ecdpm

(Calibri Bold 16pt) TYPE OF REPORT HERE

Political economy analysis of the horticulture sector in Southwest Nigeria

July 2024

By Daniel Adeniyi, Koen Dekeyser, Mayowa Ekundayo

Acknowledgements

The authors thank Dr. Bruce Byiers for providing constructive feedback on earlier drafts of this research. We appreciate Oyewole Okewole and Adedinni Adeola for their contributions during the research phase of this study. We would like to thank all the stakeholders who took the time to participate in interviews and share their valuable insights. The assistance of Inna Perova, who mastered the layout of this report, is also highly appreciated. The views and opinions expressed in this report are those of the authors and do not necessarily represent the views or positions of any entities they represent.

List of figures

List of acronyms

ODA	Official Development Assistance
FDI	Foreign Direct Investment
ECOWAS	Economic Community of West African States
GDP	Gross Domestic Product
AU	African Union
MACS	Multi-Annual Country Strategy
PEA	Political Economy Analysis
PFI	Presidential Fertiliser Initiative
CBN	Central Bank of Nigeria
ABP	Anchor Borrowers Programme
BOA	Bank of Agriculture
BOI	Bank of Industry
MSMEs	Micro, Small and Medium Enterprises
CASC	Commercial Agricultural Credit Scheme
NIRSAL	The Nigeria Incentive-Based Risk Sharing System for Agricultural Lending
CAADP	Comprehensive African Agricultural Development Programme
NIHORT	National Horticultural Research Institute
IITA	International Institute of Tropical Agriculture
CGIAR	Consortium of International Agricultural Research Centers

FMARD	Federal Ministry of Agriculture and Rural Development, Nigeria

Abstract

Horticulture in Southwest Nigeria holds immense potential to address nutrition and improve livelihoods, yet it remains underdeveloped due to several structural, institutional, and external factors. This study provides a political economy analysis of the sector, identifying the impact of historical neglect, reliance on oil revenues, weak institutions, rent-seeking behaviour, low farm productivity, difficult access to finance, and insufficient post-harvest development. Limited producer cooperation, poor organisation, and scant sectoral coordination are defining challenges. Recommendations for sector improvement emphasise the need for a multi-stakeholder approach driven by the private sector and civil society, with government support. We identified the relevant actors for sector improvement and developed actor strategies for engagement. Strategies should focus on enhancing productivity, facilitating access to finance, promoting knowledge sharing, and improving value chain integration. The lack of political prioritisation may be an opportunity to promote the sector in Southwest Nigeria, as there are less entrenched and powerful interests that might stymie potential sector development programmes. However, there is no single challenge to address; thus, any attempt requires a coordinated approach across the sector to maximise impact.

Executive Summary

Horticulture holds great potential for alleviating food and livelihood insecurity issues in Southwest Nigeria, yet its development in the region remains underexploited. This study provides a comprehensive political economy analysis of the horticulture sector in Southwest Nigeria. It examines the sector's current state, including the roles and power relations of actors within it. It also assesses both political and economic influences, governance behaviours, and the impact of formal and informal norms and institutions.

Structurally, the sector suffers from path dependency caused by natural limitations, reliance on oil revenues and historical neglect. Historical emphasis on cash crops and carbohydrate-dense staples in the Southwest region, coupled with unfavourable agroecological conditions, have hindered sectoral growth. Inflation and exchange rate volatility pose significant macroeconomic challenges. However, rapid population growth and urbanisation rates present opportunities, potentially increasing labour availability and market demand.

Several external factors impact the sector: Nigeria as a whole is particularly vulnerable to the effects of climate change, which will lower its agricultural productivity and have implications for the Southwest region. The Russian-Ukraine war increased fertiliser prices and reduced official development assistance (ODA) to Nigeria, with funds increasingly going towards in-donor refugee costs. Foreign direct investments (FDI) are declining, making capital more expensive and inhibiting economic growth and diversification across the country.

Institutionally, horticulture's underdevelopment in the Southwest is due in part to the nature of politics at both national and regional levels, where power and influence are driven by rents and networks, and horticulture in the Southwest does not provide these, leaving it as a relatively low-level sector. Similarly, national policies and strategies relevant to the horticulture sector have been marred by inconsistencies and ineffective implementation, which are innately driven by rent-seeking and corruption. At the regional level, however, specific horticulture development strategies are lacking.

At the actor level, the sector in the region is characterised by fragmentation and weak organisation. Some efforts are led by public sector bureaucrats operating within that system, but developing the horticulture sector is not a key underlying ambition, given its limited political payback or rent opportunities. At the same time, horticulture producers in the Southwest region operate at a small scale with little political clout or organisational capacity, impeding sector development. ‘Winners’ from the status quo of the sector are market sellers and officials, while especially producers - notably female and small-scale farmers - lose out.

Specific challenges to the sector relate to inadequate access to fertilisers and improved seeds, as well as high disease pressure that further reduces yields. At the same time, weak connections between producers and processors and inadequate storage solutions result in significant postharvest losses. Lastly, knowledge gaps among farmers and a shortage of reliable labour limit the sector's overall potential.

The sector needs assistance by facilitating a multi-stakeholder sectoral vision and strategy driven by the private sector and civil society, with the government in a partner role. Actors can be targeted using different engagement strategies based on their present level of interest and influence. Importantly, the formation of producer associations should be promoted, which could partly address the power imbalance within the sector. The sectoral vision should emphasise productivity improvements, promote knowledge sharing and capacity strengthening in sustainable horticulture production and post-harvest procedures, and facilitate access to improved seed varieties and fertilisers. Furthermore, there is a need to facilitate the development of innovative finance mechanisms for horticulture and promote better financial access.

To conclude, the lack of political prioritisation may be an opportunity to promote the sector in Southwest Nigeria, as there are less entrenched and powerful interests that might stymie potential sector development programmes. However, there is no single challenge to address; thus, any attempt requires a coordinated approach across the sector to maximise impact.

1. Horticulture in Southwest Nigeria

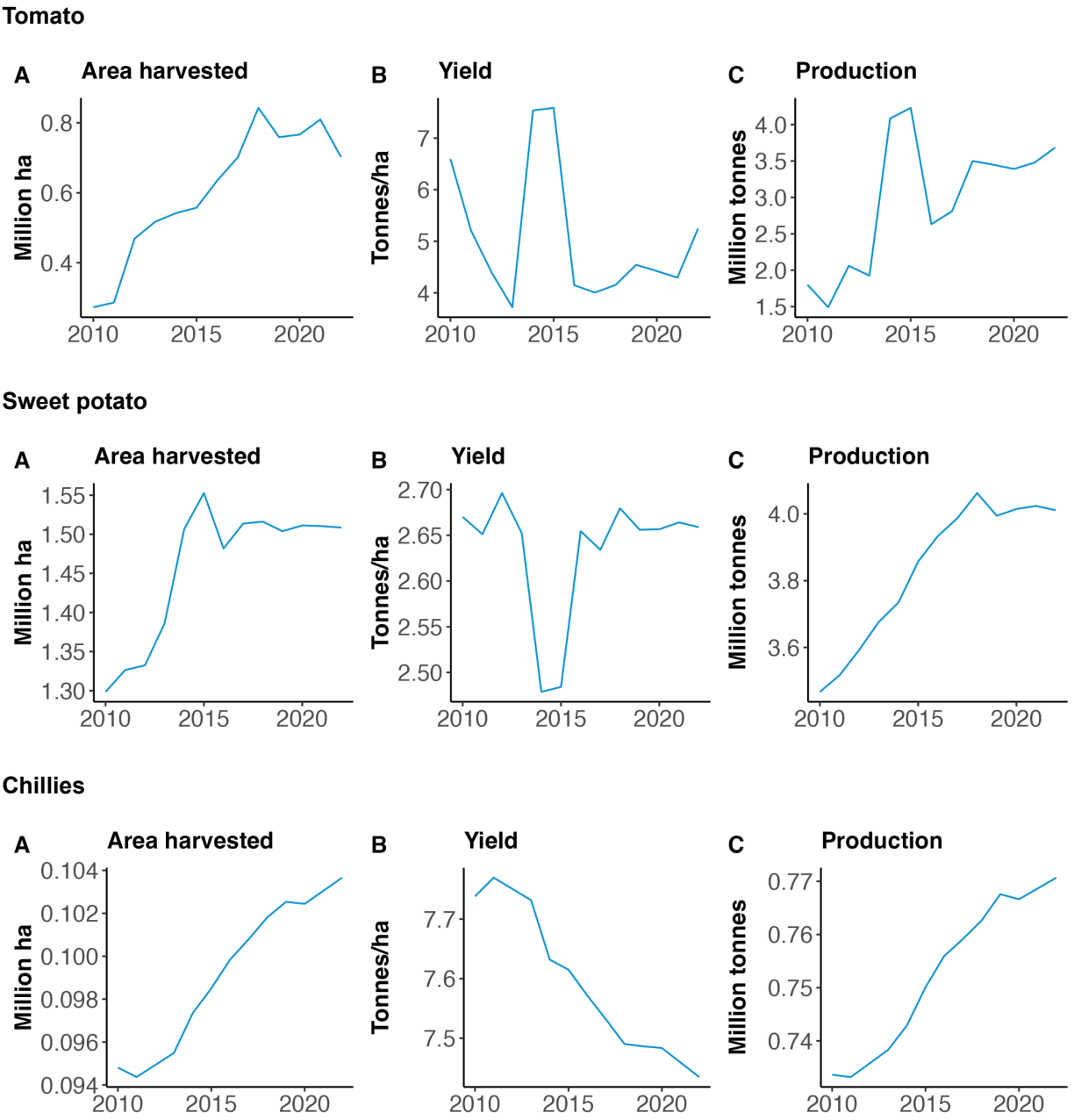
Nigeria is Africa's most populous nation and one of its largest economies. Despite having one of the highest GDP per capita of ECOWAS countries, Nigeria is making little progress toward poverty alleviation and the zero-hunger target. Over 80 million people live in extreme poverty, defined by international standards as living on less than US$1.90 per day (Yeboua et al. 2022), and 69.7% are food insecure (FAO et al. 2023). These socio-economic burdens are borne disproportionately by women and youth. Nigeria also ranks poorly on the United Nations Human Development Index, positioned 161st out of 193 countries in the Human Development Report for 2023/24.

Horticulture offers significant opportunities for Nigeria to transform its agriculture sector and improve livelihoods and food and nutrition security while creating jobs and entrepreneurship opportunities. Developing the sector can respond to domestic demand and stimulate exports of horticultural products to increasingly growing consumer markets in Africa, Europe and beyond. Already, the value chains associated with horticulture are experiencing notable transformations, with the sector exerting a growing influence on exports, employment, and agricultural GDP. Stakeholders in Nigeria increasingly acknowledge the sector's importance. The broader agricultural sector contributes approximately 23% of the country's GDP and up to 45% of overall employment. Nigeria's agricultural land area is projected to be 69 million hectares (75% of total land area), with 34 million hectares (ha) designated as arable. This includes a vast agro-ecological variety that enables the production of most commodities consumed in the country. However, production levels have declined in the last 20 years, with value-added per capita increasing by less than 1% yearly (African Union 2023).

Southwest Nigeria is the Yoruba-speaking region of Nigeria, with six States, including Ekiti, Ondo, Oyo, Ogun, Osun, and Lagos State. The region boasts a rich diversity of horticultural crops, including fruit vegetables like tomatoes, pepper, okra, cucumber and eggplant, and leafy vegetables like jute leaves, amaranth, spinach, and waterleaf. The region is also notable for cultivating fruits such as pineapple, pawpaw, and citrus, root and tuber crops including sweet potato and cassava, and tree crops such as mango, cashew, and avocado. These crops play a crucial role in the local diet, providing essential nutrients and contributing to food security and livelihoods in Southwest Nigeria.

Since 2010, Nigeria has experienced marked increases in overall horticulture production, mainly due to increasing areas cultivated rather than rising yields (Figure 1). Nigeria is the leading tomato producer in Africa and ranks 14th globally. However, there has been a reduction in tomato yields in the country over the years. Likewise, chilli pepper production has increased significantly with a small decline in yields. Sweet potatoes, in contrast, have experienced relatively stable yields even though production increased significantly.

