

Assessment of the Vegetable Sector in Nigeria

Ogun State

Oyo State

Photo: Benedict Ukpukpen

Introduction

The vegetable sector is developing rapidly in Nigeria. This steady growth carries significant implications for the livelihoods of small-scale farmers (including women and youth), entrepreneurs, businesses in various sub-sectors, market players, and both rural and urban consumers. Governments, knowledge institutes, and development partners are actively contributing to the sector's development. Each stakeholder's individual actions in horticulture must be integrated into a broader framework to strengthen the sector. This integration should encompass not only activities in the production areas and markets where they operate, but also sector governance and the establishment of an enabling environment.

In this setting, the HortiNigeria program has taken the initiative to conduct a performance assessment of the horticulture sector, which is believed to be a stepping stone in this joint action process. The purpose is to gain a better understanding of the challenges; engage with partners to transform these challenges into objectives that will contribute to sector transformation; reinforce relationships with relevant stakeholders; inform local, regional, and national stakeholders about this strategic development process; and ultimately embed their actions in a larger transformation strategy for the horticulture sector. A sector performance assessment was conducted for Kano and Kaduna states in January 2021, and the report is available for download [here](#). This document presents the results of an assessment carried out in Oyo and Ogun states in April 2023.

The HortiNigeria program

To deal with the numerous challenges and foster a sustainable and inclusive horticulture sector in Nigeria, the Embassy of the Kingdom of the Netherlands (EKN), in alignment with national stakeholders, is funding the HortiNigeria program. The four-year program (2021-2025) is led by the International Fertilizer Development Center (IFDC) and implemented through a consortium with East-West Seed Knowledge

Transfer (EWS KT), Wageningen University & Research (WUR), and KIT Royal Tropical Institute. HortiNigeria works in four states: Kaduna, Kano, Ogun and Oyo.

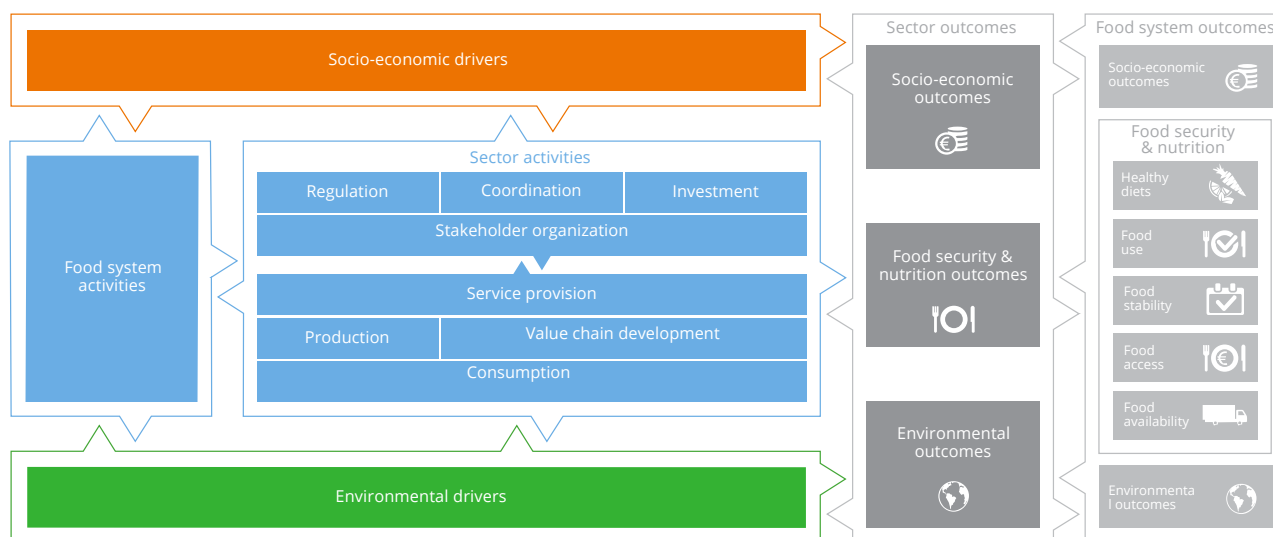
Food Systems and Sector Transformation Framework

The food systems approach is increasingly used as an interdisciplinary conceptual framework to better understand transitions in the supply of healthy food, sustainable resource use, and social inclusion. Moreover, food systems are widely used to drive policy instruments. Sector transformation is a subset of the food systems approach that focuses on one particular agrifood sector within the larger food system. Sector transformation takes into consideration the production and market base, their relationships with services, finance, and regulations, as well as governance and coordination. The sector framework is closely linked to the food system framework with its food security and nutrition, socio-economic, and environmental outcomes. Figure 1 shows how agrifood sectors can be integrated into the food system framework.

