

Horti Nigeria

BUILDING A SUSTAINABLE & INCLUSIVE
HORTICULTURE SECTOR



ANNUAL REPORT

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HORTINIGERIA PROGRAM

PRESENTED TO:
EMBASSY OF THE KINGDOM OF THE NETHERLANDS IN NIGERIA





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Abbreviations and Acronyms

2SCALE	Towards Sustainable Clusters in Agri-business through Learning in Entrepreneurship
ABC	Agri-Business Cluster
ABU	Ahmadu Bello University
ADP	Agricultural Development Program Bank
B2B	Business to Business
BAGS	Boosting Agricultural Gains and Services
BC	Business Champions
EKN	Embassy of the Kingdom of the Netherlands
EWT-KT	East West Seed- Knowledge Transfer
FCMB	First City Monument Bank
FMARD	Federal Ministry of Agriculture and Rural Development
GAP	Good Agronomic Practices
ICRA	International Center for Development Oriented Research in Agriculture
IFDC	International Fertilizer Development Center
KIT	KIT Royal Tropical Institute
NABC	Netherlands-African Business Council
NABG	Nigeria Agri Business Group
NAPTAN	National Tomato Growers Processors and Marketers Association of Nigeria
NIHORT	National Horticultural Research Institute
OFSPAN	Organic Fertilizer Producers and Suppliers Association of Nigeria
TFO	Technical Field Officer
TJ	TomatoJos
WUR	Wageningen University & Research

Executive Summary

Igniting Transformation in the Nigerian Horticultural Sector

This first annual report of the HortiNigeria program reflects on the progress made in the period of November 2021 through December 2022, as well as some of the challenges that were encountered along the way and how they were addressed. Over the course of the four-year program, HortiNigeria aims to facilitate the development of a sustainable and inclusive horticulture sector that contributes to food and nutrition security in Nigeria. The program builds on four components, targeting a broad range of functions and actors in the horticulture sector.

The first component aims to increase productivity and income among smallholder farmers in Kano and Kaduna states. To contribute to this, in the first year of the program, 12,174 farmers (1,626 males, 1,098 females and 9,450 youth) and 30 agro-dealers (14 males, 1 female, 15 youth) have been trained on eco-efficient practices within HortiNigeria agribusiness clusters (ABCs). Trained smallholder farmers were exposed to digital solutions: how to access good agricultural practice (GAP) info on Grow How, radio broadcast programs, Ignitia weather forecasting services, and how to join the farmers' Facebook and WhatsApp vegetable production groups for information sharing. Training agro-input dealers on such practices has expanded their businesses, enabling them to provide private extension services to 3,895 smallholder farmers. Difficulties encountered under this component include security threats and natural calamities. This report describes the measures taken to address these.

The second component of the program sets out to pilot production system innovation and regional diversification with entrepreneurial farmers in Ogun and Oyo states. In the first year of

the program, 20 innovations were identified, which will be scaled to 525 (35 males, 48 females, 442 youth) entrepreneurial farmers. Dialogues with stakeholders on piloting production innovations and identifying market opportunities have fostered networking and strengthened informal associations among young tech-savvy entrepreneurial farmers. Challenges encountered in implementing this component include high interest rates on credit, natural calamities, and farmer conflicts with pastoralists due to grazing on farmland. Proposed mitigation measures include collaboration with the Nigerian Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL), Nigerian Agricultural Insurance Corporation (NAIC), and meteorological services.

To increase access to finance for micro, small, and medium enterprises (MSMEs), which is the objective of the third program component, discussions and meetings with financial institutions have revealed opportunities to be explored with targeted actors in the horticultural space. The progress of this component has been impacted by staffing issues, which have now been resolved.

To enhance sector coordination and business-to-business (B2B) linkages under the program's fourth component, HortiNigeria brokered B2B linkages for over 2,000 actors. The focus on B2B linkages and partnerships gained momentum, as 69 B2B opportunities were identified in the input and output markets. To address policy environment concerns, HortiNigeria consulted with several stakeholders, bolstering connections among key players and inspiring public-private action on policies such as the new tomato policy of 2017 and 2021.

Overall, HortiNigeria’s targeted interventions have catalyzed sustainable results in crop production and productivity, increased income, market access, and better coordinating structures.

