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Exploring how interest-free cooperatives can help Nigerian smallholders address climate and sustainability challenges

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Key Messages

- **This brief outlines insights that emerged from the SustainFood Collaborative Learning School 2025, which explored interlinked finance, technological and climate challenges facing smallholders in Egbeda, Oyo State, Nigeria, and examined potential ways to address these challenges.**
- **Smallholders said that they lack the following: access to capital and markets, information about how to improve production, and the technology and knowledge to help them adapt to the impacts of climate change.**
- **Sessions to co-explore and co-design potential solutions with smallholders, state-level policymakers and early-career researchers focused on establishing interest-free cooperatives as one way to help farmers access capital, invest in climate-smart technologies and sustainably increase food production.**
- **The brief makes recommendations for Oyo State policymakers to consider to better integrate interest-free cooperatives into Nigerian agricultural and climate policies, and to provide targeted financial and institutional support for such cooperatives.**

Challenges for smallholders in sub-Saharan Africa

In sub-Saharan Africa, smallholders produce up to 80% of the region's food. Yet persistent, structural constraints undermine both their productivity and their resilience to the impacts of climate change (Sithole & Olorunfemi, 2024). Smallholders have limited access to affordable finance. They are weakly integrated into markets. They struggle with inadequate infrastructure and unreliable energy systems. All of this constrains yields and limits farmers' ability to adapt to intensifying climate risks (Bello et al., 2024).

Such challenges are interconnected: Water scarcity reduces crop yields. Inadequate energy access constrains irrigation, storage and processing. Poor storage increases post-harvest losses (Mmbughu et al., 2025). Thus, the resilience of smallholders

Image: Participants engaged in sessions to co-explore and co-design measures to address challenges confronting smallholders in Egbeda, Oyo State, Nigeria.
Photo: SustainFood Network Collaborative Learning School 2025

depends on the combination of these three aspects – what can be called the water-energy-food nexus – which, in turn relies on an ability to invest in measures to address these challenges (Mabhaudhi et al., 2024).

Against this backdrop, the SustainFood Collaborative Learning School 2025 in Oyo State, Nigeria, brought together key people to collaboratively analyse the challenges facing farmers in the region and to co-develop potential solutions. The school brought together area smallholders who grow maize and vegetables; early-career researchers from universities in Africa and the US participating; and representatives of key state agencies. Participating agencies were the Oyo State Ministry of Agriculture and Rural Development, Oyo State Ministry of Energy and Mineral Resources, Oyo State Ministry of Environment and Natural Resources (Rural Water Supply and Sanitation Agency), and the Oyo State Agricultural Development Programme. Participatory engagements with this group incorporated field observations and farmer-led discussions about their experiences into sessions to co-design ways to address their challenges. Because participating farmers identified the lack of accessible finance as the most critical barrier they face, addressing credit constraints emerged as a key priority in co-design sessions.

Background on interest-free cooperatives

Interest-free cooperatives are member-owned, democratic enterprises designed to provide financial services without interest charges. They focus on ethical, profit-and-loss sharing models to promote financial inclusion, mutual aid, and sustainable wealth creation for their members and farmers (Adele et al., 2024). Key features of such cooperatives are mobilizing collective savings and providing financial support without charging interest. These features are important in contexts in which Islam is practiced because riba (interest) is prohibited in Islamic finance.