Sector Assessments

Since May 2020, WUR and its partners have been conducting rapid assessments to provide valuable insights into the impact of the COVID-19 pandemic and associated social and economic crises in various agrifood sectors in sub-Saharan Africa. In some sectors, assessments were conducted in a series of two to three iterations to monitor how the crisis impacted seasonal sector dynamics and how effective, in some cases, the mitigating actions were. In other sectors, the assessments were used to evaluate overall sector performance and identify systemic bottlenecks. The assessment documents produced serve as valuable resources for decision-makers in government, industry, research, and civil society and farmer organizations at the country level. They highlight where bottlenecks are most severely felt and subsequently identify and prioritize actions to address the identified challenges. The series of sector assessments can be accessed through this [link](#).

Figure 1. Integrated sector and food system framework. Source: Borman et al., 2021¹



Methodology

A. Defining boundaries and institutional settings

For each vegetable production area, the leading partner, in collaboration with WUR, identifies the most appropriate institutional setting for conducting the sector assessment, i.e., which organization/institution is best positioned to host and own the assessment process. There should be clear linkages to a producer or market association and a cluster or aggregation of producers and companies; the state and/or local government should also be involved. This step results in defining the boundaries for conducting the sector assessment in terms of crops, markets, and geographical coverage. It therefore requires the involvement of WUR and partner organizations, including the leading organization. It sets the scene, and until this step is completed, the sector assessment cannot begin. If the links to producers, producer organizations, aggregation of producers, markets, and/or platforms are not viable, the partners may consider diverting to another geographical or production area.

B. Defining sector activities and designing the survey

- The methodology for the sector assessment uses the integrated sector and food system framework (Figure 1). A brainstorming session is held by the assessment team, which includes some experts and key informants with an in-depth knowledge of the sector; these are joined by representatives of sector platforms. During this session, sector activities are identified.
- The team assesses the sector's performance in

terms of sustainability, competitiveness, transition to healthy diets, sustainable resource use, and social inclusion.

- The questions are then transformed into a survey questionnaire, guided by – but not necessarily structured along – sector activities. The survey questions link each activity to the transformation of the sector.
- Responses range from “severely negative performance” to “highly positive performance,” including “neutral in terms of performance.” Respondents can also indicate when a question is not applicable or if they are unaware of the impact.
- The survey should have a limited number of questions, and a subset is selected for each stakeholder group. Due to their involvement in different sector activities, panelists are given questions that are tailored to each stakeholder group.

C. Establishing a panel of experts

A panel of experts, or respondents, is established. The panel comprises relevant stakeholders representing the government, from various departments and levels of administration; producers and producer organizations, such as cooperatives and unions; farmer organizations; the private sector, including input supply companies, processors, traders, exporters, commercial service providers, and their platform organizations; financial institutions; research and educational organizations; regulatory bodies; civil society organizations; and development organizations. The leading organization plays a critical role at this stage in ensuring the proper composition of the panel. A minimum of six people from each stakeholder group

¹ Borman, G.D., De Boef, W.S., Dirks, F., Saavedra Gonzalez, Y., Subedi, A., Thijssen, M.H., Jacobs, J., Schrader, T., Boyd, S., Ten Hove, H.J., Van der Maden, E., Koomen, I., Assibey-Yeboah, S., Moussa, C., Uzamukunda, A., Daburon, A., Ndambi, A., Van Vugt, S., Gujit, J., Kessler, J.J., Molenaar, J.W., Van Berkum, S., 2021. Putting food systems thinking into practice: integrating agricultural sectors in a multi-level analytical framework. *Global Food Security*.

are included in the panel, allowing for an adequate degree of representation. The geographic distribution of the experts – over administrative levels within a production area, such as local government areas (LGAs) – can be taken into consideration. For example, if two distinct groups of LGAs are considered as sub-groups within a production area, subsampling by stakeholders covering two groups of LGAs is included in the design, creating further options to gain insights into geographic variations among the responses.

D. Implementing the survey

Participants receive information on the sector assessment through the leading organization and its partners. Subsequently, the leading organization shares a link to an online survey questionnaire, which respondents can fill out on a smartphone or another device. The software allows for adaptation of the questions to the stakeholder profile of the respondent. In case of no internet access, the survey can also be conducted by telephone interview or in person through an enumerator. Completion of the survey takes a maximum of 15 minutes. The survey is managed online by WUR, and the leading organization is provided with the link. The team can monitor the number of participants and each participant's response in real time. The survey is open for a limited period of time.

