Nationally Determined Contributions (NDCs). The Bahamas is concentrating on improving capacity in Good Agricultural Practices (GAPs) by assessing farming techniques and analysing water and soil quality in ecologically sensitive areas. Trinidad and Tobago is creating a practical, farmer-centred model for applied research and the dissemination of knowledge regarding agricultural innovation and climate-smart practices. Grenada is executing demonstration plots to illustrate regenerative agricultural methods and is forming a knowledge-action network to enhance the skills of backyard farmers for sustainable food production. Suriname is increasing agricultural productivity by upgrading irrigation and drainage systems, enhancing institutional capabilities, revising the agricultural census, and strengthening information systems.

3. Opportunities and challenges for Caribbean agribusinesses

Various obstacles hinder Caribbean entrepreneurs from adopting climate-resilient technologies. These include limited skill sets, insufficient management capabilities, and a lack of entrepreneurial acumen at the farm level. This situation is compounded by limited financial resources and poor access to credit. According to an IICA discussion paper⁶ presented at the 2021 United Nations Food Systems Summit, the Caribbean countries are missing out on some opportunities presented in the innovative revolution for climate resilience.

One area for improvement is the use of biotechnology which serves as a crucial foundation for tackling the issue of low productivity in agricultural investments by focusing on suitable crop and

⁴ Tetede et al. [Recent Climate-smart Innovations in Agrifood to Enhance Producer Incomes through Sustainable Solutions](#). Journal of Agriculture and Food Research, 2024.

⁵ IICA, 2022. [Towards a More Sustainable, Climate Resilient and Low-carbon Agriculture Sector. Caribbean.](#)

⁶ IICA, 2021. [Agriculture as a Catalyst for Strengthening Food Systems Resilience in The Caribbean.](#)

animal genetics. This approach can maximise the use of genetic resources while implementing enhanced practices that can lead to increased yields, better nutritional quality, and more cost-effective and environmentally sustainable production across various crop and livestock systems.

The handling of agricultural waste, which presently incurs expenses for agricultural and agro-processing activities throughout the Caribbean, has the potential to be transformed into a revenue-generating resource through the implementation of suitable recycling technologies. The capacity to generate income from agricultural waste will provide opportunities for individuals with suboptimal agricultural land, while simultaneously decreasing the initial presence of pests and diseases that thrive in improperly disposed agricultural waste. Consequently, this leads to a reduced reliance on pesticides, mitigating adverse impacts on biodiversity and human health, and enhancing the cost-effectiveness of agricultural systems in the Caribbean.

4. Future directions for climate smart innovation and technology

The outlook for climate-smart innovations within the agrifood sector is highly encouraging. Experts in this field anticipate that, in addition to the current advancements driven by digital technologies, quantum computing has the potential to transform agriculture through sophisticated data analysis.⁷ This capability will greatly enhance our comprehension of crop dynamics, leading to more precise predictions and tailored farming approaches. Moreover, the rise of bioinformatics and genetic editing technologies may signal a significant shift in crop development practices. The ability to adapt crops to particular environmental conditions could soon become feasible, resulting in improved yields while reducing resource inputs. Digital technology is set to significantly impact the future of agriculture in the Caribbean by streamlining the connection between agricultural producers and consumers.⁸ These advancements provide vital tools, information, and e-commerce functionalities that support prompt decision-making and boost productivity. A wide array of digital solutions, encompassing internet applications, mobile technologies, artificial intelligence, and online services, are readily available. The ongoing enhancement of broadband services and investments in information technology infrastructure across the Caribbean make the integration of these technologies highly achievable. Transformations in technology and innovation within policy frameworks are also essential for building resilience in farming systems, increasing agricultural productivity, and achieving the objective of reducing the Region's substantial food import expenditure by 25% by 2025, as advocated by the CARICOM Heads of Government.

⁷ Tetede et al. [Recent Climate-smart Innovations in Agrifood to Enhance Producer Incomes through Sustainable Solutions](#). Journal of Agriculture and Food Research, 2024.

⁸ IICA, 2021. [Agriculture as a Catalyst for Strengthening Food Systems Resilience in The Caribbean](#).

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Agenda

10:00-10:05 Introduction

- Jeremy Knops, Délégué Général, COLEAD

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

10:05-11:00 Panel: climate resilient innovations from Caribbean entrepreneurs

- Christina Pooler, Owner, Zantarea Farms, Barbados
- Itajah Simmons, Owner, Simmons Pepper & Vegetable Farm, Antigua and Barbuda
- Jameson Alphonse, Owner, Green Haven Fresh Farm, Saint Lucia
- Christopher Nesbitt, Founder and Director, Maya Mountain Research Farm, Belize

Moderation: Allister Reynold Glean, Representative in Barbados, IICA

11:00-11:30 Insights from support programmes

- Carlinton Burrell, CEO, Caribbean Climate Innovation Center (CCIC)
- Dr. David Bynoe, United Nations Development Programme (UNDP) GEF Small Grants Programme (SGP) Representative, Barbados

11:30-11:50 Q&A session

11:50-12:00 Conclusion and way forward



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