



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

### SESSION N°14

#### Climate-resilient practices and innovations by agrifood SMEs

Wednesday 30 August 2023, 12:00-14:00 UTC

Online ([Zoom](#))

*English-French-Portuguese interpretation available*

#### 1. Context

Agrifood is one of the sectors most vulnerable to climate change impacts due to changes in temperatures and rainfall patterns, posing numerous threats to agricultural production, access to markets, biodiversity and food security. Extreme weather events such as droughts, floods and cyclones negatively impact agricultural productivity, water availability and soil health, which interrupt production and raise the risk of diseases and pests, such as the locust swarms.

With further warming, climate change risks will become increasingly complex and more difficult to manage. Climate-driven food insecurity and supply instability, for example, are projected to augment with increasing global warming, interacting with non-climatic risk drivers such as competition for land between urban expansion and food production, pandemics and conflict.<sup>1</sup> Unpredictable rainfall and changes in seasons will make it difficult for smallholder producers to plan ahead, leading to lower yields. There will also be increased costs for farmers to adapt to extreme weather events for several reasons, including higher prices of raw materials, declining markets, disrupted supply chains, and increased insurance costs.

Agriculture is also a significant contributor to climate change and unsustainable practices need to be reversed.

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<sup>1</sup> IPCC, 2023: [Summary for Policymakers. In: Climate Change 2023: Synthesis Report. A Report of the Intergovernmental Panel on Climate Change](#). Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, 36 pages.



Climate change hits small and medium-sized enterprises (SMEs) and small businesses on multiple fronts. SMEs and business need to increase their resilience and shift towards a low-carbon transition.

Companies in developing countries increasingly recognize the link between climate risks and business survival. In a recent International Trade Center (ITC) survey of 1,360 SMEs in Sub-Saharan Africa, 68% acknowledged environmental risks as significant for their operations. Just 54% of companies interviewed in developed countries said climate change posed short-term risks. In developing and emerging countries the percentage is considerably higher, ranging between 68% and 83% of companies responding that climate change posed short-term risks.<sup>2</sup> Companies that export are more likely to invest in climate adaptation. In the survey of SMEs in Sub-Saharan Africa, 48% of exporters were investing in flood prevention systems and other adaptation measures, compared to just 39% of non-exporters.<sup>3</sup> This shows how SMEs' involvement in international value chains can help increase the adoption of practices that strengthen climate resilience.<sup>4</sup> While climate change impacts value chain actors, it can also offer new opportunities for them and lead to innovations in the agrifood sector.

## 2. Actions needed to transition to climate-smart food systems

The Intergovernmental Panel on Climate Change (IPCC) has concluded in 2023 its Sixth Assessment Report cycle, which includes six reports covering various aspects of climate change, its impacts, and a [Synthesis Report](#). The report offers significant insights and recommendations for policymakers, industry, and civil society to tackle climate change.

Examples of effective adaptation options in agriculture include: cultivar improvements, on-farm water management and storage, soil moisture conservation, irrigation, agroforestry, community-based adaptation, farm and landscape level diversification in agriculture, sustainable land management approaches, use of agroecological principles and practices and other approaches that work with natural processes. Ecosystem-based adaptation approaches such as urban greening, restoration of wetlands and upstream forest ecosystems have been effective in reducing flood risks and urban heat. Adaptation options such as disaster risk management, early warning systems, climate services and social safety nets have broad applicability across multiple sectors.<sup>5</sup>

Key barriers to adaptation are limited resources, low climate literacy, lack of political commitment, limited research and/or slow and low uptake of adaptation science. There are widening disparities between the estimated costs of adaptation and the finance allocated to adaptation. Adaptation finance has come predominantly from public sources, and a small proportion of global tracked climate finance was targeted to adaptation compared to an overwhelming majority to mitigation.<sup>6</sup>

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<sup>2</sup> International Trade Centre. (2020). SME Competitiveness Outlook 2020. Geneva, Switzerland; AXA Group and UNEP. (2015). Business Unusual: Why the climate is changing the rules for our cities and SMEs. Paris, France.

<sup>3</sup> International Trade Centre. (2021). SME Competitiveness Outlook 2021. Geneva, Switzerland.

<sup>4</sup> International Trade Centre (2022). [From climate risk to resilience: Small business in value chains](#). International Trade Centre, Geneva, Switzerland.

<sup>5</sup> IPCC, 2023: [Summary for Policymakers. In: Climate Change 2023: Synthesis Report. A Report of the Intergovernmental Panel on Climate Change](#). Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, 36 pages.

<sup>6</sup> *ibid.*



It is critical for SMEs and businesses to adopt actions which improve their resilience to climate change impacts through adaptation measures such as water-efficient technologies (i.e., drip irrigation in agriculture, flood- or heat-resilient materials in factories and offices, and flood protection for company premises, such as flood gates) and solar panels. Using geothermal power and upgrading electrical equipment can enable a company to keep operating when severe weather brings down power grids.<sup>7</sup> SMEs have an important part to play in the **low-carbon transition**, and there is support available through green financing to SMEs that embrace sustainability.<sup>8</sup> Several mitigation options, notably solar energy, wind energy, electrification of urban systems, urban green infrastructure, energy efficiency, demand-side management, improved forest- and crop/grassland management, and reduced food waste and loss, are technically viable and becoming increasingly cost effective.