The infographic below shows key performance highlights realized during the reporting period:





1. Introduction

Program Overview

The HortiNigeria program (2021-2025), funded by the Embassy of the Kingdom of the Netherlands (EKN) in Nigeria, aims to facilitate the development of a sustainable and inclusive horticulture sector that contributes to food and nutrition security in Nigeria. Intervention locations are Kaduna, Kano, Ogun, and Oyo states. The program is implemented by the International Fertilizer Development Center (IFDC) and its consortium partners: East-West Seed Knowledge Transfer (EWS-KT), Wageningen University & Research (WUR), and KIT Royal Tropical Institute (KIT).

This annual progress report of the HortiNigeria program discusses the implementation approach, progress made, learnings gathered from program implementation, program coordination, and cross-cutting issues for the period November 2021-December 2022. In this timeframe, the program expanded its implementation from the four value chains of okra, onion, pepper, and tomato, as listed in the proposal submitted to the donor, to cabbage, cucumber, sweet corn, and watermelon. Additionally, toward the end of 2022, three Local Government Areas (LGAs) – Bichi, Ikara, and Tofa in Kaduna and Kano states – were added to the 12 existing LGAs of Kudan, Sabon Gari, Makarfi, Kabau, Soba, and Zaria in Kaduna and Dawakin Tofa, Dawakin Kudu, Garko, Kumbotso, Minjibir, and Rimin Gado in Kano.

Implementation was conducted through the program components:



Component 1: Increasing productivity and income of smallholder vegetable farmers in Kaduna and Kano states.



Component 2: Piloting production system innovation and regional diversification with entrepreneurial farmers in Ogun and Oyo states.



Component 3: Increasing access to finance for micro, small, and medium enterprises (MSMEs).



Component 4: Enhancing sector coordination and business-to-business (B2B) linkages.

1.2 Implementation Approach

Food and nutrition insecurity cannot be tackled by working on production or market systems alone. Instead, the challenges inherent to food systems need to be addressed using a sector transformation approach. Through this integrated approach, HortiNigeria has started to deal with interrelated challenges by drawing on actors, activities, and resources that boost productivity, increase income, improve access to finance, increase the inclusion of youths and women, improve the enabling environment, and bolster market access.

Subsequent sections of this report discuss the key activities and outputs, as well as sustainability and risk mitigation measures that HortiNigeria has carried out to nurture the transformation it envisions within the Nigerian horticulture sector and any program and cross-cutting issues that have been dealt with

2. Progress in Implementation: Activities and Achievements

This chapter discusses HortiNigeria's progress in igniting a transformation in the Nigerian horticulture sector from November 2021 to December 2022. It describes the activities and achievements implemented by component.

Component 1: Increasing Productivity and Income of Smallholder Farmers

Table 1 provides a brief overview of key activities, strategies employed, and results achieved at output level in Year 1, under Component 1. These key activities relate to Indicators 1.1, 1.2, and 1.3: number of smallholder farmers with increased productivity (1.1), number of smallholder farmers with increased income (1.2), and percentage of reduction in post-harvest losses (1.3). Generally, the productivity from demonstration plots reveals a large yield gap for most horticulture farmers in Kano and Kaduna. The demonstration plots show the potential for adopting good agricultural practices, and the gap between actual yields and potential yield (the yield gap) emphasises the relevance of the program. A detailed indicator and target table is attached in Annex 1.

	Key Activity	Strategy	Result
1.	Capacity building of farmers on eco-efficient practices	Training, field days, digital extension services	12,174 (M: 1,626; F: 1,098; Y:9,450) farmers trained
2.	Capacity building of agro-dealers	Training, field days, digital extension services	30 (M: 14; F: 1; Y:15) agro-dealers trained
3.	Strengthening agribusiness clusters	Meetings, coaching, market access	12 ABCs formed
4.	Capacity building of sector professionals	Social media (LinkedIn)	Identified sector professional

2.1.1 Capacity Building of Smallholder Vegetable Farmers

Catalyzing a viable horticultural sector starts with boosting the productivity of smallholder farmers, as they constitute 95% of the horticultural production system. However, the lack of technical know-how of modern agronomic practices by these smallholder farmers is a significant challenge. In addressing this, a series of sub-activities were implemented, including farmer sensitization and engagements, establishment of demonstration plots and farmer trainings, and deployment of radio and digital media, field days, and market surveys.



Farmer Sensitization and Engagements: The achievements in this process were primarily due to the existing structure of EWS-KT. The organization's savvy and young Technical Field Officers (TFOs) sensitized farming communities to gain the buy-in of farmers within intervention areas, and 19,428 (7,848 adult males; 5,302 adult females; 6,278 youth) smallholder farmers were sensitized.

Building on the sensitization activities, HortiNigeria identified and categorized interested farmers into three categories, as seen below.