Figure 1. Selected horticulture produce Nigeria, 2010-2022.



Data: FAOSTAT. Visualisation by ECDPM.

Horticultural production systems in Southwest Nigeria are heterogeneous, ranging from small to large, and subsistence to commercial. Smallholder farmers, primarily semi-educated and residing in rural areas, cultivate indigenous leafy and fruit vegetables both for subsistence and small-scale commercial purposes. They rely on traditional farming methods, which involve manual labour and minimal mechanisation applications, and are dependent on and subjected to natural inputs (such as rainfall and manure). However, there is a growing trend towards modernising horticultural production by adopting improved technologies, irrigation systems, and agronomic practices.

There are also commercial horticultural farmers in Southwest Nigeria who specialise in cultivating fruits and vegetables. These farms come in varying sizes and scales and employ modern farming techniques and technologies, irrigation systems, and mechanised equipment to enhance productivity and efficiency. In

addition, the development of cluster farming and AgriBusiness Clusters for vegetables is getting some attention in Ekiti, Oyo, Ondo, and Ogun States. This is primarily driven by farmers' realisation of the need for cooperative society development to create an ecosystem of support for themselves.

The distribution and retailing of vegetables in Southwest Nigeria are mostly dispersed, but traditional markets dominate alongside a growing formal retail market. The retail sector can be broadly categorised into three main types: open-air traditional markets, convenience stores and small groceries, and formal supermarkets. Traditional markets account for a significant 65% of total food sales, convenience stores and small groceries account for 34%, with formal supermarkets only accounting for 1% (Delphy 2022). Although formal retail, direct-to-consumer delivery, and farmers' markets offer high-quality produce and are growing, they only make up 2-5% of the market share. These market divisions provide a superior quality of produce and a market for exotic vegetables (Van de Broeck et al. 2021). Lagos State is the major market for vegetables produced across the country and nearby West African countries. The Mile 12 international market in Lagos is responsible for trading around 500,000 tonnes of tomatoes annually.

While commercial-sized vegetable processing is not yet done in Southwest Nigeria, organisations like Aace Foods have moved some operations to Ogun State to further develop the pepper value chain for large-scale processing. Some small-sized processors also add value to vegetables grown to redistribute them across supermarket shelves. Vegetable consumption patterns are broadly similar across Southwest states except for Lagos state. Lagos State, a cosmopolitan state fueled by the teeming population of 17.5 million, has the highest vegetable consumption.

The horticulture sector is growing in Southwest Nigeria, where traditionally it was concentrated in the North; however, some reliance on Northern supplies persists, indicating further potential for further growth. In the past, Southwest Nigeria was known for its consumption of vegetables, while the North was known for its production. The North produced tomatoes, cabbages, peppers, lettuce, and onions in commercial volumes and transported them to the Southwest for sale. However, in 2020, during the COVID-19 lockdown and post-EndSars protests, there was a pushback to the supply of horticulture produce from the North. This reliance on the North underscores the need to strengthen the region's horticultural value chain, from production to consumption, and potentially offers a political opening for further developing the sector in Southwest Nigeria.

Despite the sector's challenges, horticulture has great potential in Nigeria's food system, contributing to food, nutrition security, and socio-economic growth. Southwest Nigeria holds immense latent possibilities for horticultural development. The growing urbanisation and increasing demand for fresh produce in Southwest Nigeria present lucrative prospects for horticultural entrepreneurs and investors to explore the sector. The sub-sector provides a wide range of opportunities for storage, value-addition, processing, last-mile supply chain, etc., to potential investors.

The study offers an in-depth examination of the political economy of Southwest Nigeria's horticulture sector. It investigates the sector's current state, including the roles and power dynamics among its actors. It also assesses political and economic influences, governance behaviours, and the impact of formal and informal norms and institutions.

Analytical approach: Political economy analysis

The political economy approach is used to analyse Southwest Nigeria's horticulture sector. Political economy analysis is *"a set of concepts, questions and tools that can help diplomats, development professionals and local reformers better understand the contexts in which they operate and make informed policy and investment decisions"* (Department of Foreign Affairs and Trade, 2022, p. 2).

Political economy analyses actors, their power dynamics, and the institutional frameworks within which they function (De Schutter 2019). Analysing the political economy of food systems might lead to more grounded proposals by considering stakeholders' viewpoints and economic incentives (Bizzotto Molina et al. 2020).

By better understanding informal institutions or dynamics, such as the enabling environment or incentive structures, PEA can help incorporate ideas, interests, and power structures in formulating and implementing policy, investment, and behaviour change around food systems, including the horticulture sector. The critical insights into power structures and context can assist policy and intervention approaches to be more grounded, practical, and coherent (Dekeyser et al. 2020). We used ECDPM's PEA 'five lenses' tool to systematise information that helps understand 'why things are as they are' in the horticulture sector in Southwest Nigeria in terms of structural factors; formal and informal institutional factors; actors and incentives; sub-sectoral characteristics; and external factors (Byiers et al. 2021).

Data was collected through structured, in-depth interviews with farmers, the private sector, government, decision-makers, experts, production and market associations and civil society. A total of 51 interviews and 16 focus groups were conducted in the six Southwestern states of Nigeria. This was supplemented by workshop sessions where findings were further scrutinised and refined. The methods were instrumental in unpacking actors' interests and influence and in identifying barriers and opportunities for the development of the horticulture sector.

2. Political economy analysis of the sector

2.1. Overview

The horticultural sector in Southwest Nigeria is critical to nutrition security, income generation, and economic development. However, several challenges hinder its full potential. Figure 2 provides a high-level diagnostic overview of the main factors contributing to the sector's underdevelopment and their underlying causes, which are further elaborated below.

Main Cause 1 - Oil-dependent economy: This dependence is sustained by continual revenue streams from oil, which fund both national and SW state budgets. The appreciation of the Naira due to oil exports also means that other sectors of Nigeria's economy face a penalty for exporting - the so-called 'Dutch disease' - and depress their growth. Foreign direct investments are mostly directed towards the oil sector, sustaining the status quo. Another factor driving this reliance is the greater ease with which rents are accumulated in the oil sector compared to other sectors, such as horticulture. Although this shapes the economy as a whole, as a result, the horticultural sector receives limited attention from the national and Southwest governments.

Main Cause 2 - Weak, corrupt and ineffective government institutions: This is driven by a relatively nascent democracy given decades of military dictatorships, rent-seeking and clientelism (patron-client relations), and nepotism. Others include a lack of accountability mechanisms, as well as non-enforcement of rules and judicial weakness. Again, although these are nationwide characteristics, they have resulted in inconsistencies and failures in policies related to the horticulture sector in Southwest Nigeria.

Main Cause 3 - Low farm productivity: Several factors contribute to the low horticultural productivity challenge in Southwest Nigeria. The reliance on rain-fed cultivation practices reduces productivity and leads to variable yields. Inadequate access to inputs further limits productivity. Insufficient support and extension services deprive farmers of the information and guidance they need to maximise yields. At the same time, the high cost of adopting modern agricultural technology, such as greenhouses, is a barrier to increased output. Gendered disparities in land ownership and opportunities in Southwest Nigeria, which stem from patriarchal inheritance norms, also disproportionately affect women, limiting their access to resources and preventing them from fully participating in horticultural production.

Main Cause 4 - Low access to finance: This is driven by a risk-averse inclination of commercial banks and their imposition of stringent loan conditions and collateral requirements. At the same time, rent-seeking behaviours and nepotism characterise alternatives to commercial banks (i.e. public banks), shrinking financial access further. There is also a perception of better opportunities for profit maximisation in other sectors in Southwest Nigeria, such as real estate and manufacturing. Other factors include limited financial

literacy, the absence of a subsector categorisation (specific for horticulture) in policies and programmes of finance by governments, and gender inequality in access to collateral and financing opportunities.

Main Cause 5 - Limited producer cooperation and organisation: This results from a lack of trust among sector actors and a traditional 'individualism' mindset of some actors in Southwest Nigeria, diversity of horticulture produce, diversity in education and scale of operation, the 'free rider' phenomenon (trying to enjoy benefits without contributing), and low access to policymakers which adversely affects the motivation to cooperate.

Main Cause 6 - Scant sectoral coordination: Weak coordination of the horticulture sector in Southwest Nigeria is driven by low knowledge and information exchange, difficult contract enforcement, limited incentives to organise, gendered roles in the sector (with distinctly gendered roles in the sector, collaboration between the roles becomes more difficult), limited value chain integration, and an absence of a sector vision or plan.

Main Cause 7 - Muted post-harvest development: This results from import competition (e.g., tomato paste), which challenges locally manufactured products. In addition, infrastructural deficits such as energy and transportation represent a significant obstacle. High initial investment costs deter many stakeholders from investing in post-harvest infrastructure. Low consumer affordability limits demand for value-added horticultural products, reducing post-harvest investment incentives. A lack of expertise in product commercialisation and marketing, coupled with limited awareness by entrepreneurs and training opportunities, also hinders the development of value-added horticulture products.

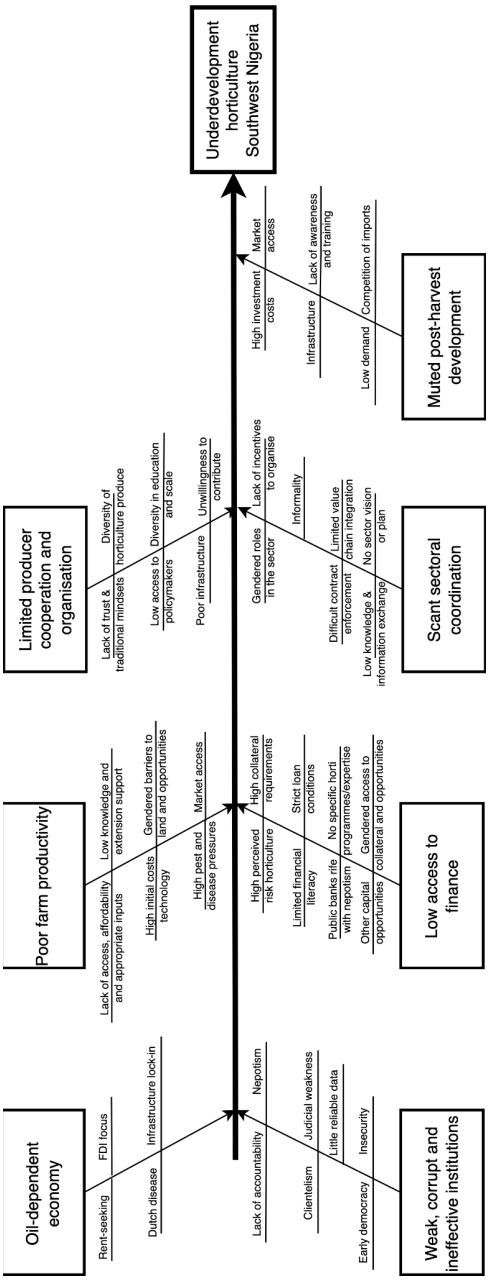


Figure 2. Overview of factors leading to the underdevelopment of the horticulture sector in Southwest Nigeria

2.2. Structural factors: Path dependency, inflation and exchange rate volatility

The agroecological conditions in Southwest Nigeria present considerable obstacles to optimal horticulture production. The climate in Southwest Nigeria is characterised by distinct dry and wet seasons, necessitating the use of alternative water sources for year-round cultivation. However, access to such alternate water sources is not always guaranteed, posing an impediment to continuous cultivation throughout the year. To add to this, challenges such as low soil fertility, nutrient imbalances, and rapid degradation of soils—both physical and biological—are prevalent (Ande et al. 2017; Zubairu et al. 2023; Aduramigba-Modupe 2023). The predominant soil types in the region are acidic and deficient in nutrients and organic matter, while soil erosion and land degradation further deteriorate the soil's chemical fertility (Ande et al. 2017). In Lagos, saltwater intrusion from the lagoon negatively impacts yields. As a result, viable horticulture production is increasingly challenging without applying soil fertility management practices, including the use of organic and inorganic fertilisers. While soil testing can provide valuable insights for farmers to improve soil fertility, the availability of soil testing facilities and laboratories is limited.