E. Analyzing data, developing a dashboard, and identifying key challenges

The results of the survey are processed, transforming the level of impact into numeric scores; for each question, the frequency of the various scores is calculated. This is complemented by the calculation of a stakeholder-weighted average score, meaning that the average score of respondents in each stakeholder group is computed and, subsequently, the average of the stakeholder group is calculated. Considering that the number of respondents is not equal for each stakeholder group, it is important that each stakeholder group, and not each respondent, is given an equal weight in the calculation of the average score. The team then develops a dashboard based on the outcomes of the survey. Where possible, questions and responses are grouped together and structured along sector activities, allowing the dashboard to give an overview of the situation. The results presented in the dashboard are based on individual questions and topics and inform the identification of challenges. Questions in which many respondents have indicated a high negative performance are identified and grouped into specific challenges. Challenges can be linked to individual activities in the value chain or to more general operations within the sector activities. The team identifies key challenges; if required, key informants are consulted.

F. Conducting focus group discussions to elaborate ambitions

Each focus group discussion (FGD) brings together experts who are selected based on their expertise and their practical experience in the sector. The multi-stakeholder composition of the FGDs ensures insights into and ownership of the challenges. The composition, combined with the triangulation of responses from key informants and sector specialists, prevents a bias in favor of the interests of individual stakeholders or stakeholder groups within the sector. The meetings are usually organized in 60- to 90-minute (virtual) sessions, facilitated by one or two members of the regional consultant team, who divide tasks between facilitation and note-taking. Where possible, a WUR staff member joins the meeting, mainly as an observer. Ahead of the meeting, participants receive information on the sector assessment, the dashboard, and outcomes of the survey. The meeting starts with a brief introduction, presenting the key challenges and the ways in which they can be transformed into ambitions. The core of the meeting is to brainstorm on refining ambitions and identifying the stakeholders responsible for taking the initiative and driving actions to achieve them. To structure this, FGD participants are split into smaller discussion groups. Parallel breakout sessions comprise three to four participants representing different groups of stakeholders. Each discussion group delves deeply into one or two key challenges/ambitions and discusses the actions required to achieve the ambitions, which will contribute to increasing the performance of the sector. They identify relevant stakeholders and their level of operation (local, production area, value chain, specific market, state or national) and the drivers/catalysts for the action. Outcomes of the separate discussion groups are presented and validated in the plenary session. The final outcomes are briefly summarized by the facilitator before closing the meeting. It is recommended that two or three FGDs be organized, which will facilitate the selection of key challenges to be addressed at least twice, allowing for triangulation of workshop outcomes.

G. Composing the sector-assessment document

Based on the outcomes of the survey and FGDs, the team composes the sector-assessment document. Each challenge includes a description of the challenges and ambitions and details the actions proposed to achieve the ambitions. The dashboard, indicating from which specific survey questions the challenges stem, is shared in the sector-assessment document.

H. Validating the sector-assessment document In some cases, additional expert consultation is organized, in which key decision-makers or stakeholders are invited to validate ambitions and associated actions and arrive at a consolidated position to recognize and assume responsibilities for driving actions. The outcomes of the verification meeting are used to finalize the document.

I. Sharing the sector-assessment document

The sector-assessment document is published and used for awareness-raising and advocacy efforts and is widely shared in relevant traditional and social media. Leading organizations conduct follow-up activities and meetings with high-level officials and wider stakeholders using digital platforms to raise

awareness of the challenges and to urge government bodies and others to take immediate action. These include briefings to ministries of agriculture and national platform meetings and press conferences.

J. Using the document for action

The sector-assessment forms a locally grounded, stakeholder-owned input document that can drive the transformation of the sector and structure interventions and investment in the sector by development organizations, financial organizations, and their partners.

Assessment of the vegetable sector in Ogun and Oyo states

- Olbam Consult was hired to conduct the survey and organize the FGDs; the HortiNigeria team supported the implementation through various steps.

- During the design phase of the previous sector assessment of Kano and Kaduna states, WUR developed a questionnaire consisting of 46 questions with input from local teams. This set of questions was expanded with support from IFDC and Olbam Consult. For each question, relevant

stakeholders were identified. Table 2 provides the list of questions.