Key Farmers: Key farmers are those who have signed an agreement with EWS-KT. They are provided with intensive field-based support for the first 12 months. Their fields serve as demonstration plots to show other farmers (average of 25) techniques that can improve crop quality and yields.

Core Farmers: Core farmers are those who have been identified but are not confirmed until the end of the crop cycle. This is because most farmers do not join program activities until the vegetative stage, when they can see the benefits of the eco-efficient practices being implemented. These farmers attend a minimum of three training modules.

Neighboring Farmers: Neighboring farmers join training sessions but are not consistent with their participation.

Figure 1: Definition of categories of smallholder farmers under the program



Establishment of Demonstration Plots and Learning Farms:

Farmer-owned demonstration plots (250 square meters) served as on-farm extension delivery channels and a hub of interaction and learning among farmers, TFOs, and sector professionals. A total of 379 demonstration plots were established, with 281 completed, 91 ongoing, and seven terminated due to poor commitment from farmers.

Additionally, a learning farm was established at Sa'adatu Rimi College of Education in Kano for training graduating youths and sector professionals, hosting several crops, and providing in-depth training in vegetable production. So far, 128 students, three interns, and six sector professionals have been trained. An international field day held at the site was attended by over 700 participants. Another 291 people visited the learning site.



Farmer Training: Training content and methodology were modified from the lessons learned from the Sustainable Development Goal Partnership (SDGP1) program to include topics such as climate-smart agriculture (CSA), good agricultural practices (GAPs), and farming as a business.

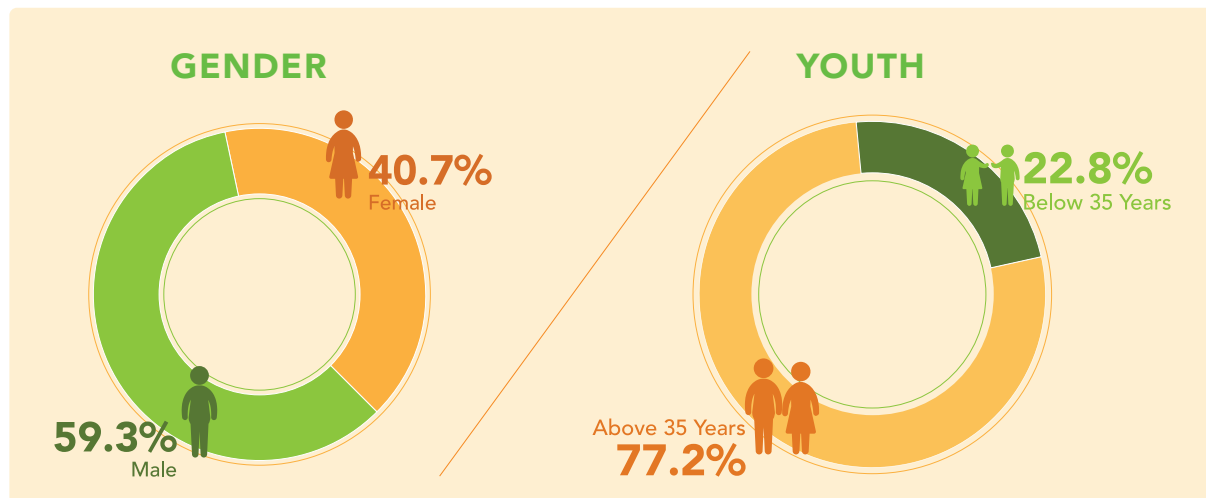
Training on business planning and record keeping were introduced to farmers before embarking on vegetable cultivation. Topics on CSA focused on productivity improvement practices, including soil and water management and making use of weather data. Mitigation practices involved techniques that reduce greenhouse gas emissions, such as smart fertilizer usage and good soil management. The combination of CSA and GAPs is referred to as eco-efficient practices.



Figure 2: women farmers on a cabbage demonstration plot in Kano State.


1 SDGP is a Dutch-funded program implemented in Kaduna and Kano states by EWS-KT.

Generally, the program exceeded its smallholder farmer training target by 20%, equipping 12,174 farmers with knowledge on agricultural practices. Of the farmers trained, 59.3% were men, 40.7% were women, and 77.2% were youth (under 35 years), as shown in 1.



Observations from the training report show that farmers tend to adopt practices that give quick returns in yields. Adoption² was done on a step-by-step basis in the first and second crop cycles. A quick impact survey and validation exercise conducted showed that mulching was one of the most used techniques among farmers. Other important practices adopted were line sowing, container seedling raising in shade nets, land preparation, proper spacing during transplanting, incorporation of organic manure, organic mulching, trellising, pruning, appropriate fertilizer application, safe use of pesticides, water management, and post-harvest handling.