Historically, farmers in Southwest Nigeria have predominantly focused on cultivating cash crops and carbohydrate-dense staples like roots and tubers, rather than horticultural crops. This preference, which has its roots in the colonial legacy of extractivism, stems from the notion of higher returns associated with cash crops and domestic reliance and market for staple crops. Furthermore, there was the perception that horticulture farming was less profitable and primarily suited for women or those perceived as weaker. Despite changes in agricultural landscapes and market dynamics, this perception persists among some farmers, locking them in the production of crops whose competitive advantage or profitability is gradually diminishing while overlooking the potential benefits of diversifying into horticulture.

Women have traditionally played a significant role in the horticulture sector in Southwest Nigeria, with cultural factors shaping their contributions. In the past, it was commonplace to find women engaged in vegetable farming alongside their husbands' endeavours in cocoa and tuber cultivation. Initially focused on subsistence farming to ensure food security and dietary diversity for their households, women later transitioned to commercialising vegetable production as its value and returns increased. Today, as the horticulture sector continues to grow, more men are entering the industry, creating competition for women (CBI 2021). Nevertheless, women remain prominent in the sector, particularly as primary retailers of horticulture produce, presenting ample opportunities for their continued participation.

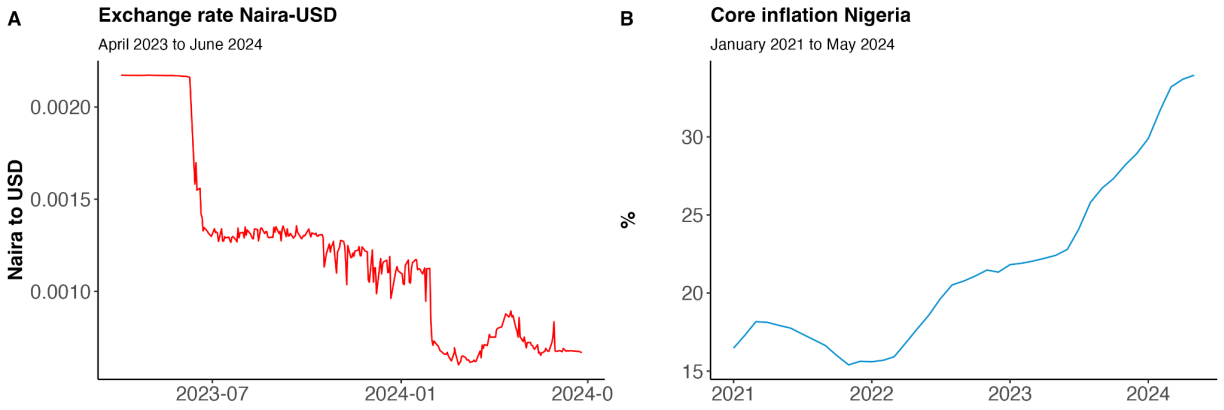
During the extended period of military rule in Nigeria, the agricultural sector suffered from neglect, particularly in Southwest Nigeria. Agriculture was once so central to the region that its proceeds were channelled into developing other sectors. Iconic landmarks like the Cocoa House building, the first skyscraper in West Africa, and the establishment of Obafemi Awolowo University in the 1960s are examples. However, the significance of agriculture in Southwest Nigeria diminished over the decades of military rule as the states had military administrators who cared less about agriculture's historical and economic importance. This period was marked by stagnant growth, increased poverty, and rising crime rates, with 45% of Nigeria's foreign exchange earnings consumed by debt servicing in the 1980s (Yeboua et al. 2022).

The effects of military rule were compounded by the commercial discovery of oil and the subsequent oil boom in the 1970s, which dramatically altered Nigeria's economic landscape, further diverting government attention away from sectors like agriculture and horticulture and effectively resulting in the country losing its export competitiveness. Before the oil discovery and military rule, agriculture was the backbone of Nigeria's economy, contributing significantly to exports and government revenue. Nigeria was the largest groundnut exporter and a key player in the global export markets for cocoa, cotton, rubber and palm produce. However, with the rise in oil production and exports, Nigeria transitioned into a rentier state. It fell victim to the ‘Dutch Disease’, with an artificial appreciation of the naira and a shift in labour and capital from the real sector, which could drive economic growth, to the resource rent-dependent sector (Adeniyi & Dinbabo 2020; Odukoya 2020). Rising oil demand and prices led to the rise of crude oil as the primary economic activity and major export commodity. Crude oil accounts for more than 80% of total exports, half of government revenues, and most foreign exchange earnings.

Nigeria's heavy reliance on oil exports has entrenched a path dependency that has diverted political attention away from other avenues of development, including agriculture in Southwest Nigeria. As Africa's largest oil exporter with vast natural gas reserves, Nigeria has historically underinvested in its agricultural sector. The relatively easier access to oil revenue resulted in a lack of incentives for successive Southwest states' governments to invest in agriculture. The influx of petrodollars facilitated easy imports of goods and services and allowed political office holders, including those of Southwest Nigeria, to finance capital expenditure and significantly overlook agricultural development. Before the oil boom, agriculture contributed more than 60% to Nigeria's GDP. However, this figure has dwindled to 24% in recent years, reflecting a significant decline in the sector's importance.

Exchange rate volatility and inflation pose significant macroeconomic challenges to the development of the horticulture sector in Southwest Nigeria. Nigeria's inflation rate rose from about 17% in 2021 to over 30% in 2024, the highest in two decades. Also, the exchange rate (naira to a dollar) experienced a depreciation exceeding 250% between April 2023 and April 2024. The repercussions of inflation extend beyond the increased cost of horticulture production to a reduction in consumers' purchasing power for horticultural products. The inflationary trend has resulted in a persistent rise in farm inputs and labour costs while reducing the demand for technology adoption within the sector due to higher prices for new technologies. On the other hand, exchange rate volatility negatively affects domestic price level, resource allocation, the profitability of goods and services and investment decisions within the horticulture sector. While exchange rate volatility increases risks and uncertainty, making investors unwilling to take foreign loans as they are unable to hedge against potential naira devaluation, the high inflation rate in the country contributes to rising interest rates, making it more difficult for sector actors to secure loans from local banks.

Figure 3. Exchange rate and core inflation



Data: Central Bank Nigeria

Partly as a consequence of all of this, Nigerians are poorer than nine years ago, with the COVID-19 pandemic and the Russian invasion contributing Wealth per capita has been growing slowly at 0.6% per year since 2010, with growth negative at an average of -1% since 2015 (Figure 4). The economic slowdown due to COVID-19 - and lagging Chinese recovery - has impacted Nigeria, while the Russian invasion of Ukraine has been a boon in boosting oil export earnings, but a curse in terms of global economic growth and the cost of Nigeria's expansive gasoline subsidies (Abdel-Latif et al. 2023; IMF 2023). Nigeria's low GDP per capita impacts their diets: vegetables, while essential for a healthy diet, can be more expensive than staples, which are rich in carbohydrates. When faced with tighter budgets, Nigerians may be forced to prioritise cheaper, less nutritious options, leading to declining consumption of horticultural produce.

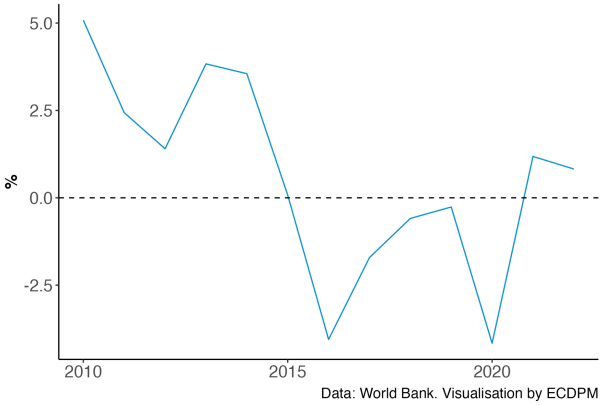


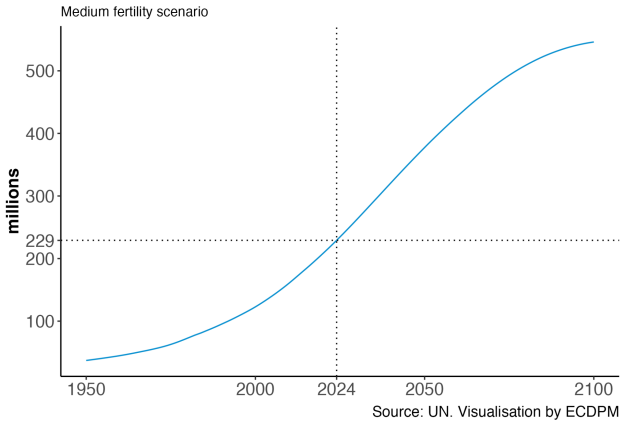
Figure 4. GDP per capita growth, 2010-2022.

As with Nigeria's overall economy, Southwest Nigeria's economy, including its horticulture sector, exhibits a significant degree of informality. For instance, the Mile 12 International Market, recognised as West Africa's largest perishable foodstuff market and situated in Lagos, operates within a largely informal arrangement, with many actors being informal producers and traders. This informality has potential implications, both positive and negative, for the horticulture sector and its envisioned development. As highlighted by Vorley (2023), informality can place food systems partly outside the governance of the states and value chains. It may also give rise to unfair competition, constitute barriers to effective taxation and pose threats to public health in light of food safety and traceability concerns. On the other hand, it is essential to recognise that the informal food economy continues to play a significant role, contributing substantially to food access and affordability, decent work and livelihoods, as well as adaptability and resilience, as particularly witnessed during the COVID-19 pandemic (Agyei-Holmes et al. 2021; Vorley 2023).

Insecurity in certain parts of Southwest Nigeria, particularly along highways and trade routes and in some farms, creates disruptions in the horticulture value chains, resulting in reduced productivity and underinvestment in the sector. While the severity of the security challenges may not be as pronounced as in other regions of the country, the Southwest still grapples with various security threats, including escalating banditry, armed robberies, and kidnappings. These threats have restricted access to production sites, posing a significant risk to business investment in the horticulture sector. However, a coordinated regional effort has been put in place to address insecurity in Southwest Nigeria. One notable initiative is establishing and operating the "Amotekun Corps," a security network designed explicitly for Southwest Nigeria, which has shown some degree of success in combating security threats and safeguarding the region's agricultural activities and investments.

On the demand side, Nigeria is experiencing rapid population growth and urbanisation, presenting both opportunities and challenges to the horticulture sector. The country's population has increased from 45 million in 1960 to more than 200 million, with projections of over 400 million by 2050, potentially making it the world's third most populous nation. In 2019, Southwest Nigeria accounted for 19.3% of Nigeria's overall population, while Lagos alone witnessed an immense population increase from 300,000 in 1950 to 15 million in 2018. This surge in urbanisation, particularly in Lagos, significantly contributes to the country's urban population growth rate of 4.2%, which is twice the global average. By 2050, 66% of Nigeria's population is anticipated to reside in urban areas (Yeboua et al. 2022). This demographic shift may spur labour availability (for farms in peri-urban areas) and market demand for the horticulture sector. It presents an opportunity for horticulture investments, given the potential diversification of diets to incorporate fruits and vegetables by the growing urban middle class (HortiNigeria 2022). However, it could also present challenges. Competition for land and water resources may intensify, potentially diverting these vital resources from horticulture. Furthermore, growing urbanisation can contribute to widespread environmental degradation, creating additional obstacles to sustainable horticulture production.

Figure 5. Nigeria's population, 1950-2100



2.3. External factors: climate, war, trade and investments

Under the middle-of-the-road scenario, Nigeria might warm 2 °C in a century, with that average masking more variability and extreme weather events (World Bank 2024; Jägermeyr et al. 2021). The agricultural sector would suffer from increased frequency and intensity of heavy rain events and increased dry spell duration, aridity, and drought. Nigeria is classified as one of the ten most vulnerable countries to the impacts of climate change and natural hazards (World Bank 2021). The coastal area of the Southwest is susceptible to rising sea levels. Farmers and extension services both lack basic knowledge and skills for climate-smart agriculture (Posthumus et al. 2018), but adaptation by farmers can be seen, such as choosing more resilient crop varieties (Tajudeen et al. 2022).