**Dietary shifts** present new opportunities for entrepreneurs transitioning to more plant-based products and more importantly tackling food waste. Many entrepreneurs support the circular economy by transforming agricultural food waste into productive resources (i.e., biofertilisers, renewable energy...).

Another strategy that agricultural SMEs use to address the impacts of climate change is **crop diversification** which can reduce the vulnerabilities of agricultural SMEs by being less reliant on one crop and protecting them from climate-related crop failure. **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.

As climate change makes rainfall more erratic and increases the risks of floods and droughts, **investing in improved water management and infrastructure is even more important**. It will require consistent investment in water infrastructure, operations, and maintenance; efficient management of water resources; and strengthened policy and regulatory frameworks. Investing in green infrastructure will play a huge role in providing safe, clean, and regular water flows.

Replacing carbon-intensive energy sources with **green energy** options will help reduce global warming emissions and combat climate change. The access to green technology and infrastructure should be facilitated for SMEs and businesses. SMEs can help in the rapid implementation of off-grid renewable sources like solar, wind, and other sources, especially in rural areas that are not yet connected to the national grid.<sup>9</sup>

Technology and **smart agriculture**<sup>10</sup> can support smallholders to improve soil health by optimising inputs such as water and fertiliser, access weather forecasts and micro-insurance products and detect crop diseases through remote diagnostics. Climate information and advisory services that allow access to real-time weather information and climate forecasts can help SMEs make informed decisions and plan for potential risks.

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<sup>7</sup> International Trade Centre (2022). [From climate risk to resilience: Small business in value chains](#). International Trade Centre, Geneva, Switzerland.

International Trade Centre. (2021). [SME Competitiveness Outlook 2021: Empowering the Green Recovery](#).

<sup>8</sup> Schaer, C., & Kuruppu, N. D. (2018). Private-sector action in adaptation: Perspectives on the role of micro, small and medium size enterprises. UNEP DTU Partnership.

<sup>9</sup> Daniel F. Runde, Conor M. Savoy, & Janina Staguhn. [Small and Medium-Sized Enterprises, Blended Finance, and Climate Change in Sub-Saharan Africa](#). 2021. CSIS Briefs.

<sup>10</sup> Using algorithms that combine information from satellite imagery, drone footage, weather forecasts and data from sensors in soil, farmers can understand day-by-day and field-by-field how their crops are doing and what inputs they need.



Many innovations adopted by farmers and entrepreneurs have proven to contribute to the development of sustainable agrifood systems, such as **regenerative agriculture** (practices such as no-till cultivation, not burning stubbles, and planting cover crops, can ensure that plants and soil are in the best condition to tolerate drought and erratic rainfall); **agroforestry and agroecology** (land use system that integrates trees, shrubs, and crops on the same land to create a diversified and resilient ecosystem); **conservation agriculture** (minimising soil disturbance, maintaining soil cover, and crop rotation to improve soil health, water retention, and nutrient cycling, reducing the use of synthetic fertilizers and pesticides); and **integrated pest management** (combines different methods such as biological control, cultural practices, and chemical control to minimise the use of pesticides and protect the environment).

### 3. The way forward

Agrifood SMEs play a critical role in global food production, but their vulnerability to climate change threatens their viability and poses risks to food security. Embracing climate-resilient practices and innovative solutions is essential for their survival and success in a changing climate. Governments, international organisations, and private sector stakeholders should work together to provide financial incentives, capacity-building programmes, and policy support to help agrifood SMEs transition towards climate resilience. By investing in sustainable and adaptive practices, these enterprises can secure a more sustainable and food-secure future for all.

Smallholders, entrepreneurs and SMEs need access to technology, skills, finance and training to allow for climate innovations to develop. There is a need to support climate technology incubators and accelerators providing support to entrepreneurs, helping them to develop business know-how, market connections and technical capacity, and to provide guidance on sources and procedures for access to finance.<sup>11</sup>

#### Key points for discussion:

- What are the key innovations that farmers and entrepreneurs develop and adopt which contribute to climate resilience?
- What type of investments are needed to support entrepreneurs to contribute further to climate adaptation and resilience?
- What incentives can be provided to SMEs and smallholders to better acquire technical skills needed to contribute to climate resilience?

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<sup>11</sup> UNFCCC. [Energizing entrepreneurs to tackle climate change. Addressing climate change through innovation](#). Tech Brief 12. 2018.



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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: successes from value chain actors in building climate resilience

- *Peter Nyeko, Co-Founder, Mandulis Energy, Uganda*
- *Frazer Handondo, Co-Founder, Forest Africa Zambia Ltd., Zambia*
- *Dejene Bethelhem, Co-founder and CEO, Zafree Papers, Ethiopia*
- *Soukaïna Boubou Dalil, Founder, Energie d'Afrique, Cameroon*

**13:00-13:20** Discussants

- *Audrey S. Darko, Lead, Sabon Sake, Ghana*
- *Ibrahim Traoré, Head of Climate Finance Division, West Africa Development Bank (BOAD)*

**13:20-13:50** Debate

**13:50-14:00** Key takeaways and conclusion