At the end of the year, actual yields taken from demonstration plots revealed the potential yields and income farmers could obtain by harnessing the eco-efficient practices introduced to them. Table 2 provides yield and income obtained from the demonstration plots.



According to Naima

“I am Naima Abubakar, a 27-year-old mother of three from Gaida in Kano state. I was introduced to HortiNigeria through my husband, who is a core farmer. Though I am a baker, I became interested and ventured into vegetable farming because of all the exciting stories my husband shared with us when he attended field days. Replicating some of the techniques he learned, my field grew beautifully, attracting other farmers, particularly men, who encouraged their wives to come learn from me. At the end of the cropping cycle, I harvested more than 30 crates and sold the produce immediately, as buyers were interested in the quality.”

Naima, a farmer in Gaida, Kano state, who now teaches good agricultural practices

² Adoption happens when a farmer replicates and consistently applies at least one of the practices or technologies that HortiNigeria has introduced to them on their farms beyond the learning cropping cycle (a period of 6 months).

Table 2: Yields at Baseline and with Good Agricultural Practices at Demonstration Plots

Crop/Variety	No. of plants	Yield (Kg) per 250m	Cost(#)	Return(#)	Profit
Cabbage (Nuzaka F1)	659	983	17,600	44,683	27,083
Cabbage (Pkase)	666	1,166	16,941	38,670	21,729
Cucumber (Greengo F1)	666	1,135	23,249	53,026	29,777
Cucumber (Mona Lisa F1)	666	1,120	20,764	68,360	47,596
Okra (Basanti)	445	328	10,350	35,560	25,210
Okra (Maha)	443	442	11,635	44,171	32,536
Tomato (Diva F1)	666	644	16,200	91,350	75,151
Tomato (Platinum F1)	669	1,116	18,865	64,267	45,402
Watermelon (Sweet sangria F1)	179	780	11,392	56,856	45,464



Deployment of Radio and Digital Media:

Considering the proliferation of Android phones among smallholder farmers in Nigeria, an array of electronic and digital tools, including radio (Arewa FM93.1), social media (WhatsApp and Facebook), and podcasts, were deployed to complement on-farm extension delivery methods, such as field days and demonstration fields. These tools enabled the delivery of tailored extension advisory services on production processes and information on market prices.

Farmers received training to access online materials that provide information to support the theoretical and practical demonstration on vegetable crop production. Examples of such materials include the East-West Seed GrowHow page, TalentLMS-deployed courses implemented by WUR (for more information, see Section 2.1.4), and Funzi.

Furthermore, the pilot with Ignitia exposed farmers to

Farmers received simple and short digital weather-forecasting information via SMS, with GAP advisory information that corresponds to the prevailing weather conditions. Results from the pilot are expected in January 2023.



Field Days: HortiNigeria accelerated learning to over 5,000 primary and secondary farmers through various field days.



Demo field day: involved regular teaching of farmers on farmer-owned demonstration fields.

Mega field day: comprised of stakeholders cutting across public, traditional and private spheres.

Virtual field day: In April 2022, a virtual field day was held to showcase HortiNigeria fields to farmers in the diaspora. Participating countries included Bangladesh, Philippines, Tanzania, Thailand, and Uganda.



Market surveys: In addition to technical knowledge disseminated through demo field days, farmers receive information on market prices which TFOs derive from market surveys conducted on a weekly basis. The data is also shared with agro-dealers and used study price fluctuations as it affects farmers' demo Return on Investment (ROI). A total of 466 market surveys were conducted in 2022.

2.1.2 Capacity Building of Agro-Input Dealers

Agro-Input Dealer Training: As a sustainability measure, HortiNigeria strategically worked with agro-input dealers to reach smallholder farmers with extension advisory services. Throughout the reporting period, the program identified 84 agro-input dealers in the HortiNigeria ABCs and 30 (29 males, 1 female) received training on GAPs, bolstering their knowledge and capacity to reach farmers at the last mile. Training was carried out both online and in person. These agro-dealers



were issued certificates at their graduation and were then turned over to the agribusiness unit of Component 1 for further training on business management to form part of the ABCs. By the end of 2022, 3,895 farmers (3,571 males, 324 females) received extension advisory services from the agro-dealers. 54 of the agro-dealers will be trained in 2023.