At least five representatives of each stakeholder group were contacted in both regions. Respondents were asked to rate each of the questions as very poor, poor, average, good, very good, or not applicable or specify whether a question was not relevant to them or if they were not able to provide an answer. Their answers were entered directly into an online survey tool, which compiled the answers from all the interviewees.

Overall, 481 surveys were conducted in the two regions of Ogun (238) and Oyo (243). Details of the respondents by region can be found in Table 1.

Table 1. Survey respondents

Stakeholders identified	Ogun	Oyo	Total
Smallholder farmers	24	23	47
Commercial/entrepreneurial farmers	26	26	52
Producer organizations	7	14	21
Labourers/Farm staff	18	22	40
Extension officers/Government agency	23	22	55
Transporters	21	21	42
Processors (inc. value addition)	20	20	40
Traders (inc. wholesale, retailers & union)	21	21	42
Service providers (inc. input suppliers)	16	20	36
Government (Policy makers)	28	12	40
Financial institutions	4	4	4
Research & educational institutes	16	24	40
Development programmes & NGOs	14	18	32
Total	238	247	481

¹The final results show 247 respondents for Oyo since the survey results from the Financial Institutions stakeholder group in Ogun were also used for the Oyo analysis.

Table 2. List of questions integrated in the survey.

Sector activity & driver	Performance rating
Production	<ol style="list-style-type: none"> 1. How do you rate the appropriate and efficient use of hybrid seeds for vegetable production? 2. How do you rate the appropriate and efficient use of fertilizer for vegetable production? 3. How do you rate the appropriate and efficient use of fertilizer for vegetable production? 4. How do you rate farmers' understanding of the costs vs. benefits to invest in inputs? 5. How do you rate farmers' understanding of the costs vs. benefits to invest in improved practices (e.g. IPM, drip irrigation, seedling trays, (in)soluble fertilizer)? 6. How do you rate farmers' capacity to invest in inputs? 7. How do you rate farmers' capacity to invest in and adopt improved/innovative practices? 8. How do you rate the effect of rising prices (e.g. due to exchange rates) on production? 9. How do you rate the management or reduction of post-harvest losses at farm level (e.g. sorting, grading)? 10. How do you rate the linkage of farmers to various buyers and markets? 11. How do you rate the availability of labour for vegetable production (e.g., weeding, fertilizer application, harvesting)? 12. How do you rate farmers' capacities to perform crop protection practices?
Environmental drivers	<ol style="list-style-type: none"> 13. How do you rate the water management practices at farm level (e.g., rain water harvesting, drip irrigation, sub-surface drip irrigation, Doba irrigation)? 14. How do you rate the competition between vegetable production and other farming systems (e.g. cereals or livestock)? 15. How do you rate the known effects of climate change (e.g. higher temperatures, floods, droughts) on current vegetable production?
Socio-economic drivers	<ol style="list-style-type: none"> 16. How do you rate youth participation in vegetable production? (e.g. young people growing vegetables) 17. How do you rate youth participation in supporting services along the vegetable value chains? 18. How do you rate awareness on the nutritional value of vegetables? 19. How do you rate the participation of women in vegetable production? 20. How do you rate the participation of women in value addition (e.g. processing, packaging) and markets within the sector?
Stakeholder organization	<ol style="list-style-type: none"> 21. How do you rate the performance of producer organizations? (i.e. services provided to members) Note: select N/A if not a member of a producer organization.
Value chain development	<ol style="list-style-type: none"> 22. How do you rate the effect of rising prices (e.g. due to exchange rates) on post-harvest activities? 23. How do you rate farmers' ability to find alternative/higher-end markets for their (higher-quality) produce? 24. How do you rate the post-harvest practices throughout the vegetable value chain to maintain product quality? 25. How do you rate the availability of transportation of vegetables (e.g., roads, vehicles) from farm gate to local markets?

Sector activity & driver

Performance rating

Value chain development

26. How do you rate the quality of transportation of vegetables (e.g., roads, vehicles) from farm gate to local markets?
27. How do you rate the current level (performance) of the processing industry vis-a-vis existing demand for processed vegetables products?
28. How do you rate farmers' influence in the sector compared to other stakeholders (e.g. traders, wholesalers)?
29. How do you rate the adoption of innovations throughout the vegetable value chain (e.g. e-payment, crates, solar-powered cooler/dryer, digital marketing)?

