



Rapid assessment of the horticulture sector in Nigeria

Introduction and methodology

(Photo: EWS-KT Nigeria)

Introduction

The horticultural sector is rapidly developing in Nigeria with major implications for the livelihoods of small-scale farmers (including women and youth), entrepreneurs, businesses in the various sub-sectors, market players, as well as rural and urban consumers. The sector has been identified as a critical component of the collaboration between the Embassy of the Kingdom of the Netherlands (EKN) and the Federal Ministry of Agriculture and Rural Development of the Government of Nigeria. As a result of this commitment, several investments have been made in the horticulture and vegetable seed sector. These include:

- Seeds for Change (S4C) project in Kano, implemented by Netherlands African Business Council and six Dutch companies.
- Transforming Nigeria's Vegetable Markets project in Kaduna, part of the Sustainable Development Goal Partnership Facility, implemented by East-West Seed Knowledge Transfer (EWS-KT), in collaboration with Wageningen University & Research (WUR) and several other partners.
- Collaborative Seed Programme (CSP), part of the Nigeria-Netherlands Seed Partnership, coordinated by WUR and implemented in collaboration with Sahel Consulting, the National Agricultural Seeds Council, and partners in both Nigeria and the Netherlands. CSP, which is currently in its start-up phase, addresses vegetable seed systems and has a broader focus on the entire seed sector.

Rationale and purpose

The leading organizations involved in these three organizations (EWS-KT, NABC and WUR) realize that their individual actions in horticulture need to be embedded in a larger framework to strengthen the sector, not only in the production areas and markets where they operate, but also for sector governance and the creation of an enabling environment.

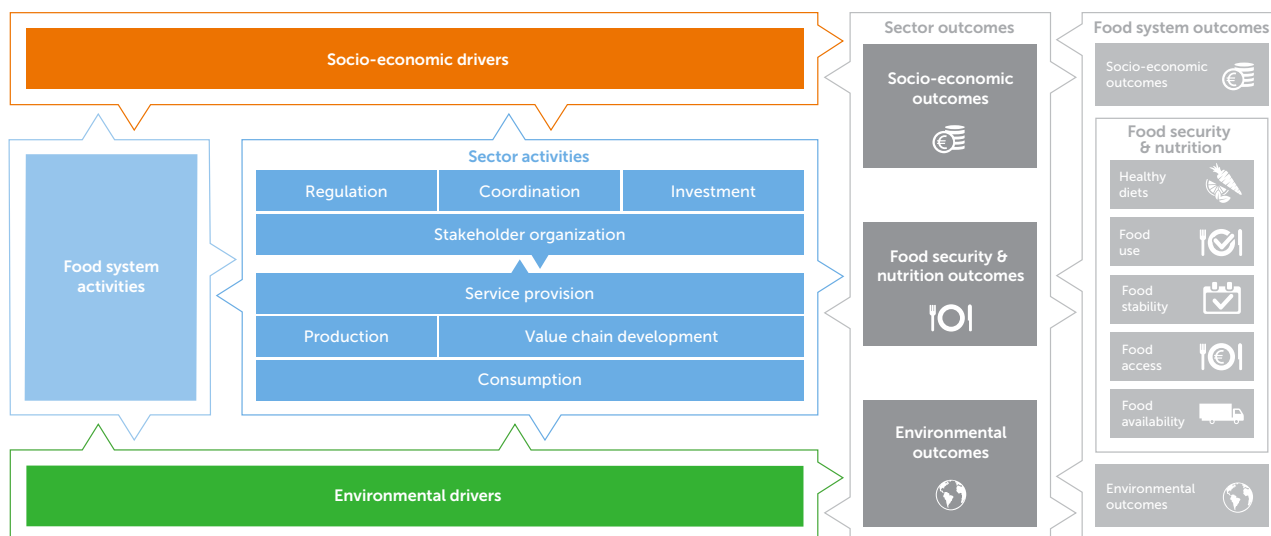
In this regard, conducting a rapid assessment of the horticulture sector is believed to be the first stepping stone in this joint action process. The purpose is therefore to gain a better understanding of the challenges; engage with partners in transforming these challenges into ambitions that contribute to sector transformation; reinforce their relationships with relevant stakeholders; inform local, regional, and national stakeholders in this process of strategic development; and ultimately embed their actions in a larger transformation strategy for the horticulture sector.