2.1.3 Strengthening Agribusiness Clusters



Agri-Business Cluster: Throughout the reporting period, 12 ABCs were created, one within each of the 12 LGAs in Kaduna and Kano states. HortiNigeria activated ABC formation through the following steps:

- Mapped cluster by LGA
- Identified farmers who completed training by EWS-KT
- Facilitated group formation for farmers
- Map Producer Organisations (POs) to cluster
- Identify trained and graduated agro-input dealers by EWS-KT
- Facilitated agro-input dealers into groups
- Mapped Agro-input dealers to clusters
- Identified processors, transporters and other service providers and mapped based on proximity

A total of 1,669 actors (1,579 males, 98 females, and 720 youth) in the value chain (excluding farmers) were identified, and a database profiling them has been established. HortiNigeria employed the International Centre for development-oriented Research in Agriculture (ICRA) to identify and train coaches, building their capacity to empower value chain actors within local networks. Coaches sensitized and educated farmers and other actors on the importance of ABCs and facilitated structured relationships between farmers and other ABC actors. Figure 2 shows the relationship between the actors and coaches within an ABC.:



The coordinated relationships initiated within the ABCs have resulted in linkages, activating clusters that can serve high-value developing markets. So far, cluster activities have triggered and enhanced networking among actors, particularly between farmers and aggregators.



Danliti Wada, a member of Kumbotso cluster

"My name is Danliti Wada and I sell tomatoes and peppers. Thanks to HortiNigeria, I am now a member of Kumbotso agribusiness cluster in Kano.

Through the coaches who share information with me and others in my cluster, I have been connected to other marketers, processors and, more interestingly, farmers. This makes business easier and more efficient.

I have conducted business with people I have never seen. All the arrangements are made using my phone and the contacts provided to the cluster members by the coaches."

2.1.4 Capacity Building of Sector Professionals

This activity was coordinated through two of the program's consortium partners: East-West Seed Knowledge Transfer (EWS-KT) and Wageningen University & Research (WUR).

EWS-KT deployed a systematic peer-led demonstration approach focused on introducing farmers and agro-dealers to easily replicable and practicable eco-efficient techniques, while WUR channeled its efforts into building the capacity of sector professionals. Both partners also worked together on activities such as the action research on piloting the efficacy of organic fertilizers promoted by Organic Fertilizer Producers and Suppliers Association of Nigeria (OFPSAN). Through such action research, HortiNigeria intends to address some practical problems faced at farm level, promoting critical thinking that leads to resilient horticultural systems. To fast-track this activity, WUR spent effort in identifying relevant stakeholders (private companies, research centers, universities) that may be interested to work with the program. Once identified, an introductory session will be held with them in January 2023. Box 1 highlights the action research.



Lessons Learned

Table 3 provides the lessons learned under Component 1. The learnings highlight the prevalent external and internal dynamics and their consequences on program implementation.

Table 3. Lessons Learned under Component 1

	Learnings	Effect
1	Bottom-Up Programming	Commitment from key farmers to transfer knowledge on modern agricultural practices to other farmers.
2	Digital Media	Boosts knowledge-sharing beyond primary actors and targeted intervention areas.
3	Step-by-step adoption practices	Increase in farmer adoption is gradual for various reasons, including cost and time implications.
4	Russia-Ukraine-War	Scarcity of fertilizers, leading to increased cost of production.
5	Social and Cultural Barriers	Limits participation and engagement of women and youths.
6	Insecurity	Restricted mobility, leading to limited reach within the intervention areas.
7	Nutrition	Lack of specific nutrition-sensitive programs, leading to little or no impact on nutrition security among targeted actors.

2.2 Component 2: Piloting Production Innovation Systems and Regional Diversification with Entrepreneurial Farmers

Table 4 shows the key activities, strategies employed, and results achieved at output level in Year 1 under Component 2. These activities contribute to the achievement of Indicators 2.6, 2.7, and 2.8,

which relate to the identification, introduction, and piloting of production innovations, respectively. During the reporting period, HortiNigeria identified 20 innovations and 525 entrepreneurial farmers (26% of the target). A detailed indicator and target table can be found in Annex 1.

Table 4. Summary of HortiNigeria Component 2 Activities in Year 1

	Key Activity	Strategy	Result
1	Identification of Innovations	Bottom-up participatory process, scoping exercise	20 innovations
2	Establishing Partnerships for Innovation Scaling	Scoping exercise, diagnosis and design, and onboarding	14 business champions

2.2.1 Identification of Innovations

Unlocking the potential within the Nigerian horticulture sector requires harnessing production innovation systems. With innovations, farmers will achieve more with less. Under Indicator 2.6, HortiNigeria employed a bottom-up participatory approach to identify 20 innovations (as seen in Table 5). This was done with young entrepreneurs within the value chains in 17 LGAs of Oyo and Ogun states. Furthermore, IFDC and WUR grouped these innovations into three categories and developed innovation protocols to scale (an activity to be rolled out in 2023).