Service provision

30. How do you rate the ability of agrodealers to advise on good crop management practices for vegetables (e.g. appropriate variety selection, use of adequate chemicals at the right time)
31. How do you rate the relationship and trust between agrodealers and farmers?
32. How do you rate the quality of government extension services on vegetable production?
33. How do you rate the quality of private extension services on vegetable production?
34. How do you rate the access to financial services by sector stakeholders (other than farmers)?
35. How do you rate the availability of labour along the vegetable value chains (for activities other than production, e.g. processing, packaging, wholesale)?
36. How do you rate the access to information services (weather, price or market information)?

Consumption

37. How do you rate the consumption of vegetables at household level?
38. How do you rate the real demand* for good quality and safe vegetables? (*a demand backed up by the willingness to pay)

Coordination

39. How do you rate the collaboration between stakeholders in the value chains? (e.g. supply & demands, trade, logistics)
40. How do you rate the existence of a joint sector vision (e.g. initiated by the government or private sector)?

Regulation

41. How do you rate the existing rules and regulations at the level of vegetable production including agrodealers (e.g. laws, standards, taxation)?
42. How do you rate the existing rules and regulations at the level of post-harvest (e.g. laws, standards, taxation)?

Investment

43. How do you rate the level of investment in the sector (e.g. investment in irrigation schemes/expansion of vegetable production/value addition)?
44. How do you rate the ability to invest and grow a business within the sector?
45. How do you rate the level of existing storage facilities that allow actors to invest and grow their business?
46. How do you rate the level of other facilities that allows actors to invest and grow their business (e.g. roads, internet access, power, water source)?

Assessment of the Vegetable Sector in Ogun State

Photo: Pokyes Richard Sati

Topic 1

Low profits and welfare losses occur along the value chain

Topic 2

Low quality of government extension services on vegetable production

Topic 3

Lack of access to financial services by sector stakeholders

Topic 4

Inadequate policies to facilitate horticultural production

Topic 5

Insufficient investment in horticultural technology has resulted in inadequate facilities and infrastructure in the sector

Topic 1

Low profits and welfare losses occur along the value chain

Challenges

- Rising prices have shrunk margins and led to welfare losses for many actors along the value chain.
- Inadequate technical know-how on vegetable production leads to low yields. The majority of horticulture graduates have little to no practical experience.
- Inadequate finance and investment in horticultural production prevents investment.
- A shortage of laborers exists. If they are available, they can charge high fees, be unskilled, or provide unstable services.

Ambitions and strategic actions

- It is essential to ensure that land allocation is accessible to farmers who are willing and engaged in agricultural practices.
- Due to the existence of a large and diverse market, producers can take the opportunity to engage in various crops of their choice, depending on their financial strength.
- Production clusters that champion changes can be formed. One area that should be considered is aggregating resources toward ensuring off-taking at prices that far exceed production prices. This will help provide an alternative to selling to off-takers who come from Lagos (Ketu and Mile 2) to buy the produce at unencouraging prices. A cluster selling point with about 20 members, e.g., Tomato Grower Association, could be located closer to farmers' locations.
- A greenhouse production system should be encouraged for the producers who can afford it.
- The welfare of laborers is very important. Arrangement of contractual agreements for their services should be considered.

Topic 2

Low quality of government extension services on vegetable production

Challenges

- Extension services have typically been provided by the private sector. These are employed by non-governmental organizations (NGOs) and a few producer organizations to reach the farmers.
- Generally poor extension service is prevalent in the state, especially in the area of vegetable production and horticulture farming.

Ambitions and strategic actions

- The state government should recruit more extension agents to improve the ratio of farmers to extension agents.
- The recruited extension agents should be well-paid, motivated, and mobilized. This will help them in reaching out to the farmers adequately.
- Private extension agents should be supported by the government and other agencies to improve their performance.
- Subject matter specialists on horticultural crops (i.e., horticulture graduates) should be trained on improved and new technologies.
- Development organizations and programs (such as HortiNigeria) should strive to work more with the state Ministry of Agriculture.

Topic 3

Lack of access to financial services by sector stakeholders

Challenges

- Access to financial services, such as loans, has been limited due to the high-risk nature of agriculture, particularly horticulture.
- Government legislation cannot force financial services to give money to the farmers for free; they are not philanthropic entities.

Ambitions and strategic actions

- Encouraging the formation and registration of cooperative associations among the value chain actors can facilitate access to finance.
- Providing farmers with education in the area of finance is crucial. In some instances, funding may be available, but farmers lack the necessary knowledge to initiate the loan/funding process.