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; the development policies of the Government of the Netherlands, for example, are aimed at sustainable solutions for the food and agricultural sectors (Van Berkum et al., 2018¹). Sector transformation is a subset of the food systems approach that focuses on one particular agri-food sector within the larger food system. Sector transformation takes into consideration the production and market base, their relationships with services, finance and regulations, but also governance and coordination. The sector framework has closely linked to the food system framework with its food security and nutrition, socio-economic and environmental outcomes. Figure 1 shows how agri-food sectors can be integrated in the food system framework.

¹ Van Berkum, S., J. Dengerink, R. Ruben, 2018. *The food systems approach: sustainable solutions for a sufficient supply of healthy food*. WEcR, the Hague, <https://doi.org/10.18174/451505> (2018).

Figure 1. Integrated sector and food system framework, Source: Borman et al., 2021²



Rapid assessments

Since May 2020, WUR, in collaboration with partners across Africa, has been conducting rapid assessments that provide valuable insights into how the COVID-19 pandemic and the associated social and economic crises are affecting the functioning of various agri-food sectors in sub-Saharan Africa. In some sectors, assessments were conducted in a series of 2-3 iterations, to monitor how the crisis impacted seasonal sector dynamics, and how effective, in some cases, the mitigating actions were. The rapid assessment documents produced by WUR and partners inform decision-makers at country level in government, industry, research, civil society and farmers' organizations, on where the impacts of COVID-19 are most severely felt in specific agri-food sectors, and subsequently identify and prioritize the immediate actions required to cope with the challenges identified. The rapid assessments result in concise, actionable documents referred to as 'Alerts' (e.g., Ethiopia sesame alert, Rwanda horticulture alert). In most cases, these documents are taken up for decision-making and guidance at senior government levels, but they also inform and guide public and private stakeholders on collective action. The series of rapid assessments can be accessed through this [link](#).

Rapid assessments have been conducted in several countries where WUR works together with partners on processes of sector transformation. Where appropriate, the sector transformation programmes in which WUR collaborates assume responsibility for informing decision-makers; where relevant and appropriate, the programmes initiate and support action.

Methodology and steps for conducting the rapid assessments

A. Defining boundaries and institutional settings

For each horticultural production area, the leading partner, in collaboration with WUR, defines the most appropriate institutional setting for conducting the rapid 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, 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 rapid sector assessment, in terms of crops, markets and geographical coverage. It requires therefore the involvement of WUR and partner organizations, including the leading organization. It sets the scene, and unless this step is completed the rapid sector assessment cannot start. 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 rapid 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.

²Borman, 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., Guijt, 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* [submitted].

- 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 if a question is not applicable, or if they are unaware of the impact.
- The survey should comprise around 30 questions in total, of which no more than 25 questions should be selected for each stakeholder group. Due to their involvement in different sector activities, panellists are given questions that are tailored to each stakeholder group.

C. Establishing a panel of experts

A panel of 40 to 80 experts, or respondents, is established. The panel comprises relevant stakeholders representing government, from various departments and levels of administration; producers and producer organizations, such as cooperatives and unions; farmers' organizations; 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 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. Running the survey

Participants receive information on the rapid 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 either on a smartphone or on a different 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. Completion of the survey takes a maximum of 15 minutes. The survey is managed online by WUR, which also provides the leading organization with the link. The team can monitor the number of participants as well as each participant's response in real time. The survey is open for a limited period - from 48 to 96 hours.

E. Analysing 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 concerned 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 for 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 with many respondents indicating 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 FGD brings together six to eight experts, who are selected from the panel of experts based on their key 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 favour of the interests of individual stakeholders or stakeholder groups within the sector. The FGDs are organized virtually or in a hybrid

setup (where in-person and virtual participation is supported). The meetings are usually organized in 60-90-minute virtual meetings through Zoom, facilitated by one or two members of the regional consultants' 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 rapid 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 stakeholders responsible for taking the initiative and driving actions to achieve the ambitions. For each ambition, the participants define their time horizon (short-, medium- or long-term). To structure this, FGD participants are split up into smaller discussion groups, making use of the break-out facilities of the digital meeting platform. Parallel break-out sessions comprise 3-4 participants representing different stakeholders. Each discussion group delves deep into one or two key challenges/ambitions and discusses 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 are organized, which will facilitate the selection of key challenges to be addressed at least twice, allowing for triangulation of workshop outcomes.