Table 5: Technology Innovations Identified by HortiNigeria

S/No	Technology Innovations
Production-based innovations (used at the farm level to increase productivity)	
1	Establishing Partnerships for Innovation Scaling
2	Drip irrigation
3	Seedling trays
4	Hybrid seeds
5	Soluble fertilizers
6	Insoluble fertilizer
7	Controlled cultivation
8	Open fields
9	Soil and water testing
10	Plastic mulching
Value chain-based innovation (used among value chain stakeholders e.g., input dealers, offtakers, middlemen, transporters, processors, marketers, distributors)	
11	E-payment
12	Scaling
13	Accredited marketing agents

14	Supply chain tracking
15	Crates
16	Jute bags
17	Solar-powered coolers
18	Cooling vans (transportation)
19	Solar dryers
Business supporting innovation (related to knowledge and digital marketing tools that will boost productivity and income)	
20	Digital Marketing

2.2.2 Establishing Partnerships for Innovation Scaling

Building on the Toward Sustainable Clusters in Agribusiness through Learning and Entrepreneurship (2SCALE) approach, HortiNigeria identified and engaged 14 business champions that will scale up identified innovations to entrepreneurial farmer startups. At full capacity, HortiNigeria anticipates that each business champion will scale innovation to about 150 entrepreneurial farmers, thereby boosting productivity and reducing dependency on supply to the Lagos market. The engagement involved three key processes: a scoping exercise, diagnosis and design (D&D), and onboarding.



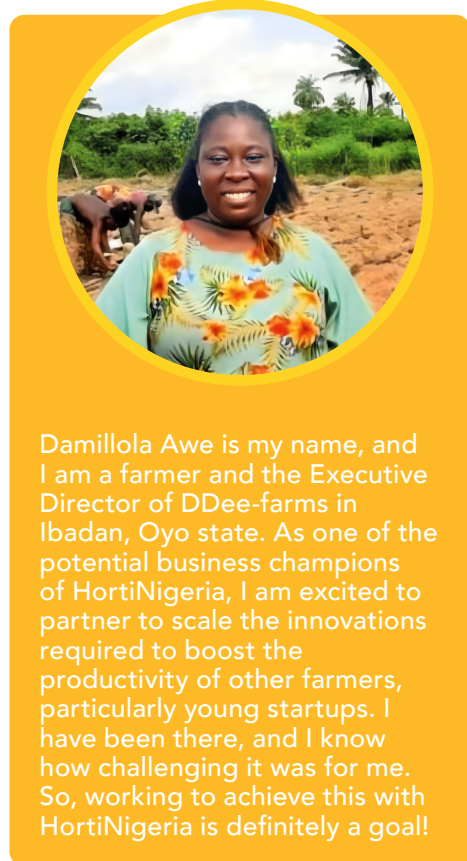
Scoping exercise: Through a scoping study implemented during the inception period in collaboration with the Nigerian Horticulture Research Institute (NIHORT) and Federal University of Agriculture, Abeokuta (FUNAAB), HortiNigeria identified 109 entrepreneurial farmers,³ from which business champions emerged.



Diagnosis and Design workshop: Following the scoping study, HortiNigeria conducted a D&D workshop to review the identified challenges and undertake a situational analysis of the sector. Discussions and working group sessions among stakeholders provided insight on the realities in the sector. Information from the D&D process was shared with WUR.



Onboarding: To finalize the integration of 14 business champions, two Innovation and Business Support Service (IBSS) providers, and other partners into the program, an onboarding process was implemented in Ogun and Oyo states. Stakeholders were familiarized with their roles and responsibilities within the program and the value chain through presentations and question-and-answer sessions. Partners came from various backgrounds, including farmers, agro-input dealers, aggre-



Damillola Awe is my name, and I am a farmer and the Executive Director of DDee-farms in Ibadan, Oyo state. As one of the potential business champions of HortiNigeria, I am excited to partner to scale the innovations required to boost the productivity of other farmers, particularly young startups. I have been there, and I know how challenging it was for me. So, working to achieve this with HortiNigeria is definitely a goal!

Figure 10: A story of change quote

gators, financial service providers, and formal retail stores. At the end of the event, participants networked and gained clarity on the benefits accruable from the program.