Photo: Pokyes Richard Sati

Topic 4

Inadequate policies to facilitate horticultural production

Challenges

- Over the years, there has been a lack of clear and comprehensive policies on horticultural production. Existing policies have been biased and overinfluenced by political factors.
- Until recently, the government's attention has predominantly been focused on the production of grain, cereals, tubers, and other agricultural commodities, rather than horticulture. This has led to the sector being excluded from major policy initiatives.
- A disparity have been observed in government focus and support, with other regions of the country receiving more attention to horticulture compared to the southwest region.
- Some herbicides (e.g., Paraquat) that have been banned are smuggled into the country and used in production. This might have a residual effect on the health of the farmers, workers, and consumers.

Ambitions and strategic actions

- Far-reaching consultations should be held with academia, research institutions, and practitioners to bridge relevant gaps.
- Policies should address the inappropriate use of crop protection products and stimulate farmers' education on the subject.

Topic 5

Insufficient investment in horticultural technology has resulted in inadequate facilities and infrastructure in the sector

Challenges

- The absence of investment in improved horticultural technology limits the potential for increased vegetable production.
- Some agricultural technologies are capital-intensive and are thus unaffordable for individual farmers.

Ambitions and strategic actions

- Increased investment in agriculture should be prioritized, focusing on areas such as infrastructure, capacity building, and farm demonstrations.
- The focus must be shifted from government support to encouraging and facilitating private sector investment to drive technological advancements in agriculture.
- Passion and commitment should be promoted among all sector actors to increase agricultural production, irrespective of government support.



Photo: Pokyes Richard Sati

Assessment of the Vegetable Sector in Oyo State



Photo: Rokyes Richard Sati

Topic 1

Little availability of labor for vegetable production

Topic 2

Low quality of government extension services on vegetable production

Topic 3

Lack of access to financial services by sector stakeholders

Topic 4

Processing industry is unable to meet the demand for vegetable processing

Topic 5

Low adoption of innovations throughout the vegetable value chain

Topic 1

Little availability of labor for vegetable production

Challenges

- Frequent labor scarcity leads to loss of produce at harvest and inefficiency in production.
- When available, labor (unskilled) and production practices show room for improvement. For example, untimely bed/land preparation has been observed.
- Ultimately, the scarcity of labor contributes to business instability (untimely production and delivery), even in packaging.
- During key times, for example, the rainy season, a lack of labor causes production losses.
- Vegetable production is often considered less attractive than other businesses, such as trading or transportation. If given the opportunity, laborers may leave agriculture in favor of such alternatives.

Ambitions and strategic actions

- Clear terms and conditions must be defined during the contract signing process, e.g., requiring workers to commit to a minimum period of employment, such as six months, to be eligible for incentives.
- The presence of guarantors during the contract agreement will provide an added level of security and commitment from both the laborer and the employer.
- A culture of shared responsibility among workers should be promoted when multiple tasks are involved.
- Incentives should be given to workers who meet or exceed predetermined criteria.
- Strict penalties should be enforced for offenders who violate work policies and necessary changes in work policy must be implemented.
- Training opportunities for laborers will enhance their interpersonal skills and farm management abilities.
- The formation of laborer associations that advocate for the rights and welfare of the laborers should be encouraged.

Topic 2

Low quality of government extension services on vegetable production

Challenges

- Poor extension services lead to inadequate information on farm management practices among farmers.
- Low awareness of innovations or technologies and the current price of inputs among the extension workers hampers the development of good production practices.
- Extension workers have been found to have little knowledge of government policies.
- There is a lack of continuity in government policies and programs. These programs end after a period of time and are not evaluated or followed up.
- Inadequate evaluation of past projects handled or anchored by extension service hampers improvement.
- Improper promotion and/or uptake of innovations or programs through the proper authorities and channels.

Ambitions and strategic actions

- Extension agents should be placed in every village or close to farm settings.
- Extension agents should be scheduled to visit farmers' plots at key times.
- More extension agents should be recruited to improve the current farmer-to-extension agent ratio.
- Funding sources should be diversified to reduce dependence on state government funds.
- The private sector should be encouraged to play an active role in transferring information to farmers.
- Remuneration for extension agents should be improved.



Photo: Pokye's Richard Sati

Topic 3

Lack of access to financial services by sector stakeholders

Challenges

- Poor access to finance can be very discouraging for both small-scale and large-scale farmers.
- Not only is the lack of access to financial services problematic, but so is the sum that can be provided, which is often small.
- Credit facilities (loans or grants) are rarely available in time for agricultural production.
- The eligibility criteria for farmers to access credit remain unclear and untransparent, making it possible for only well-connected individuals outside of agriculture to access available finance instead of farmers.
- Loans and/or grants are often delayed unnecessarily due to administrative bottlenecks. This delay discourages farmers because, in most cases, the farming season will have already passed.
- Poor feasibility studies conducted by the applicant, coupled with a limited farm record, leads to the denial of funds.
- Untimely fund transfers from the government to the finance sector present challenges.