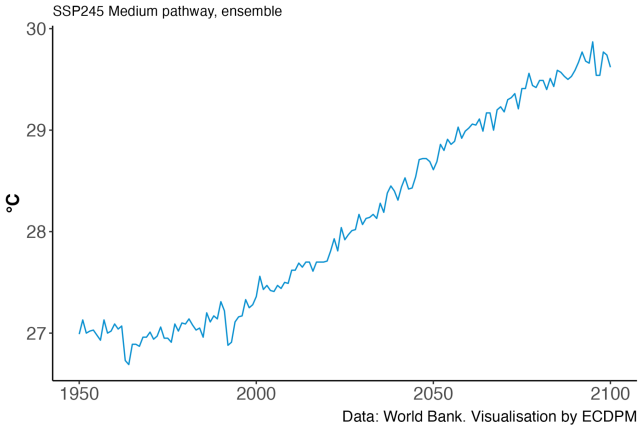


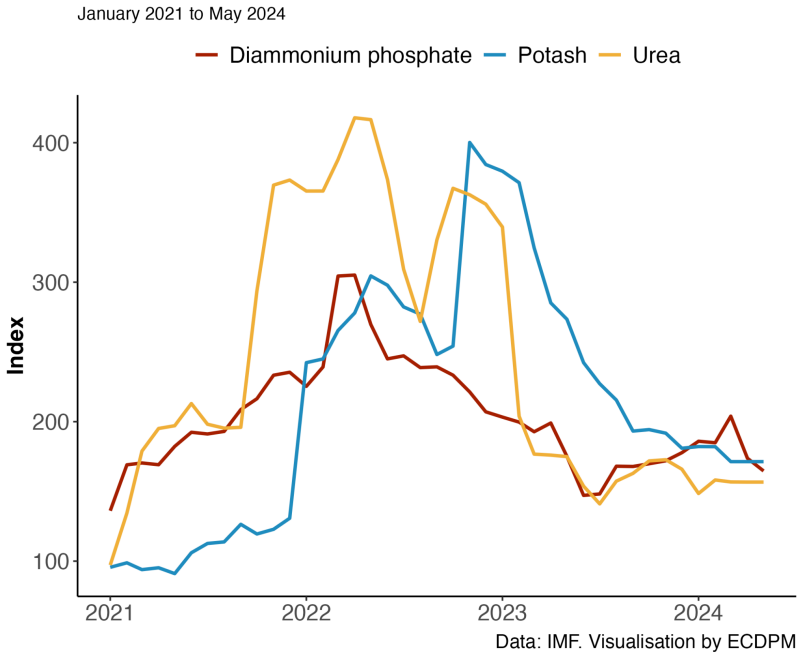
Figure 6. Observed and projected average mean surface temperature for Nigeria, 1950-2100.

Climate change is lowering agricultural productivity globally, but especially in Africa. Projections of the impact of climate change on agricultural productivity have focused on staples (Silva and Giller 2021), but horticulture will also be impacted (Cammarano et al. 2022). While higher carbon concentration will elevate some crop productivity, this is limited for many tropical regions and crops. One study models that climate change since 1961 has reduced agricultural productivity in Africa by 34%, the most of any region (Ortiz-Bobea et al. 2021). Merely 1% of Nigeria's agricultural land benefits from irrigation, laying bare a susceptibility to droughts. Additionally, in southern production zones, flooding, erosion, and soil degradation pose significant challenges to the sector. Rising temperatures and increased occurrences of days exceeding 35°C pose threats to plant health and agricultural workers' well-being. Every crop thrives within specific temperature ranges for optimal growth and yield. As such, excessively high temperatures above crop-specific thresholds can swiftly damage crops (World Bank 2021).

Global fertiliser prices are still elevated after peaking due to the Russian invasion of Ukraine (Figure 7)**.** Fertiliser prices were trending upward in 2021, with urea prices especially booming. In 2022, potash prices jumped by 300%. Fertiliser prices have come down since their peaks, but in March 2024,

diammonium phosphate is still up 50%, Urea 61%, and potash 91% compared to January 2021. Demand was likewise substantially down in Africa, with African fertiliser prices not declining as much in 2023 as international prices (Rice and Vos 2024). Lower fertiliser affordability negatively affects agricultural productivity, especially for fertiliser-intensive vegetables, and harms profitability. With such high international prices, domestic fertiliser producers are a vital part of the government's diversification and self-sufficiency agenda (Busari 2022).

Figure 7. Index of global prices of fertilisers.

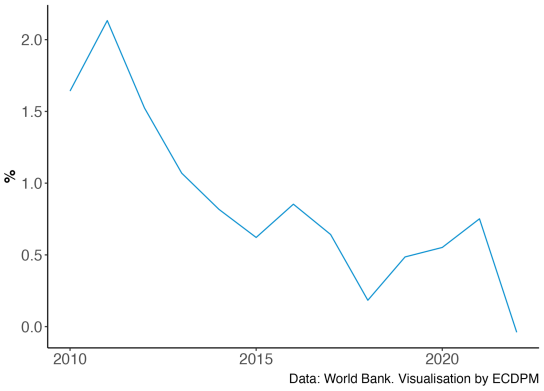


ECOWAS integration benefits consumers but raises the food import bill and adds competition for local producers. Regional integration through ECOWAS and its trade liberalisation scheme provides opportunities for producers to sell into the regional market but also for neighbouring country producers to supply to Nigeria's large urban centres. This is a boon for consumers especially, but due to access to cheaper imported food, the Nigerian government has not been pressed to invest in its own agricultural sector. The outcome is a food deficit country and a rapidly rising food import bill (Plaisier et al. 2019). The Nigerian government has taken measures to protect its tomato producers, for instance, restricting the import of tomato paste - though mostly coming from outside of ECOWAS - and making tomato imports more cumbersome (ITA 2023). In theory, regional integration could open up new markets for Nigerian fruits and vegetables, allowing producers to expand their reach beyond domestic borders and benefit from economies of scale. However, given the low productivity of Nigerian agriculture and the large domestic demand, regional integration has mostly been a gain for Nigerian consumers rather than producers.

The Russian invasion of Ukraine led to an increase in development assistance, but far less of it reaching Nigerian agriculture to support its development. Overall, ODA spending rose in 2022 by 13.6% in real terms due to the Russian invasion of Ukraine, but much of the increase went to in-donor refugee costs. Africa received 7.4% less in real terms than in 2021. Even though ODA bilateral commitments to Nigeria increased, overall ODA commitments dropped 29.7% between 2021-2022, from USD 5 bn to USD 3.9 bn. The agriculture, forestry and fishing sector decreased from USD 248 million in 2020, to USD 77.9 million in 2021 and USD 34.6 million in 2022, a drop of 86% between 2020-2022 (OECD 2024).

Foreign direct investments in Nigeria are down, which might result in less investment inflow to the Southwest states' horticulture sector (Figure 8)**.** Total FDI dropped from USD 22.7 bn in 2014 to USD 3.7 bn in 2023 (Ikpoto 2024). Nigeria's business environment is plagued by a host of obstacles ranging from corruption, difficult access to foreign currency, protectionism, electricity cuts, and insecurity (US DOS 2023). These challenges have contributed to a decline in investor confidence and have hindered the inflow of foreign capital into the country, thus hindering the diversification of the economy.

Figure 8. Foreign direct investments as a percentage of GDP, 2010-2022



2.4. Institutions: Policy gaps and rent extraction

A myriad of institutional factors play a crucial role in shaping horticulture development in Southwest Nigeria. While some of these are anchored in formal policies, laws and regulations, many are entrenched in informal norms - the unwritten rules that govern behaviours and practices, ultimately influencing how the formal rules are formulated, interpreted and executed.

Nigeria has witnessed various policies and programs implemented to transform the agriculture sector at a national level, with limited degrees of success. **Inconsistencies and ineffective implementation have marred these policies, and the horticulture sector in Southwest Nigeria has not been exempt from their repercussions**. Former President Olusegun Obasanjo's two terms witnessed the development (in 2002) and implementation of the National Special Programme on Food Security (NSPFS). Subsequently, the Agricultural Transformation Agenda was introduced in 2011 under the administration of Goodluck Jonathan, followed by the implementation of the Agriculture Promotion Policy by Muhammadu Buhari's administration from mid-2016. While these policies shared a common goal of boosting agricultural productivity, they somewhat differed in their priorities and approaches.

A case in point relates to the politicisation of access to fertilisers, a critical input for horticulture production and one subject to different importation restriction measures. The Agricultural Transformation Agenda deregulated agricultural inputs and implemented an electronic registration system to distribute farm inputs, including fertilisers, to farmers. However, the subsequent administration, under the Agriculture Promotion Policy, discontinued this input distribution scheme in favour of the Presidential Fertiliser Initiative (PFI). The PFI aimed to boost local fertiliser production by utilising locally available urea and limestone, which constitute 65% of the required raw materials. While the previous policy succeeded in increasing farmer access to fertilisers (Odukoya 2020; Olomu et al. 2020) but still had significant coordination challenges, particularly between national and state governments (Lokpobiri 2019), the PFI increased domestic urea production and blending, but farmer uptake was limited (Karkare et al. 2022).

Moreover, a major grey policy area revolves around the lack of clarity on the types of fertilisers restricted for importation. Due to inconsistencies in policies, actors lack sufficient information on the types of fertilisers qualified for importation and whether forex is available to facilitate such imports.[1] In essence, the politicisation of policy formulation and implementation, with changes based on domestic political cycles, undermines the effectiveness and long-term sustainability of actions within the sector (Karkare et al. 2022).

[1] In 2015, the Central Bank of Nigeria (CBN) restricted 41 items from accessing forex from the investors and exporters (I&E) window, the country's official market. The items included vegetables and processed vegetable products, as well as tomatoes and tomato pastes. In subsequent years, fertilisers and maize were added to this list in 2018 and 2020, respectively. By implication, importers of these commodities were forced to source forex at the parallel market, often at higher rates. In October 2023, the ban on the 43 items was lifted by CBN. Despite this, stakeholders have noted a lack of clarity regarding whether fertiliser importation can access forex from the I&E window, as efforts to apply at commercial banks have been met with hesitancy.
Furthermore, a ban on the importation of mineral or chemical fertilisers containing two or three of the fertilising elements of nitrogen, phosphorus and potassium is currently in place. However, stakeholders have observed that importing even one element is challenging, as the mere mention of 'fertiliser' on a document raises concerns among customs officials as well as credit and foreign exchange facility providers.
Similarly, the current ban on the importation of soluble fertilisers, motivated by security reasons due to their potential use in explosives, was championed by the Office of the National Security Adviser. However, this ban was implemented without adequate consultation with stakeholders within the agriculture sector, and is adversely impacting horticulture production, particularly greenhouse production, which heavily relies on these fertilisers.

In many instances, policies relevant to horticultural development have outrightly failed to achieve the intended impact. Implementation has been lacklustre, plagued by loopholes, leakages and coordination deficiencies. For example, the Tomato Policy, launched by the government in 2017, aimed to catalyse local production and value addition, reduce postharvest losses, disincentivise the importation of tomato paste, powder and concentrate, and attract more investment to the industry (CBI 2021). To encourage processors to source fresh tomatoes locally, the policy increased the import duty of tomato concentrate from 5 to 50 percent and imposed a levy of 1,500 USD per metric tonne of imported concentrate. Despite this, the outcome was a paradoxical scenario of increasing tomato wastage amidst a lack of adequate and continuous supply of tomatoes to processors. This was partly driven by breaches of agreement by farmers, poor-quality varieties and inadequate storage facilities. At the same time, some processing facilities remained non-operational or underutilised (Business Day 2020; Daily Trust 2021). The failure to operate at full capacity and the ban on the importation of concentrate encouraged smuggling activities to meet local demand. Ultimately, the policy failed to strengthen end-to-end linkages in tomato value chains and increase processing capacity (Business Day 2020; CBI 2021). Postharvest losses persisted, foreign tomato paste continued to dominate the market, and prices remained unimproved, failing to benefit the masses as intended.