Figure 11: Innovation Mapping Process during a D&D in Oyo State

WUR proposed potential innovations to solve the identified constraints and conducted the risk assessments for the innovations. The IFDC and WUR teams worked together to map specific innovations to business champions. The mapping process was dependent on the type of the innovation and the action required with these innovations. Results from piloting the innovations would determine if they will be replicated under Component 1 in Kaduna and Kano states. In 2022, a business champion in Ogun state (Kartlos) was linked with Candela to pilot a test on the efficacy of soluble fertilizers. Innovation piloting and scaling will be a major focus of Component 2 in 2023.

Figure 3 shows the proposed innovation process to be championed.

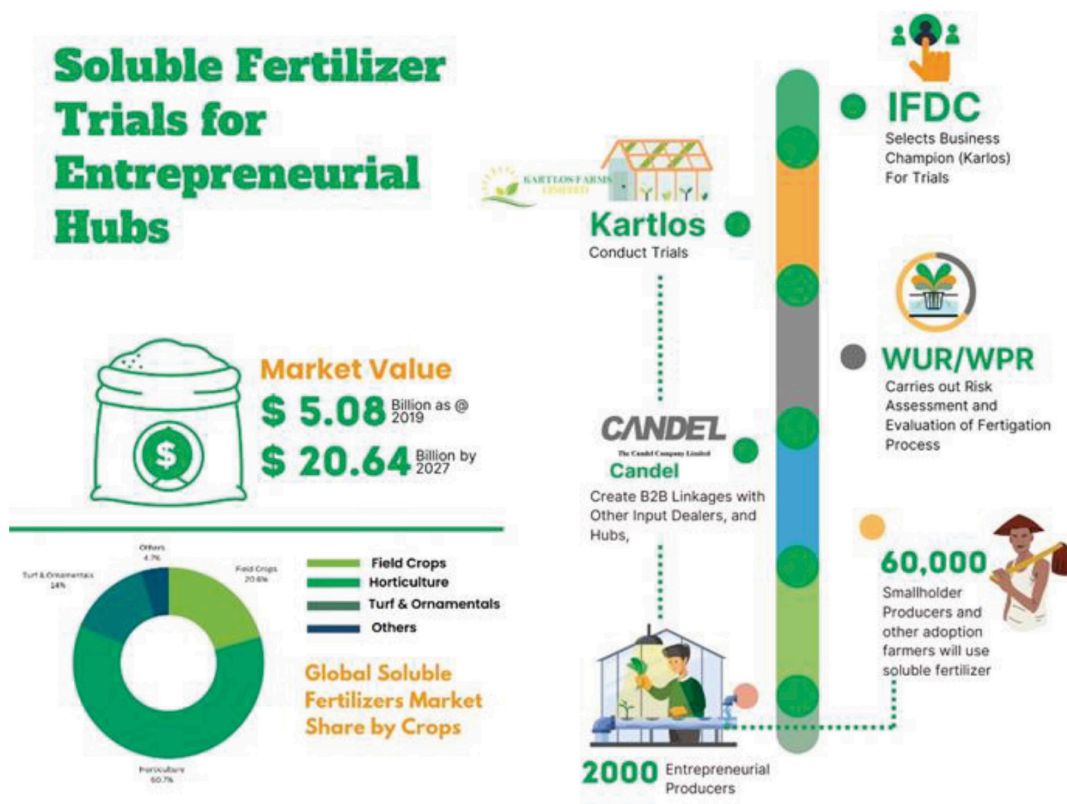


Figure 12: Process of Innovation Piloting

3 In the context of HortiNigeria, an entrepreneurial farmer is a farmer who invests at least \$1,200 (₦500,000) in vegetable crop production for the purpose of income generation. To consistently increase profit such farmer willingly learns and applies production system innovations, taking risks to scale his or her business.

4 Candel is an agrochemical manufacturing company based in Lagos, Nigeria.

At the end of 2022, 525 entrepreneurial farmers (370 in Ogun and 155 in Oyo) were identified and linked with business champions who have the technical capacity and the entrepreneurial skills to pilot market-driven horticultural innovations. Error! Reference source not found. shows the gender and age disaggregation of the entrepreneurial farmers in Oyo and Ogun states.