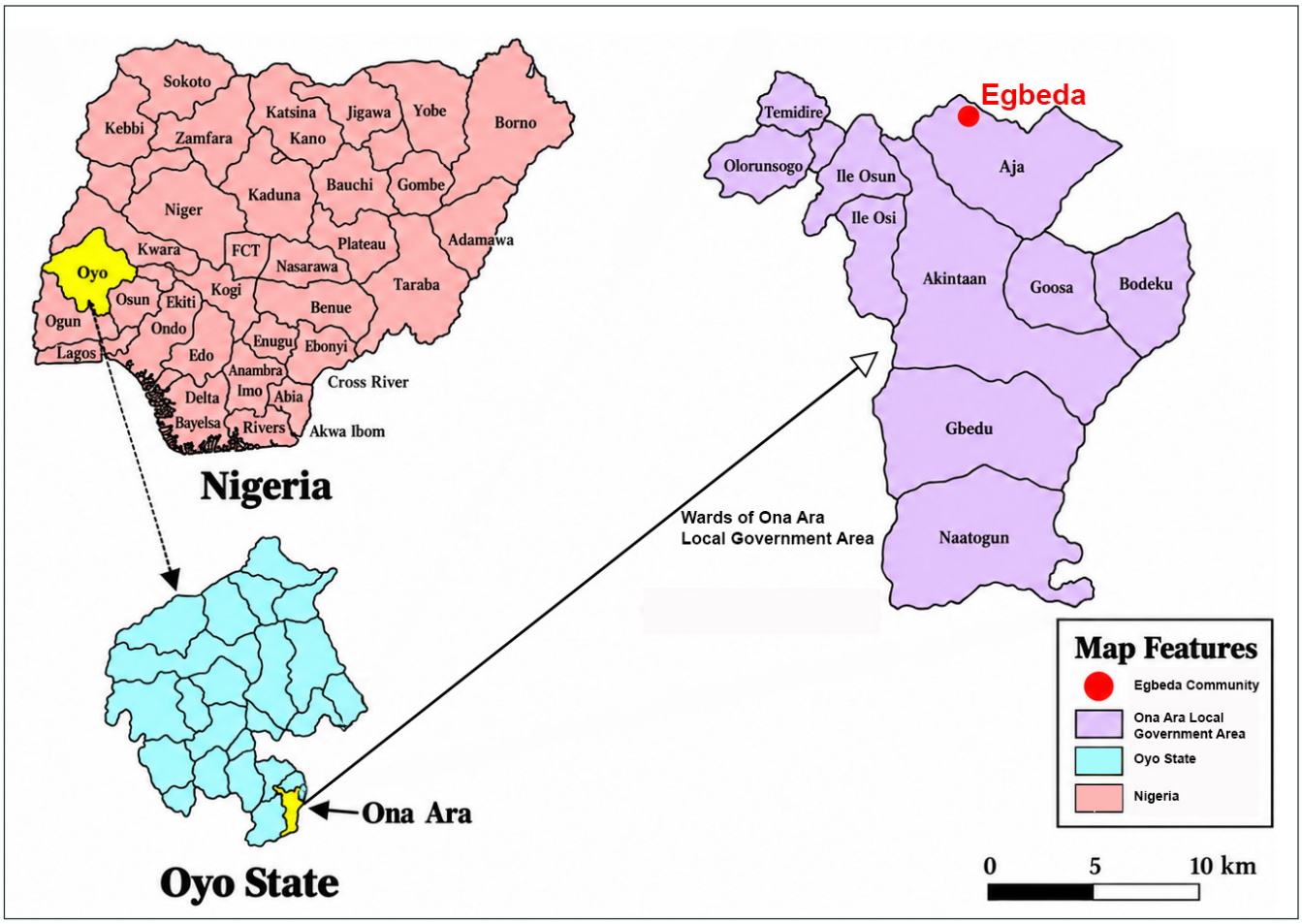
In Nigeria, cooperative societies are established channels for agricultural credit (Enwa et al., 2024). For example, a study conducted nearly a decade ago documented the operation of interest-free cooperative societies in Oyo State and reported that they had significant, positive effects on human capital development (Adegbite & Shittu, 2017). At that time, the authors recommended that the government financially support such societies "so that their members will be empowered to boost their business which will ultimately create employment opportunity, and thereby enhance economic growth and development of the state" (Adegbite & Shittu, 2017).

Further, direct evidence on the impacts of such cooperative remains limited. Emerging evidence from southwestern Nigeria suggests that while Shariah-compliant, interest-free financing can support agricultural production, changes are needed for them to be more effective. For example, in Ogun State, Awesu and Fahm (2025) examined the impacts of Bay-Salam financing, a mechanism for providing farmers with interest-free financing in exchange for future delivery of agricultural produce. Their findings show that the mechanism contributed to small-scale farmers' productivity and financial inclusion, but that adoption was hindered by challenges, including contract complexity and rigidity, preference for traditional banking, insufficient institutional support, and cultural resistance (Awesu & Fahm, 2025).

Methodology

To better understand the issues faced by smallholders in the region, the SustainFood Collaborative Learning School 2025 visited Egbeda, a peri-urban agricultural community in Ona-Ara Local Government Area, Oyo State. Farmers in the area cultivate maize and vegetables using both rain-fed agriculture and stream-based irrigation systems.

Figure 1. The map below shows the locations of Oyo State, the Ona Ara Local Government Area and the community of Ebgeda in Nigeria, where the work was conducted.



Source: Olatoye et al., 2025

As part of the SustainFood project, a group of participants toured farms to see the land and water-use practices and challenges farmers in the area face. As part of the project, four farmers completed a survey about their farming practices, inputs, and challenges. They participated in a discussion with the wider group about their perceptions of climate change impacts, adaptation strategies, and priorities for sustainable production.

Farmers who participated rely primarily on rain for their crops. However, farmers may irrigate fields during dry periods to cultivate a mix of crops, including maize, bananas, and vegetables (such as cucumbers).

A group discussion with local farmers. Photo: SustainFood Network Collaborative Learning School 2025

A farmer shows a generator used for irrigation. Photo: SustainFood Network Collaborative Learning School 2025

Irrigation practices were not formally scheduled. Farmers lacked consistent guidance on when to irrigate or how much water to apply, resulting in inefficient water and energy use and heightened production risks. Field observations also revealed significant maize leaf damage caused by pest infestations, potentially reducing crop productivity.