The Anchor Borrowers Programme (ABP) is another example of a policy that has been largely ineffective in transforming the sector. Launched by the CBN in 2015, the ABP aimed at increasing credit access to farmers, offering non-collateral loans at single-digit interest rates with a view to boosting domestic production. Additionally, it sought to establish a linkage between off-taker processors and smallholder farmers, ensuring a guaranteed market for their products. However, the ABP was largely disappointing. The programme was marred by loan defaults, political elite capture, and implementation bottlenecks, including the late distribution of inputs well past the planting season (Premium Times 2023). As of 2023, about 48% of the N1.1 trillion disbursed loans were yet to be repaid. Issues such as a lack of due diligence and the direct involvement of some relevant stakeholders before and during implementation were identified as contributing factors to the programme's shortcomings. Stakeholders also faulted the role of the CBN, rather than the Bank of Agriculture (BOA), as the direct implementer (Business Day 2023). Given these issues, the new administration recently suspended the scheme, with the new CBN Governor noting that the CBN would focus on its core mandate and discontinue involvement in direct quasi-fiscal interventionist activities (Solace Base 2024).

A significant limitation to horticulture development in Southwest Nigeria is the issue of inadequate access to finance, despite many initiatives aimed at addressing this issue. Financing needs in the horticulture sector vary, including investment in assets and working capital for inventory, salaries or other expenses. Whereas traders and processors are more asset-driven, agro-dealers more commonly require working capital (Steemers et al. 2022). Farmers, on the other hand, require both. The factors driving the financial inadequacy are diverse and complex, presenting a formidable challenge to overcome.

Firstly, **commercial banks are risk averse to agriculture, a sentiment particularly magnified in the horticulture sector given the perishable nature of its produce**. Stringent collateral requirements are in place but often unavailable in the largely informal horticultural sector. While commercial banks invest in agriculture indirectly through aggregators or by supporting MSMEs and startups, these actors sometimes lack the knowledge and collateral to access loans effectively (Van de Broeck et al. 2021). Land is often used as collateral, but banks face significant challenges in verifying land titles and are hesitant to accept agricultural land as collateral. Formal land titles in the country are held for approximately 11% of male-owned farmland and 4% of female-owned farmland, as the majority of farmland is acquired through family inheritance. Given inheritance is largely skewed in favour of males, females are disadvantaged in land ownership and the ability to provide collateral.

At the same time, many banks suffer from inadequate human capacity or knowledge of agricultural lending, resulting in limited portfolio expansion and a high incidence of underperforming loans. Foreign exchange fluctuations and price volatility compound these challenges, particularly given the relative absence of robust hedging mechanisms (Steemers et al. 2022). Moreover, the high-interest rates of commercial lending, sometimes up to 32%, makes this option out of reach for many players within the horticulture sector.

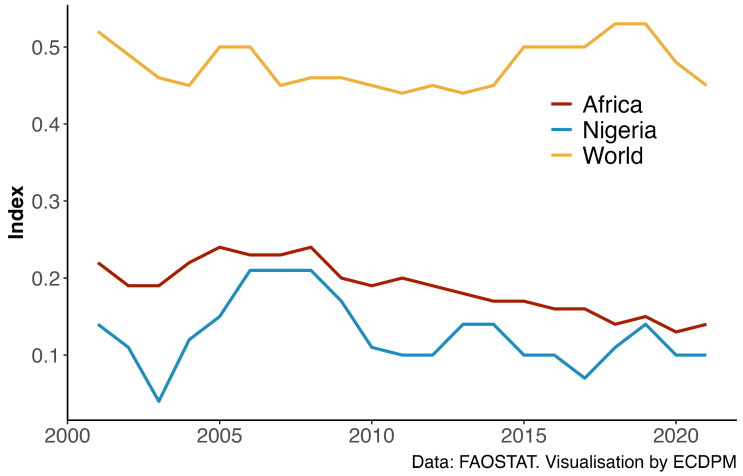
Microfinance banks play an essential role in providing financing to the agricultural sector, and their numbers have increased significantly over the years, which is in line with CBN's aim of providing access to financial services to the unbanked population. However, their impact has been limited, with only 1-10% of the target population benefiting from their services. Similar to commercial banks, the higher interest rates and a

preference for urban areas among Microfinance Banks (MFBs) pose significant obstacles to their potential to extend financial services to the horticulture sector on a larger scale (World Bank 2017).

Despite some notable successes, public agricultural finance schemes have faced challenges that hinder their effectiveness. These schemes, which rank among the top three financiers of agriculture and agribusiness in the country, include initiatives such as the CBN's ABP, the Commercial Agricultural Credit Scheme (CASC), among others, domiciled within institutions like the Bank of Agriculture (BOA), Bank of Industry (BOI), and NIRSAL Micro Finance Bank. The ABP, for instance, allocates an annual budget of ₦100 billion to support farmers through various channels, including aggregators, private companies, and state governments. Similarly, the CASC provides funding for large-scale projects estimated at ₦100 billion annually (Steemers et al. 2022). Despite the substantial funding allocated to these schemes, they have fallen short of achieving their intended impact, as they are cumbersome to secure and fraught with rent-seeking. The CASC, like the ABP, is marred by issues such as rent-seeking behaviours and implementation challenges.[2]

Relatedly, **despite a policy commitment made under the CAADP to allocate 10% of public spending to agriculture to drive 6% annual agricultural growth, Nigeria has consistently fallen short**. Agriculture only receives around 2-3% of annual total public expenditure. The country's Agriculture Orientation Index (AOI), which measures the ratio of government expenditures to GDP in agriculture, stands at 0.1 (Figure 9), significantly lower than the African and global averages of 0.14 and 0.45, respectively. This disparity reflects Nigeria's inadequate agricultural investment relative to its economic significance. Despite agriculture's immense potential, including its horticulture subsector, government actions have not measured up. The sector continues to be sidelined, hampering its growth and development, particularly in regions like Southwest Nigeria, where its potential could be maximised. A significant implication of limited investment is a huge food trade deficit as food imports quadrupled from 964 million US dollars in 1995 to 4,566 million US dollars in 2016 (Posthumus et al. 2018).

Figure 9. Agricultural Orientation Index for government expenditures, 2001-2022.



Alternative financing models, driven by organising from the bottom up, are emerging and demonstrating significant promise, but their full potential remains to be harnessed. Several agri-tech firms and start-ups are pioneering crowdfunding and aggregation platforms offering financing, capacity building, and aggregation services (Van de Broeck et al. 2021). Additionally, value chain finance initiatives increasingly connect input and output chains, providing inputs on credit with repayment structured around output. Because of strong value chain relationships, interest rates are typically low, fostering repayment rates exceeding 90%. It is worth noting, however, that aggregators source some of the funds from public finance schemes. (Steemers et al. 2022). Despite facing challenges, cooperative societies also serve as a viable model through which horticulture farmers are organising to secure credit facilities by pooling resources together to secure external funding or provide mutual financial assistance on a rotational basis.

[2] Regarding the CASC, while some beneficiaries have experienced business growth and improved operational capacity because of the scheme, others have endured setbacks partly due to bureaucratic hurdles, bottlenecks within participating banks, and delays in fund disbursement (Proshare 2018). Interviewees reported lengthy approval processes, with waiting period of up to a year before receiving funds. Furthermore, lobbying and 'under-the-table' dealings were reported to be occasionally required to hasten the approval and disbursement process.

In another vein**, priority for horticulture in agriculture policies has been crowded out by other prominent and more politically influential sectors**. Government agricultural programmes have tended to focus more on cash crops and staple crops, with little attention given to horticultural commodities, particularly their value addition, resulting in substantial post-harvest losses (Hawkins & Sobukola 2020). For instance, the Agricultural Transformation Agenda prioritised the development of value chains for five key commodities - rice, cassava, sorghum, cocoa and cotton - while largely neglecting horticulture in its policy framework. While a Tomato Policy exists, there is no strategic direction for other important horticulture value chains such as onions, chilli, citrus and indigenous vegetables. Moreover, despite widespread acknowledgement of significant post-harvest losses in Nigeria's agriculture, with the horticulture sector being a major contributor, environmental and agricultural policies have largely overlooked addressing food loss within agricultural supply chains (CBI 2021). At the regional level, there have been no deliberate policies and programmes to prioritise horticulture, and more broadly agriculture, from the political leadership of the Southwestern states.[3]

The functioning of formal institutions for horticulture development is substantially impacted by informal norms. Firstly, the dominance of rent-driven politics in Nigeria (Anugwom 2011; Roy 2017; Asiegbu et al. 2024) means that **political leaders have paid limited attention to horticulture development as it is not a sector that offers enough rent opportunities**. The ruling coalition prioritises the election cycle and retaining power over other factors influencing their policy choices. Political leaders often make decisions that benefit the electorate in the short term but may harm productive sectors in the long run (Ayinde et al. 2016). As a result, the political system has meant a severe lack of incentives for political leaders in Southwest Nigeria to put policies and programmes for horticulture development in place because it is seen as requiring patient capital and would not generate quick wins needed for them to retain power.

Relatedly, **technically sound policies relevant to the horticulture sector are often undermined by corruption, capture, clientelism, and rent-seeking behaviour by politicians and government technocrats**. Rather than serving the public interest, policy implementation is often skewed to benefit those in government or those connected to them. The evolution of these 'privileged circles' is mainly shaped by ethnicity, networks, wealth and the entrenched patron-client system in politics and the civil service.

This skewed distributive rewards system in politics and society leads to government ineffectiveness, with contracts frequently awarded to cronies and politically connected individuals (Yeboua et al. 2022). Instances of diversion of seeds and fertilisers by implementers,[4] substitution of beneficiary names, and the diversion of agricultural finance obtained at lower interest rates to other sectors both by public and private actors are common. The failure of the ABP scheme was partly attributed to the hijacking of the programme by local politicians, who used it to reward their political supporters and disburse funds to non-existent "ghost" farmers (Premium Times 2023b).

Corruption and rent-seeking practices foster disillusionment and resignation among farmers, who perceive current agricultural schemes as benefiting their public sector initiators or implementers, along with their associates, loyalists, and influential individuals. As a result, many farmers are reluctant to seek support within these schemes, believing participation is futile unless they have connections within these privileged circles. At the same time, bribery and extortion by government security officers along major highways and trade corridors have become pervasive, with officials frequently erecting roadblocks and demanding documentation and unofficial payments from transporters. These practices disrupt supply chains, causing unnecessary delays, increased costs, and deterioration of perishable products with short shelf lives (CBI 2021).

[3] Interviewees noted that political leaders in the North were more proactive on horticulture sector development than those in the South partly because many of the smallholders already participate in the horticulture sector, there were not many alternatives to the agriculture and livestock sectors, and many of the leaders were farmers themselves.

[4] Stakeholders expressed concern about the government's repeated practice of directly distributing fertilisers, citing unclear lines of distribution and a lack of capability and database for effective distribution. They argue that agrodealers, equipped with the relevant databases, should be involved in the distribution process, with the government assuming an oversight role. Direct government distribution raises questions about accountability mechanisms, as the process becomes muddled and monitoring roles are unclear. Without clarity on who monitors the government's distribution activities, accountability gaps may arise, compromising the effectiveness of fertiliser distribution initiatives. The ban on soluble fertlisers and some elements of NPK fertlisers resulted in a more that 100% increase in fertliser prices. As there was no concomitant rise in the farm gate selling prices, farmers' profit margins shrank further (Mazuri 2023).

The weak enforcement of rules and contracts in Southwest Nigeria, **mirroring the broader challenges faced across the country, provides significant barriers to horticulture development**. Rent-seeking behaviours and a deficient judicial system contribute to this problem, eroding the integrity of contracts and regulatory frameworks. Bureaucratic practices often prioritise personal interests over the public good, incentivising both enforcers and adherents to circumvent rules for their benefit. This has resulted, for instance, in the smuggling of farm inputs and banned commodities and the import and proliferation of sub-standard input products, given there is a 'briber' and a 'bribee.' Furthermore, the ineffectiveness of the judicial system exacerbates enforcement challenges. With a backlog of cases, delayed hearings, bribery, and biases towards the wealthy and well-connected (Okenyodo 2018), the judiciary fails to provide timely and impartial resolution to disputes. As a result, broken promises and contract breaches, as seen in off-taker agreements and loan repayments, go unaddressed, eroding trust and confidence in the legal framework.