G. Composing the rapid sector-assessment document

Based on the outcomes of the survey and FGDs, the team composes the rapid 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 rapid sector-assessment document. Copy-editing of the English text ensures quality in information sharing locally and nationally. The document is well designed, and pictures support the messaging.

H. Validating the rapid sector-assessment document

In some cases, an 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 among stakeholders to recognize and assume responsibilities driving actions. The outcomes of the verification meeting are used to finalize the document.

I. Sharing the rapid sector-assessment document

The rapid 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 follow-up activities and meetings with high-level officials and wider stakeholders using digital platforms, to raise awareness on the challenges, and to urge government bodies and others to take immediate actions. These include briefings to ministries of agriculture and the organization of national platform meetings and press conferences.

J. Using the document in the development of a horticulture sector road map

The rapid sector-assessment documents form a locally grounded and stakeholder-owned input to the development of a horticulture sector road map that can drive the transformation of the sector and structure interventions and investment in the sector by development organizations, financial organizations, and their partners.

Rapid assessment of the horticulture sector in Kano and Kaduna states

- EWS-KT and NABC assumed responsibility to conduct the survey and organize the FGDs in Kaduna and Kano states respectively; WUR supported the implementation through various steps.
- During the design phase, WUR developed a questionnaire consisting of a set of 37 questions with inputs from the local teams. For each question, only relevant stakeholders were identified. Table 1 provides the list of questions.
- Local teams contacted the stakeholders identified. At least five representatives of each stakeholder group were contacted in both regions. Due to the COVID 19 pandemic, the survey was conducted using phone interviews. Respondents were asked to rate each of the questions as 'very poor', 'poor', 'average', 'good', 'very good'; or 'not applicable', if 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 surveys of all the interviewees. Overall, 111 surveys were conducted between the two regions of Kano and Kaduna. Details of the respondents per region can be found in Table 2.

Table 1. List of questions integrated in the survey.

Sector activity & driver	Level of impact of current circumstances on:
Production	<ol style="list-style-type: none"> 1. How do you rate the appropriate and efficient use of inputs for vegetable production? i.e., adequate seed rate for hybrid seeds vs open-pollinated varieties (OPVs)? 2. How do you rate farmers' understanding of the costs vs. benefits of investing in inputs and/or improved practices? 3. How do you rate farmers' capacity to invest in inputs and/or improved practices? 4. How do you rate the management or reduction of post-harvest losses at farm level (e.g., sorting, grading)? 5. How do you rate the linkage of farmers to various buyers and markets? 6. How do you rate the availability of labour for vegetable production (e.g., harvesting)? 7. How do you rate farmers' capacities to perform crop protection practices?
Value chain development	<ol style="list-style-type: none"> 8. How do you rate water management practices at farm level? 9. How do you rate the competition between vegetable production and other farming systems (i.e., cereals or livestock)? 10. How do you rate the known effects of climate change (i.e., higher temperatures, erratic rainfall patterns) on current vegetable production? 11. How do you rate youth engagement in vegetable production (i.e., young people increasingly growing vegetables)? 12. How do you rate youth engagement in supporting services along the vegetable value chains?
Services	<ol style="list-style-type: none"> 13. How do you rate water management practices at farm level? 14. How do you rate the competition between vegetable production and other farming systems (i.e., cereals or livestock)? 15. How do you rate the known effects of climate change (i.e., higher temperatures, erratic rainfall patterns) on current vegetable production? 16. How do you rate youth engagement in vegetable production (i.e., young people increasingly growing vegetables)? 17. How do you rate youth engagement in supporting services along the vegetable value chains? 18. How do you rate the awareness on the nutritional value of vegetables? 19. How do you rate the participation of women in vegetable production?
Stakeholder organization	<ol style="list-style-type: none"> 20. How do you rate the participation of women in value addition and markets within the sector?
Consumption	<ol style="list-style-type: none"> 21. How do you rate the performance of producer organizations (i.e., services provided to members)? 22. How do you rate farmers' ability to find alternative/higher-end markets for their (higher-quality) produce?
Coordination	<ol style="list-style-type: none"> 23. How do you rate the post-harvest practices throughout the vegetable value chain to maintain product quality? 24. How do you rate the quality of transportation of vegetables from farm gate to local markets?