Key challenges

Farmers who participated reported the challenges to product that can be grouped into seven categories as follows:

- **Limited access to affordable finance.** High interest rates and limited collateral constrain investments in irrigation, inputs, and storage.
- **A lack of technical advice and training.** There is limited support from agricultural extension services and inadequate subsidies.
- **High and rising costs.** Farmers face increased costs for seeds, labour, agro-chemicals, and fuel for pumping water and transporting produce.
- **Lack of storage.** There are few facilities for perishable produce. This leads to post-harvest losses.
- **Lack of strategies to deal with flooding.** The farmers face flooding during the rainy season (September and October), which damages farmers' crops.
- **Inadequate irrigation.** Water availability for irrigation is limited, making it difficult for farmers to cope with drought, which lowers productivity.
- **Security issues, including land tenure and theft.** Farmers outlined threats, including disputed land claims, attempted land grabs, unauthorized entry onto farms, demands for payment from omo onile (individuals claiming ancestral land rights), and theft of crops and equipment. These risks reduce farmers' sense of security and willingness to invest in farming.

Potential ways to address these challenges

Farmers who participated outlined four potential ways to help address the challenges they face. Their ideas are as follows:

- **Establish interest-free cooperatives funded through government grants and member contributions.** During the stakeholder dialogue, farmers proposed collective financing through interest-free cooperatives as a way to mobilize resources for farm expansion, storage facilities, mechanization, and solar-powered irrigation to improve water access.
- **Aggregate the sales of harvests through the interest-free cooperatives.** This can help smallholders' negotiate better prices in the market than those available to them individually..
- **Create designated pasturelands for grazing and strengthen community-based surveillance.** Farmers are seeking support for local leaders to address problems related to omo onile.
- **Train youth and women on technology adoption of climate-smart farming and financial management.** The inclusion of youth and women is important for long-term sustainability.

Participatory co-design sessions

Joint participatory sessions (Tshangela & Swilling, 2025) were held with farmers, policymakers and researchers to further analyse and prioritize solutions proposed by farmers. Participants examined how challenges in finance, water, energy and markets interacted with farmers' food production in the region.

Together, participants chose to prioritize interest-free cooperatives as a practical entry point for mobilizing affordable finance and enabling investments in irrigation, storage and climate-smart practices. The resulting proposals were supported by policymakers, who expressed willingness to support potential implementation.

Participatory co-design sessions brought together farmers, policymakers and early-career researchers.
Photos: SustainFood Network Collaborative Learning School 2025

Key policy recommendations

Based on the discussions, participating farmers, policymakers and early-career researchers outlined five measures to help establish interest-free cooperatives as a resource for smallholders to address key challenges. These recommendations are as follows:

- **The Federal Ministry of Agriculture and Food Security and related institutions should support the potential of interest-free cooperatives as an instrument to aid smallholders.** These institutions should revise relevant policies to make processes easier, and they should establish initial funding and grants for cooperative-focused financing.
- **Agricultural extension service providers and agricultural research institutes should provide training.** Such training should offer cooperative members information on climate-smart farming, business and financial literacy, and relevant technologies.
- **Federal and state ministries of agriculture should support cooperative members to aggregate produce to improve access to beneficial facilities and markets.** Support should seek to provide cooperative-led storage for fresh produce and value-addition centres, such as those for drying maize and preserving vegetables. Such support should also help establish links between rural cooperatives and urban markets, and aggregated produce arrangements that can help smallholders negotiate better market prices.
- **The state government should take steps to strengthen community-based security arrangements with traditional leaders to reduce pastoralist invasions and theft on farms.** Farmers said that they want protection from omo onile demands for food and payments based on ancestral land rights even after the sale of the farm. To help address this concern, local governments can be assigned to allocate designated grazing areas to pastoralists, especially during drought periods.
- **State government should provide start-up capital and leadership training.** Such support can help cooperatives ensure youth and female representation in agriculture and promote sustainable, inclusive farming systems.

Conclusions

Interest-free cooperatives can be a practical, scalable financial mechanism that can help strengthen the productivity and resilience of smallholders. Evidence from Oyo State shows that interest-free cooperatives can contribute to members' human capital development (Adegbite & Shittu, 2017). Evidence from Ogun State indicates that, with proper support, interest-free agricultural financing through Bay-Salam can aid financial inclusion and agricultural productivity for smallholders (Awesu & Fahm, 2025).

Such cooperatives have the potential to help farmers address key needs: investing in critical climate-smart measures, such as solar-powered irrigation systems; improving the storage and preservation of perishable produce; and negotiating higher prices for the sales of their harvests. The cooperatives, in combination with agricultural extension education and outreach, can benefit farmers by providing insights that can help them make informed decisions about how to best use inputs, make climate-smart investments, and access production and marketing strategies. The cooperatives can facilitate access to capital, a key constraint that impedes farmers from making investments in climate-adaptive equipment and taking climate-adaptive measures (such as irrigating crops). By providing smallholders with more affordable and accessible interest-free finance, cooperatives could strengthen their ability to obtain productive inputs, invest in farm assets, better manage water and energy needs, and adopt climate-adaptive practices.

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Notes:

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