A major challenge also revolves around weak oversight from the government, the public and civil society. Agencies with oversight responsibility, such as the Standards Organisation of Nigeria (SON) and the National Agency for Food and Drug Administration and Control (NAFDAC), cannot often effectively and sufficiently undertake their activities relevant to the horticulture sector. Although inadequate funding limits the capacity to deliver on their oversight and quality assurance functions (PWC 2017), some government agencies are not motivated or incentivised to perform their functions effectively as they are sometimes interested in or distracted by rent-seeking, clientelism or nepotism. On the part of the horticulture farmers in Southwest Nigeria, they are currently too fragmented and suffer from weak organisation, hence are not able to monitor policy processes and programmes meant to benefit them. Several factors contribute to this issue, including prevailing ideologies of individualism, scepticism towards accepting leadership, and the diversity of horticultural crops and interests among farmers.

The ideology of individualism, characterised by a desire for independence and self-reliance, has historically hindered collective action and coordination among stakeholders. Farmers in Southwest Nigeria often perceive themselves as having the same capabilities the leader would have and would therefore, not be led. Even when leadership is established, it is not always based on competence, leading to ineffective coordination and progress derailment.[5] Moreover, farmers' lack of incentives to organise further exacerbates the coordination challenge. For instance, forming cooperatives would be helpful in securing loans. Still, the current macroeconomic situation has made it difficult for farmers to have savings and pool resources together to access loans, leading to some cooperative societies' demise. Additionally, policymakers' lack of interest in supporting horticulture and the political elite's disengagement diminish farmers' motivation to organise collectively.

More importantly, however, **the diversity of horticultural crops implies a diversity of interests (particularly among farmers), thus affecting organisation and collective action**. Unlike poultry or maize, where farmers are better able to organise themselves because the input, farming methods and outputs are relatively uniform, horticulture crops vary widely, thus making it challenging to align interests. The implication of this lack of organisation has been significant, with actors within the horticulture value chain not adequately engaged in policy formulation. At the same time, strong organised middlemen and sellers exploit poorly organised producers, pushing prices down and exacerbating farmers' economic challenges. Despite these challenges, there is a gradual shift in the narrative as farmers begin to recognise the importance of collective action and organisation, although progress remains slow.

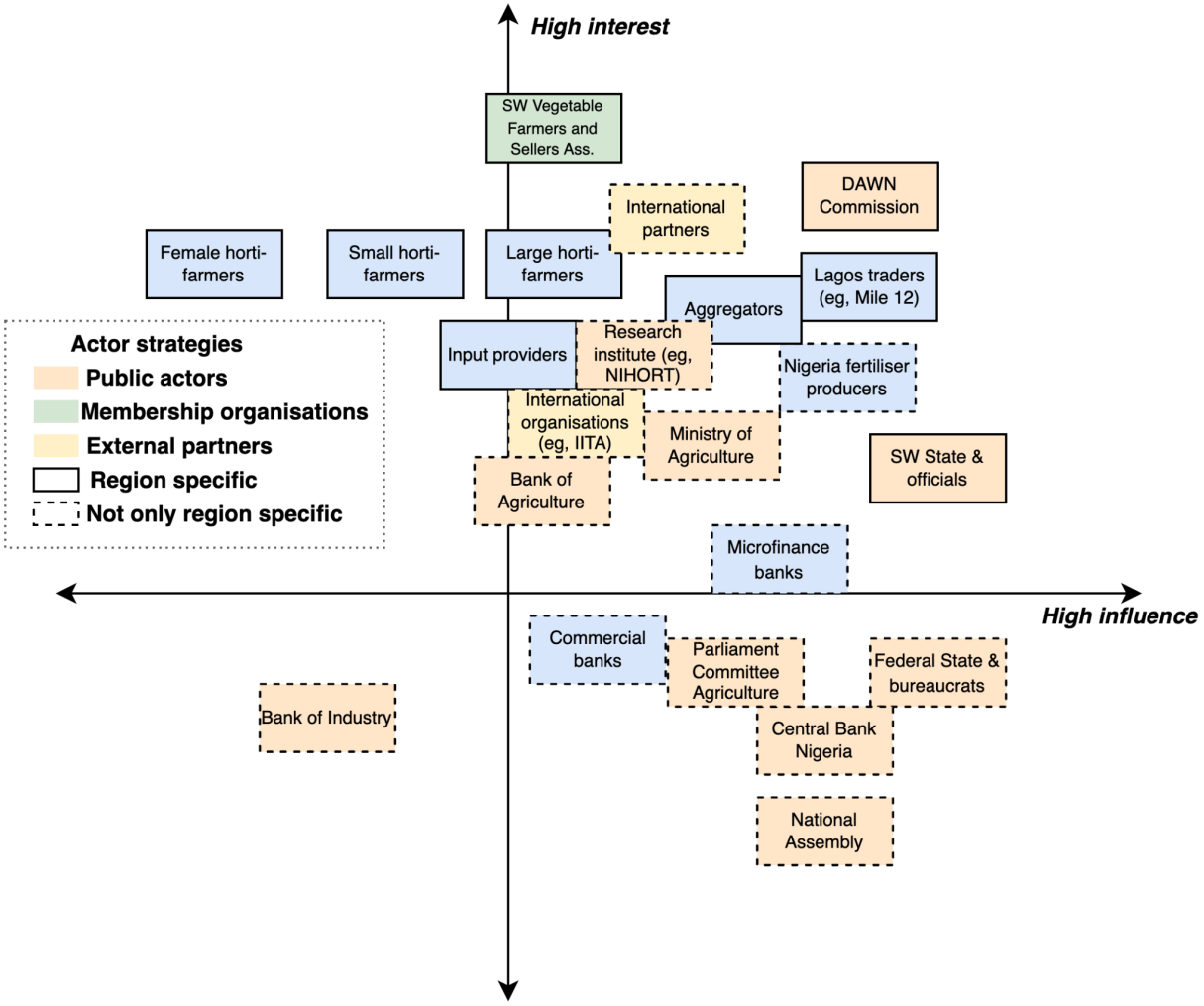
Finally, **there is a widespread lack of trust within and between groups of actors in Southwest Nigeria's horticultural value chain**, creating significant impediments to cooperation, collaboration, and collective action for sector development. Trust issues are deeply ingrained in Nigerian society, with suspicion particularly pronounced within the agriculture sector in the region. Several factors contribute to this lack of trust. Firstly, rather than fostering trust, relatively better educational attainment in the region fosters suspicions among actors. Moreover, members' high perception of corruption and fraud erodes trust even further. Perceived competition for resources and opportunities also exacerbates trust issues, particularly among within-group actors, limiting the ability to gain more robust oversight capacity or engage in collective bargaining. Furthermore, trust is built on a foundation of accountability and culpability; however, as previously mentioned, the nation's judicial system is fraught with challenges.

[5] Source: Interviewed participants

2.5. Fragmented private sector and ineffective state actors

Within the context of the above structural and institutional factors, the horticulture sector in Southwest Nigeria is a patchwork of isolated actors and groups, with much fragmentation and weak organisation occurring throughout the sector (Figure 10)**.** One of the defining features of Nigeria's Southwest horticulture sector is the limited presence of membership organisations, such as producer associations. While national organisations exist (e.g., the National Association of Tomato Producers), these organisations are mostly focused on the Northern states. Interest by policymakers at both the national and state levels lies in other sectors or is skewed to other regions. This fragmentation mostly creates losers in the SW, especially producers, but generates some winners, like bureaucrats at the national and state level and market sellers (e.g., at Lagos markets). While several agri-R&D and education institutions exist (e.g. NIHORT and IITA), limited budgets and resources hinder the translation of research findings to farms through extension services. Various external partners are active in the Southwest, with a host of agricultural programmes focussing on farmers, input provision, knowledge and innovation, finance, market and business support, among others. Many of these externally funded programmes are not dedicated to the horticulture sector but have spillover effects impacting the sector and its actors.

Figure 10. Mapping of selected actors and organisations on their interest and influence in the Southwest horticultural sector. *The ranking is based on interviews and expert opinion.*



A cluster of public-private actors stands out for their high influence and interest.

1) *The DAWN Commission*
   - The Development Agenda for Western Nigeria (DAWN) Commission is an agency set up by the SW states to support their sustainable development, which is part of a regional integration drive. The DAWN Commission thus promotes policy development relevant to the whole SW region. Realising the need for more interest of policymakers in the SW agricultural sector, the Commission is currently working on a policy framework for agricultural transformation, in collaboration with the state governors and several other sector stakeholders.
2) *Traders and aggregators*
   - Traders and aggregators are key players in the supply of the large Lagos market. With multiple sources to buy from - like the Northern region and neighbouring countries - traders have a strong bargaining position versus the SW farmers. Aggregators are often farmers themselves, which was deemed important in building trust by their supplying farmers. Aggregators did not seem to be much organised, but traders in Lagos had a strong organisation.
3) *International partners*
   - International partners support several specific horticultural programmes in SW Nigeria, including seed support, champion clusters, and knowledge exchange.

Many more actors and organisations have a medium influence and interest, or a high influence but little interest.

4) *Nigeria fertiliser producers (e.g., Indorama and Dangote)*
    - Agricultural input shops mentioned Indorama and Dangote as the largest fertiliser producers in Nigeria. Dangote, owned by Africa's wealthiest person, opened in 2022 a new USD 2.5 bn fertiliser plant in Lagos. These producers were successful in lobbying President Buhari to restrict foreign currency access for fertiliser imports in order to support domestic production, ultimately increasing the prices for producers. However, Dangote-produced fertilisers were rumoured to be mainly for lucrative export.
5) *Research institutes (e.g., NIHORT)*
    - The National Horticultural Research Institute, located in Ibadan, is arguably the premier national public institution in horticultural research and has extensive research into agronomic research and product development. But it has - just as with other agri-research organisations in the SW - a challenge of converting research findings to farms and markets due to lack of funding.
6) *International organisations (e.g., IITA)*
    - The International Institute of Tropical Agriculture (IITA) is a research-for-development organisation facilitating agricultural solutions throughout sub-Saharan Africa, and is a CGIAR-affliated member located in Ibadan. The institute is a partner of the Youth in Agribusiness programme and sells general services, such as soil testing, to farmers.
7) *Federal Ministry of Agriculture & Rural Development (FMARD)*
    - The Federal Ministry of Agriculture was seen as lowly influential and interested in SW's horticulture, given the focus on food security in national strategies, its broader agricultural focus on crops, livestock and fisheries. Its influence might be then more indirect.
8) *Bank of Agriculture*
    - Nigeria's Bank of Agriculture is specifically aimed at supporting agriculture and rural development. The Bank finances agriculture, but has no horticulture-specific finance. In this absence, and given more organisation and visibility for cash crops, grains and livestock, horticulture is significantly disadvantaged. Interviewees noted the Banks's limited lending capacity and the difficulty in accessing loans without much collateral or network (see finance difficulty in a previous section).
9) Agricultural input providers
    - Input providers play a critical role by supplying resources like fertilisers, seeds and plant protection products. Most are small to medium enterprises, like Solokad in Ibadan and VD&S in Epe, selling directly to farmers. Larger companies, like Afri-agri, import directly but face a cumbersome import bureaucracy and much difficulties accessing domestic business capital. The providers have updated lists of clients, which is one of the ways to know who is farming in a data-poor environment. Government input subsidy schemes sometimes work through the input providers.
10) *Southwest State and officials*
    - The Southwest state governments have considerable devolved powers and seek to work together on security and sustainable development. Overall, the SW state governments are not very interested in horticulture or agriculture. Officials, given the transparency and service delivery issues discussed above, have some leeway to direct state resources to their networks.
11) *Southwest Vegetable Farmers and Sellers Association*
    - The only membership organisation dedicated to horticulture in the SW region has little influence. The association is new and mostly unknown, lacking resources and a wide membership base.
12) *Local NGOs focused on the development of the horticulture value chain.*
    - Organisations like Caritas Nigeria, Justice Development and Peace Movement, and Raise A Farmer Initiative have worked as non-government sector-driven extension organisations to develop the horticulture subsector in Ekiti, Ondo, Oyo, and Ogun State. Through collaboration with other organisations, they have been able to reach more farmers, influencing the sector's development.