Sector activity & driver	Level of impact of current circumstances on:
Regulation	25. How do you rate the quality of private extension services on vegetable production? 26. How do you rate the access to financial services by sector stakeholders (other than farmers)?
Investment	27. How do you rate the availability of labour along the vegetable value chains (for activities other than production)? 28. How do you rate the access to information services (weather, price, or market information)? 29. How do you rate the consumption of vegetables at household level?
Socio-economic drivers	30. How do you rate the existing rules and regulations at the level of vegetable production, including agro-dealers? 31. How do you rate the existing rules and regulations at the level of post-production (i.e., wholesale/processing)? 32. How do you rate the level of investment in the sector (i.e., investment in irrigation schemes/ expansion of vegetable production/value addition)? 33. How do you rate the ability to maximize margins within the sector? 34. How do you rate the level of existing infrastructure that allows stakeholders to maximize their operations/practices (i.e., roads, internet access, storage facilities, power)?
Environmental drivers	35. How do you rate the real demand* for good quality and safe vegetables (*a demand backed up by the willingness to pay)? 36. How do you rate the collaboration between stakeholders in the value chains (i.e., supply and demand, trade, logistics)? 37. How do you rate the existence of a joint sector vision (initiated by either the government or private sector)?

Table 2. Survey respondents

Stakeholders identified	Kaduna	Kano	Total
Commercial farmers	4	7	11
Development	3	5	8
Extension officers	0	4	4
Financial institutions	2	3	5
Government	2	4	6
Labourers	4	4	8
Processors	10	3	13
Producer organizations	7	5	12
Research	1	5	6
Service providers	3	4	7
Smallholder farmers	1	5	6
Traders	10	6	16
Transporters	5	4	9
Total	52	59	111

The WUR team compiled a dashboard based on the outcomes of the survey, where responses to the questions were structured according to sector activities and drivers within the sector framework. Eight areas were identified and found to be major challenges:

- A. Management or reduction of post-harvest losses at farm and value-chain level, including the quality of transportation.
- B. Linkage of farmers to various markets, including processing.
- C. Quality of public and private extension services and agro-dealer advisory services.
- D. Access to financial services for various stakeholders all along the value chain.
- E. Collaboration between stakeholders, including the joint sector vision.
- F. Effects of climate change on vegetable production in Nigeria.
- G. Youth and gender engagement in the vegetable sector, both in production and the value chain.
- H. Awareness on nutrition.

Various limitations were identified by the local teams, who ran the survey through phone interviews. The translation of the questions into the local language, Hausa, may have led to mistakes while enumerating the questions. Not all enumerators had the agricultural background to accurately translate the questions for the respondents. The questionnaire was found to be long when conducted by phone; respondents' interest decreased over time, leading to less precise

answers. Some questions were difficult to rate by the respondents who were not used to this type of survey.

The FGDs focused on more precisely identifying the challenges and the potential actions that could be taken to address these challenges. In the FGDs, a discrepancy was observed in the answers of the respondents of the phone survey and contributions by the attendants during the FGD. The local partners documented the outcomes of the FGDs, which they shared with the WUR team. The WUR team subsequently produced a dashboard based on the FGD outcomes to the survey, which was used in developing the rapid assessment briefs for each state.

Partnership and collaboration

The rapid assessment is developed by Wageningen Centre for Development Innovation (WCDI), part of Wageningen University & Research (WUR), in partnership with East-West Seed Knowledge Transfer (EWS-KT) and Netherlands African Business Council (NABC). EWS-KT has linked the activities to the project 'Transforming Nigeria's Vegetable Markets', part of the Sustainable Development Goal Partnership Facility (SDGP), financed by the Government of the Netherlands through the Netherlands Enterprise Agency (RVO). The NABC further supported the implementation of the rapid assessment in association with its Seeds for Change project, financed by the Embassy of the Kingdom of the Netherlands.

The rapid assessment is published within a series of rapid assessments in multiple (sub)sectors and countries, and is part of WCDI Sector Transformation publications.

Please cite as: *WUR, EWS-KT and NABC, 2021. Rapid assessment of the horticulture sector in Kano and Kaduna states, Nigeria: introduction and methodology brief.* Wageningen University and Research, Wageningen, 17 June 2021.

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