Ambitions and strategic actions

- Successes in agribusiness should be showcased to attract grants or loans. In other words, the success story of an entrepreneur will attract investors to the business.
- Creditworthiness should be encouraged since it is important in accessing financial services. Investors like to fund agribusinesses with a sustainable quality of value or merit that can increase investment returns.
- Creating a culture of integrity in the sector will serve as a pathway for developing business partnerships. If an entrepreneur has integrity and maintains it, the individual can easily access loans, grants, or partnerships.
- Involvement in agricultural cooperatives will provide access to loans with little interest.

Topic 4

Processing industry is unable to meet the demand for vegetable processing

Challenges

- Inadequate funding hampers the ability to purchase the needed equipment.
- Similarly, a scarcity of labor and irregular power supply also hold the industry back.
- The processing industry continues to underperform, despite the high population and demand for processed products. Processor numbers are low in Oyo State compared to other states.
- There are restrictions on certification by local and international regulatory bodies.
- Securing raw materials for industries is often tenuous. There are few off-takers in Oyo State, and smallholder farmers often sell to a variety of buyers.
- Processing facilities often feature outdated and faulty storage facilities for fresh produce.
- The high cost of production in Oyo State compared to other states increases the costs of sourcing.

Ambitions and strategic actions

- Youth should be encouraged to venture into vegetable processing, focusing on the attractive aspects of the business.
- Purchasing good machinery can help alleviate the shortage of manual labor.
- The number of irrigation schemes should be increased so that vegetable produce is available throughout the year.
- Improvement in the power supply will boost vegetable processing efficiency.

Topic 5

Low adoption of innovations throughout the vegetable value chain

Challenges

- Low adoption of inputs, such as improved seed and agrochemicals, leads to low yields, limited revenue, and suboptimal profit.
- Some innovations remain under-adopted due to high costs, e.g., improved seeds.
- Farmers have little awareness of the need to use high-quality seed from reliable sources.
- The use of low-quality seeds leaves tomato production susceptible to disease outbreaks (tomato wilt), causing smaller-sized tomatoes and quicker spoilage at storage.
- Low irrigation limits production during the dry season.
- There is little registration of the stakeholders that are active along the value chain, which makes it difficult to identify and target them to promote the uptake of innovations.
- Information on innovations is not easily accessible.
- Some innovations lack adaptability to different contexts.

Ambitions and strategic actions

- Feedback from farmers who have adopted innovations successfully should be sought, so that remaining barriers are addressed.
- Innovations need to be promoted with clear business plans/models.
- Inclusiveness in the adoption of technology (especially during farmer's field days) should be ensured. Farmers should not be solely responsible for setting up irrigation systems/facilities. This should involve collective action by farmers and the government in the same farm setting.
- Farmer organizations should be facilitated in acquiring innovations such as irrigation systems, which can be effective if the farmlands are close to each other (as has been done in the northern part of the country).
- Investment in water-related infrastructure (e.g., dams, boreholes) must be facilitated.
- The role and funding of research institutes needs to be reinforced to enhance innovation transfer.
- Innovations must be monitored and evaluated for the betterment of the sector in the longer term.
- A culture that embraces innovations in the sector should be fostered.
- International, national, and private NGOs must work toward adequate monitoring of funds when dealing with innovations.
- Collaboration among all vegetable stakeholders must be enhanced for innovation development and uptake in Oyo State.



Photo: Pokyes Richard Sati

Dashboard

Assessment of the drivers and activities of the vegetable sector in Ogun and Oyo states Outcomes of a survey conducted in May 2023

Survey questions were rooted in [the integrated food system and sector framework](#), which also provides the structure of this dashboard.