Female and small-scale farmers are some of the least powerful actors. This position does not only stem from their limited access to resources like land, credit, and extension services, but also from their marginalisation in policymaking processes. This exclusion from decision-making tables creates a vicious cycle: Without a strong voice, the specific needs and challenges faced by women and small-scale farmers

remain unheard, perpetuating the very inequalities that limit their access to resources and hinder their agricultural productivity.

Public organisations populate the low-interest half. Federal and state officials are more focused on food security and dealing with better-organised interest groups. At the national level, agriculture is, politically speaking, much more geared towards the Northern states. The Bank of Industry, much more powerful and resource-rich than its Agricultural counterpart, does not support agriculture except for machinery and factories. Commercial banks are risk-averse and prioritise other sectors. In-house experience in agriculture and horticulture is limited, but some banks, like First Bank, Sterling Bank and Access Bank, are building their expertise in different agricultural sectors, including in tomatoes and vegetables.

Underdevelopment of the sector mostly creates losers, but producers face the largest lost opportunities impacts. The underdevelopment of the horticulture sector creates a host of negative effects, from missed livelihood opportunities to worse dietary affordability for consumers and more dependency on food imports. Caught between competition from Northern and neighbouring country's producers, little policy interest and support, less-than-ideal growing conditions and little organisational heft (Figure 10), horticultural producers shoulder the heaviest impact, and their weak position is a primary reason for the continued underdevelopment in the region. Cross-sectional inequality worsens this situation as female farmers encounter additional challenges due to traditional gendered barriers to land inheritance, heightened vulnerability to insecurity, and greater difficulty accessing financial resources.

National and state officials and market sellers gain the most from the current fragmentation of the horticultural sector. Officials, especially at the national level, are best positioned to benefit from the current state of the horticulture sector in Nigeria, owing to their ability to direct state resources for their own benefit, from diverting agricultural subsidies to their networks and setting up fake farms for frauding support. This is reported to be an issue throughout the different institutions, from ministries to public banks.[6] Even though there is little dedicated horticulture policy, programmes that should spill over into the horticulture sector (eg, general ag-input schemes) often do not reach the intended end-user but get syphoned to those that implement the programmes. The low accountability and scant checks-and-balances, discussed above, mean there are insufficient guarantees for effectively supporting the sector.

Although the horticulture sector is characterised by high levels of fragmentation among stakeholders, market sellers - a segment with a higher degree of female actors than many others - are arguably its best-organised section. Because of their opportunity to buy from multiple sources - the Southwest, North or neighbouring countries - they have a strong bargaining position over the aggregators - who buy directly from producers - from the Southwest. Price agreements among market sellers are not unheard of, and discipline is reported to be strong. Due to their organisational power, the market sellers have some political clout, especially during election season.

The lack of influential membership organisations is a defining feature of the horticulture sector. Especially strong producer organisations are absent, owing to several reasons both internal and external to the sector (see previous). Other actors are not helpful in incentivising the formation of producers' associations: market sellers leverage their multiple channels to source produce from - eg, the North, individual farmers or neighbouring countries - and may actively undercut the stronger bargaining position of producers, while policymakers prioritise other sectors.

Public actors are not very interested in supporting the horticulture sector and dedicated public actors lack capacity and resources. According to interviewees, in contrast to governors in the North who often have a background in agriculture, governors in the Southwest generally do not come from the agricultural sector, with agriculture and horticulture being far less important for livelihoods. They, therefore, tend to prioritise other sectors, such as infrastructure development and support to the manufacturing sector. These differences in state priorities between the North and Southwest mostly reflect regional differentiation in their economic structures, with a more advanced and diversified economy in the Southwest allowing better rent opportunities in other sectors than agriculture.

Although many universities and education facilities in the Southwest offer agricultural education, extension services for actual producers are ineffective in supporting the horticulture sector due to lacking funding and capacity. The Southwest has a variety of federal and state universities, polytechnics

[6] Source: Interviewed participants

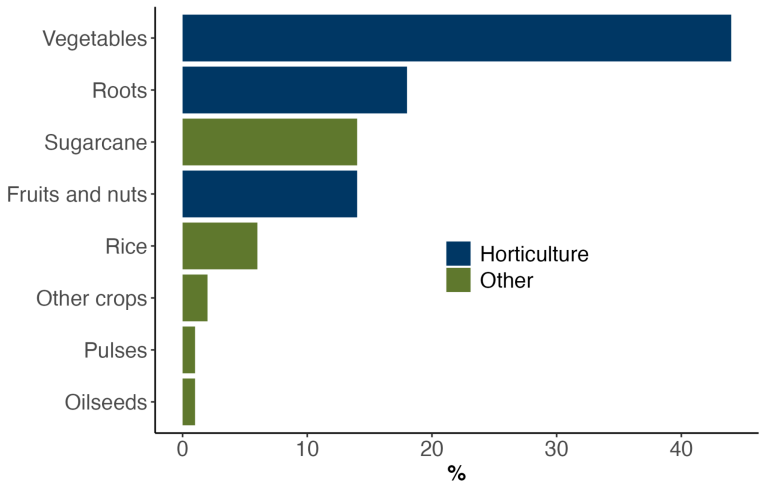
and colleges offering agriculture as a subject (Hawkins & Sobukola 2020). Residing in the Southwest's Oyo state are NIHORT, the National Horticultural Research Institute (mentioned above), with Oyo state also hosting IITA or the International Institute of Tropical Agriculture, which is a CGIAR-affiliated member and has many research programmes and ag-business support activities. However, there seems to be a disconnect between the research system and practical farm-level implementation, according to interviews, with, especially in the case of NIHORT, a challenge of converting research findings to actors and markets due to lacking funding. Extension services are often not knowledgeable about horticulture in the Southwest, with farmers receiving more information from private sector input providers. Extension services at the national level might only receive 0.6% of the agriculture budget, resulting in only 1.3% of Nigerian farmers receiving support (Hawkins & Sobukola 2020). Historically, horticulture production was more in the North, as discussed above, so generational knowledge is less available. Consequently, horticulture production and processing knowledge and information exchange are insufficient.

2.6. Sectoral factors: access to input, value chain integration and knowledge gaps

Sectoral factors relate to the nature of the sector itself, spanning the entire value chain of horticulture encompassing production, processing, distribution, retail and consumption.

A major sector-specific issue affecting horticulture development is the lack of adequate access to inputs, including fertilisers, improved seeds and irrigation, which undermines productivity. Horticulture crops often require more fertilisers than other agricultural crops, a trend reflected in Nigeria where more than 60% of fertiliser usage in Nigeria in 2018 was for horticulture crops (Figure 11). On average, fertiliser usage across all crops in Nigeria stands at 19.7 kg/ha, significantly below the recommended application rate of approximately 130 kg/ha for major crops cultivated in open fields (Steemers et al. 2022). Given horticulture's heavy reliance on fertilisers, the sector suffers disproportionately from the overall low fertiliser usage. Compounding this challenge is the ban on the importation of soluble fertilisers, leading to a scarcity of water-soluble fertilisers crucial for the horticulture sector's needs in Southwest Nigeria.

Figure 11. Fertiliser use per crop in Nigeria



Data: Nigeria 2018 Social Accounting Matrix. Visualisation by ECDPM.

Access to and utilisation of quality seeds of improved varieties by farmers have remained limited, with less than 15% of farmers using such seeds, despite the operations, infrastructure and economies of scale of a wide array of seed sector stakeholders (NASC & SEEDAN 2020). Many farmers opt to recycle their own seeds to mitigate upfront costs (Van de Broeck et al. 2021). Efforts by the Southwest state governments to facilitate access to these inputs have also been inadequate.

It is estimated that 50% of the yield gap in agriculture can be closed by using quality seed of improved and/or hybrid varieties, and the other 50% through applying good agronomic practices and using fertilisers

(NASC & SEEDAN 2020). However, the limited access and use of these inputs continue to result in low yields and reduced profit margins for farmers.

Another significant barrier to the sector's growth has been the incidence of pests and diseases that farmers frequently grapple with. Notably, the Tuta Absoluta pest has ravaged tomato crops since 2015 in Southwest states such as Oyo, Ogun, and Osun. This invasive species resulted in a notable decline in production levels, posing a serious threat to local livelihoods (Aigbedion-Atalor et al. 2019). Furthermore, farmers in the Southwest face challenges in managing soilborne diseases, particularly impacting tomato production (Abiala et al. 2021; Van de Broeck et al. 2021).

The horticulture sector is also currently characterised by weak value chain integration, impeding its development. This challenge stems from diverse factors, including a lack of uniformity in products due to unregulated production methods and standards, insufficient linkages between producers and processors, limited processing facilities and capacities, and a dearth in the availability and use of knowledge and technology for value addition (Okewole 2021). Furthermore, there is a notable gap in technology transfer from research institutes to other sector actors and limited commercialisation of developed value-added horticulture products. Logistics challenges are also evident, primarily driven by the long distances from farm to market or processing facilities, poor road networks, and high transportation costs. At the same time, the underdevelopment of public and private support services in finance, transport and storage sectors further compounds the weakness in value chain integration (Zaman et al. 2019).

Postharvest losses pose a critical challenge to the horticulture sector in Southwest Nigeria, given the underdevelopment of value chains encompassing production techniques, processing capabilities, market infrastructure, technology, storage and logistics. For example, postharvest losses in the tomato value chain are estimated to be around 50% (Hawkins & Sobukola 2020). The use of raffia baskets for tomato produce, as opposed to other viable alternatives, leads to significant losses. While efforts to introduce reusable crates have reduced food losses during transit, market uptake remains around 50% of total tomatoes traded due to challenges with reverse logistics (returning crates to points of origin; CBI 2021), and the potential impact on income and employment for those involved in raffia basket production, with whom farmers have established enduring business relationships. Additionally, product packaging is generally underdeveloped, leading to significant losses. Cold storage facilities are gaining traction, as farmers and traders in other crops and sectors are willing to pay for storage as a service. However, uptake is still limited among horticulture farmers, given the associated costs, including storage and transport costs. At the same time, the government and the private sector have paid little attention to investment in cold storage as a strategy to curb postharvest losses.

There is also the issue of knowledge gaps in farmers' agronomic practices. Many lack expertise in understanding agroecological differences and their implications for seed selection, the appropriate application of pesticides and fungicides, and technology utilisation. About 98% of farmers rely on generic products without considering crop and soil characteristics, while over half apply inappropriate quantities (Steemers et al. 2022). Compounding this issue is the inadequate provision of extension services. Although efforts by non-governmental organisations (NGOs) and the private sector are increasingly filling this void, government extension services in horticulture remain poor in Southwest Nigeria (HortiNigeria 2023). Due to the limited capacity and funding of research institutes, the dissemination of developed varieties that will work in respective ecological zones as well as other innovations relevant to farmers, is not adequately done.

The horticulture sector in Southwest Nigeria also suffers from labour shortages, leading to crop losses and production inefficiencies. One contributing factor is the disparity in labour costs between the region and the northern regions, with labour from the Southwest often demanding higher rates. Also, many workers from the north who are employed on farms in Southwest Nigeria are choosing to return to their home regions. Furthermore, the depreciation of the Naira has led to a decline in the number of labourers from outside the country, as their earnings in Naira have lost value. In more organised farms, low wages offered to farm managers lead to high turnover rates, exacerbating the labour shortage issue.