Color coding

■ Severe negative impact
 ■ Moderate negative impact
 ■ Slight negative impact
 ■ No impact, business as usual

Socio-economic drivers											
	Total	Ogun	Oyo		Total	Ogun	Oyo		Total	Ogun	Oyo
Youth participation in vegetable production				Awareness on the nutritional value of vegetables				Participation of women in value addition and markets within the sector			
Youth participation in supporting services along the vegetable value chains				Participation of women in vegetable production							
Regulation			Coordination			Investment					
Existing rules and regulations at the level of vegetable production including agrodealers				Collaboration between stakeholders in the value chains				Level of investment in the sector			
Existing rules and regulations at the level of post-harvest				Existence of a joint sector vision				Ability to invest and grow a business within the sector			
								Level of existing storage facilities that allow actors to invest and grow their business			
								Level of other facilities that allows actors to invest and grow their business			
Stakeholder organization											
Performance of producer organizations (i.e. services provided to members) Note: select N/A if not a member of a producer organization											
Service provision											
Ability of agrodealers to advise on good crop management practices for vegetables				Access to financial services by sector stakeholders (other than farmers) Availability of labour along the vegetable value chains (for activities other than production, e.g. processing, packaging, wholesale)				Access to information services (weather, price or market information)			
Relationship and trust between agrodealers and farmers											
Quality of government extension services on vegetable production											
Quality of private extension services on vegetable production											
Production											
Appropriate and efficient use of hybrid seeds for vegetable production				Farmers' capacity to invest in and adopt improved/innovative practices							
Appropriate and efficient use of fertilizer for vegetable production				Effect of rising prices (e.g. due to exchange rates) on production							
Appropriate and efficient use of inputs (other than seeds and fertilizer) for vegetable production				Management or reduction of post-harvest losses at farm level (e.g. sorting, grading)							
Farmers' understanding of the costs vs. benefits to invest in inputs				Linkage of farmers to various buyers and markets							
Farmers' understanding of the costs vs. benefits to invest in improved practices (e.g. IPM, drip irrigation, seedling trays, (in)soluble fertilizer)				Availability of labour for vegetable production (e.g., weeding, fertilizer application, harvesting)							
Farmers' capacity to invest in inputs				Farmers' capacities to perform crop protection practices							
Value chain development											
Effect of rising prices (e.g. due to exchange rates) on post-harvest activities				Quality of transportation of vegetables (e.g., roads, vehicles) from farm gate to local markets							
Farmers' ability to find alternative/higher-end markets for their (higher-quality) produce				Current level (performance) of the processing industry vis-a-vis existing demand for processed vegetables products							
Post-harvest practices throughout the vegetable value chain to maintain product quality				Farmers' influence in the sector compared to other stakeholders (e.g. traders, wholesalers)							
Availability of transportation of vegetables (e.g., roads, vehicles) from farm gate to local markets				Adoption of innovations throughout the vegetable value chain (e.g. e-payment, crates, solar-powered cooler/dryer, digital marketing)							
Consumption											
Consumption of vegetables at household level				Real demand* for good quality and safe vegetables (*a demand backed up by the willingness to pay)							
Environmental drivers											
Water management practices at farm level				Competition between vegetable production and other farming systems				Known effects of climate change on current vegetable production			



Photo: Pokyes Richard Sati

Colophon

This Assessment of the Vegetable Sector in Oyo and Ogun States in Nigeria is part of a series of assessments in multiple (sub)sectors and countries and is a Sector Transformation publication of Wageningen Centre for Development Innovation.

Please cite as: HortiNigeria. 2023. *Assessment of the Vegetable Sector in Oyo and Ogun States in Nigeria*. WUR, Wageningen, 21 July 2023.

Responsible HortiNigeria team: Hermine ten Hove (WUR), Yeray Saavedra Gonzalez (WUR), Olabisi Ilebani (IFDC), Abdullahi Umar (IFDC), and Benedict Ukpukpen (IFDC).

Responsible Olbam Consult team: Ifeyinwa Umeokeke and James Fasakin.

Copy editor: Julie Kohler (IFDC).

Design: RCO.design (brief template) and symsign (dashboard).

Input from Johann Bonnand, Flo Dirks, Salome Boyd, and Walter de Boef (WUR); Ruth Ardzard Saleh, Godfrey Alechenu David, and Stuart Morris (EWS-KT); and Anitra van der Kraan (Netherlands-African Business Council [NABC]).

The responsible teams thank the sector stakeholders who contributed to the sector assessment by completing the survey or by participating in the focus group discussions.

For more information

Wageningen Centre for Development Innovation
info.cdi@wur.nl | www.wur.eu/wcdi

WUR focal point: Hermine ten Hove
Email: hermine.tenhove@wur.nl

HortiNigeria focal point: Olabisi Ilebani
Email: oilebani@ifdc.org

Olbam Consult focal point: Ifeyinwa Umeokeke
Email: consultolbam@gmail.com