3. Recommendations

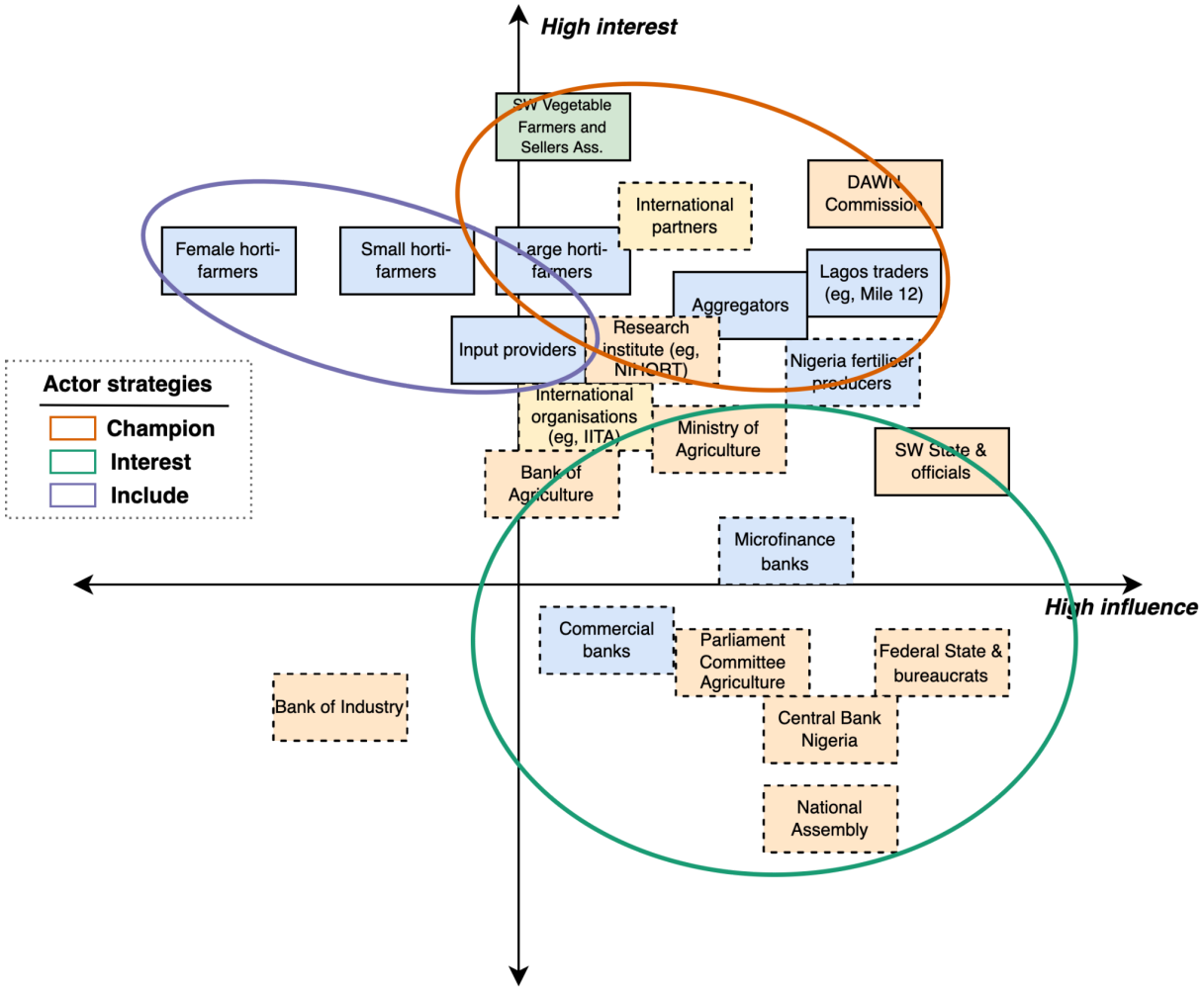
The study investigated the complex political economy factors that shape the horticultural sector in Southwest Nigeria. A lack of prioritisation by political elites, inefficiencies in the government, inadequate coordination within the sector, low farm productivity, limited producer organisation, and weak value chain integration are significant contributors to the sector's underdevelopment.

Given lacking state effectiveness and capacity, as well as rent-seeking practices, **government-led approaches to horticulture sector development in the immediate future may be disappointing**, as they might not reach the intended end-users. Nevertheless, international development partners, civil society, and the private sector could play a vital role in facilitating policy dialogues, formulations, and implementation with the political elites in the six Southwest states to develop the sector. This could catalyse the interest of the political elites in developing the sector. The DAWN Commission, which is the coordinating agency for the sustainable development and regional integration agendas of the Southwest region, is an important stakeholder in this regard.

In light of the importance of an enabling environment for horticultural development in Southwest Nigeria, **a multi-stakeholder sectoral vision and strategy brokered by a neutral facilitator driven by the private sector and civil society, and with the government in a partner role is urgently needed**. This strategy should be collaboratively developed with all stakeholders, including research institutes, financial institutions, input providers, small and large producers, aggregators, processors, and sellers. Such a strategy could be facilitated or championed by any or a combination of the private sector, development partners, or civil society. The strategy may **first prioritise a selection of horticulture produce and value chains** since horticulture sector diversity can hamper alignment interests. Priority crops can be tomatoes, sweet potatoes, pepper, and green leafy vegetables.

As part of the sector development strategy, actors can be targeted according to their interests and influence (Figure 12). Those with a high interest and influence are in a good position to be the champions of change. They should be connected, their visions aligned, and can be part of implementing strategy. A dedicated programme of inclusion and capacity building can empower those having a strong interest but currently wield limited influence. Through investment in their organisational strength, these actors become, ideally, champions. Finally, actors with significant influence but lack interest in the horticulture sector can be engaged through targeted communication efforts. By highlighting the broader importance of the sector or linking horticulture development to their specific interests and concerns.

Figure 12. Strategies for actor engagement



Improving the collective action capabilities, political influence, and organisational power of producers and other marginalised groups operating in the horticulture sector is imperative. It must be given priority in order to bolster their influence. Lessons on the 'actor cooperation' element of ongoing initiatives supported by international partners can be harnessed and scaled up. This should be supplemented with efforts to reach out to and encourage cooperation among underserved horticulture production individuals and communities. In order to foster organisation or cooperation, incentives are often necessary. There is thus the need to facilitate the availability of such incentives, including developing and strengthening Agribusiness clusters and cooperative societies to provide an ecosystem of support and facilitate access to finance or input and output markets.

For enhanced productivity in the horticulture sector, it is critical to **steer the debate towards productivity improvement, promote knowledge sharing and capacity strengthening in sustainable horticulture production in SW states, and facilitate access to improved seed varieties and fertilisers.** It will be important to leverage the current progress in improving vegetable farming techniques and technology adoption, particularly by introducing high-yield seeds and drip irrigation technology in states such as Ekiti, Ondo, Ogun, and Oyo. Continuing and expanding horticulture development programmes will provide further assistance to value chain actors, working closely with local CSOs who have firsthand experience on the ground.

There are seed companies which specialise in developing high-yielding hybrid seeds that are adapted to the agroecological conditions of Southwest Nigeria, making them valuable partners in educating distributors. These businesses should identify and collaborate with local distributors with business acumen and local industry knowledge while offering marketing support to drive business growth. At the same time, facilitating the establishment of producer organisations or production clusters is critical to enabling resource pooling for input procurement and securing favourable off-take pricing. Given that younger farmers in

South-West Nigeria are technologically adept and rely largely on social media for information, harnessing this technology is critical in disseminating knowledge for productivity improvement.

Reducing post-harvest losses is imperative for advancing the horticulture sector. The **enhancement of knowledge regarding appropriate harvesting and post-harvest procedures should be prioritised**. Encouraging the adoption of mid-tech production systems and processing of produce is critical to minimising food losses and should be actively supported. Leveraging foreign and private sector expertise in logistics and food technology offers an opportunity to improve horticulture produce logistics and transportation, reducing post-harvest losses. For instance, further encouraging the use of plastic crates and addressing the reverse logistics challenges associated with these crates will be necessary. Introducing cold storage facilities is another effective strategy for relieving pressure on farmers and dealers to sell quickly, minimising food losses and increasing producer prices. It is thus imperative to promote the use of cold storage facilities and facilitate access to cold storage service providers, both locally and internationally.

Access to finance for value chain actors is critical for driving the growth of the horticulture sector. **There is, therefore, an urgent need to facilitate the development of innovative finance mechanisms for horticulture, fostering collaboration with private actors, farmer cooperatives, and agribusiness clusters to promote better financial access**. A crucial part of improving access would be encouraging farmer cooperatives' formation and promoting a credit input supply system tailored specifically for farmers. At the same time, offering vocational and technical training for youths and women to develop creditworthy horticulture business plans is essential.

Building on existing initiatives, such as the syndicated loan facility which Access Bank was able to access from a development finance institution to promote agribusiness, enhanced collaborations between Nigerian commercial banks and other development finance institutions should be facilitated, to provide loan and guarantee facilities to commercial banks, hence promoting the development of the horticultural sector. Finally, recognising the significant role of public finance in agricultural financing in Nigeria, dialogue among public stakeholders, particularly relevant public financial institutions and Southwest state governments, regarding financing mechanisms for horticulture in Southwest Nigeria needs to be promoted.

Given that a significant proportion of the sector players in Southwest Nigeria operate within the informal sphere, ways and possibilities of working with informality need to be acknowledged and explored rather than solely focusing on structural transformation and policies to formalise it. This could entail providing support in improving market infrastructure, building trust, and improving their organisation capacity as well as knowledge and skills, including record keeping and produce handling.

4. Conclusion

This study assessed the political economy dynamics of the horticultural sector in Southwest Nigeria. A host of structural, external, institutional, actor-related and sector-specific factors contributed to the underdevelopment of the sector, many of which strengthen each other and uphold the status quo. **Structurally**, the sector suffers from path dependency caused by natural limitations and historical neglect. Security and economic challenges further impede development, while rapid urbanisation can be both a boon for food demand and a curse for scarce water and land competition. The sector is at the receiving end of a few **external dynamics**: Nigeria is very exposed to the impacts of climate change, which will lower its agricultural productivity. The Russian invasion of Ukraine increased fertiliser prices and resulted in a diversion of ODA funds towards in-donor refugee costs. FDI are down, making capital more expensive and slowing down the economy and diversification.

Institutionally, there are inconsistent policies, difficulties accessing capital, governments prioritising other sectors and a host of informal norms - rent-seeking politics, corruption and weak rule enforcement - impacting the sector. Furthermore, the sector is a patchwork of different **actors** and organisations, with much fragmentation and weak organisation occurring throughout. The lack of influential membership organisations is a defining feature of the horticulture sector. Winners are market sellers and officials, while especially producers - specifically female and small-scale farmers - lose out. Public actors are not very interested in supporting the horticulture sector, while universities and extension services lack funding and capacity to translate research findings to the farm and market. **Specific to the sector** are limited access to

fertilisers and improved seeds, while high disease pressure further reduces yields, and weak connections between producers and processors and inadequate storage solutions lead to significant postharvest losses. Lastly, knowledge gaps among farmers and a shortage of reliable labour restrict the sector's overall potential.

The root causes of the Southwest horticulture underdevelopment are, first and foremost, the country's **dependence on oil** revenue, meaning less government support for agriculture. Second, **weak institutions** plagued by corruption and inefficiency further hinder progress, with **low farm productivity** due to limited resources and knowledge restricting growth. Other obstacles are a **lack of access to financing** and **poor organisation among producers**. Finally, **scant coordination across the sector**, including limited information sharing and collaboration, hinders overall development.

The sector could be propelled forward through the development and facilitation of a **multi-stakeholder sectoral vision and strategy** driven by the private sector and civil society, with the government in a partner role. Actors can be targeted with three **engagement strategies**: those having a high interest and high influence are in a good position to be the champions of change, while a dedicated programme of inclusion and capacity building can empower those having a strong interest but currently wield limited influence. Actors who hold significant influence but lack interest in the horticulture sector can be engaged through targeted communication efforts. By highlighting the broader importance of the sector or linking horticulture development to their specific interests and concerns, their engagement can be cultivated. Importantly, **supporting the development and functioning of producers' associations should be prioritised**. **The private sector, development partners, or civil society could facilitate or champion such a strategy.**

The sectoral vision should include **productivity** improvements, promote **knowledge** sharing and **capacity** strengthening in sustainable horticulture production and **post-harvest** procedures in SW states, and facilitate access to improved **seed** varieties and **fertilisers**. Furthermore, it is important to further explore the potential of innovative finance mechanisms for horticulture and promote better **financial access**.

Developing the horticultural sector in the SW can provide many economic and health opportunities. There is no one obstacle; hence, any attempt requires a coordinated approach across the sector to maximise impact. Moving forward, the absence of political prioritisation may present an opportunity, as there are less entrenched and powerful interests that can block possible development programmes for the sector. Furthermore, the region's rapid urbanisation has the potential to open up new opportunities within the value chain, provided input and marketing systems can properly navigate existing obstacles and corruption.

References