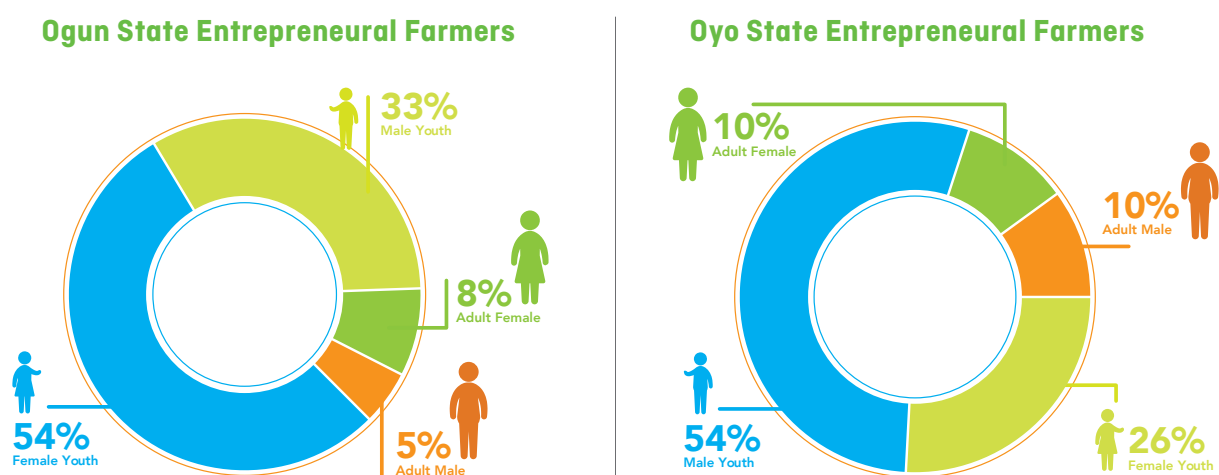


Figure 13: Disaggregation of Entrepreneurial Farmers in Ogun and Oyo States



Learnings

Table 6 provides the lessons learned under Component 2. The learnings highlight the prevalent external and internal dynamics and their consequences on program implementation.

Table 6. Lessons Learned under Component 2

	Learnings	Effect
1	Partnership with educational institutions	Increases reach and exposure of young farmers to production innovation.
2	Partnership with business champions	Fosters efficiency and sustainability through partners' contribution to program implementation.
3	Dysfunctional or non-existent associations	Slow kickoff in program implementation in Ogun and Oyo. Low optimization of existing innovation technologies. Initiated coordinating structures.
4	Lack of consistency in policy implementation	Change in business strategy, affecting economies of scale and discouraging business owners.
5	Social and Cultural Barriers	Female entrepreneurial farmers reported higher cost of production resulting from high labor cost.
6	Farm invasion by cows	Grazing of ready-to-harvest crops, resulting in loss of yields and income.
7	Nutrition	Lack of specific nutrition-sensitive programs, leading to little or no impact on nutrition security among targeted actors.

2.3 Component 3: Increasing Access to Finance for MSMEs

Table 7 lists the key activities, strategies employed, and results achieved at output level in Year 1 under Component 3. However, due to the departure of the Component Lead at the end of the inception phase (June 2022), progress under this component was limited. However, some achievements were made as other staff gave support to the implementation of component activities. A detailed indicator and target table is attached in Annex 1.

	Key Activity	Strategy	Result
1	Identification of Financial services / products	Literature reviews, meetings	13 financial institutions identified
2	Identification of MSMEs	Scoping study	86 MSMEs that operate within the program's four target states and Lagos state identified

2.3.1 Identification of Financial Services/Products

As reported during the inception phase, the program identified 13 financial institutions and products suitable for the program's interventions using literature reviews and meeting with financial institution representatives. Some of these financial institutions include:

1. Apex Regulatory Financial Institution: Central Bank of Nigeria
2. Deposit Money Banks: Wema, Taj, Sterling, Zenith, JAIZ, Polaris, Access, FCMB etc.
3. Development Finance Institutions: Bank of Agriculture, Bank of Industry, Development Bank of Nigeria, Bank of Industry, African Development Bank, Small and Medium Scale Enterprises Development Agency of Nigeria
4. Microfinance Banks: Lift Above Poverty Organization (LAPO), Halal Credit Microfinance Bank, Kuda Microfinance Bank, Yadilan Investment Limited
5. Management Consultancy Firms: IBY Consultants, Corporate Consultants, JMSF Agri-business Consulting, YHAL Consultants, Verde Consultants
6. Financial Services Advisory Brokers: PULA Insurance Advisors, JMSF, Verde

2.3.2 Identification of MSMEs

In August 2022, the program employed a scoping study⁵ to identify existing horticultural-related MSMEs and a needs assessment to further enable the program to map identified financial institutions and develop targeted financial solutions for the MSMEs. A total of 96 MSMEs, including farmers, agro-dealers, transporters, processors and marketers, were identified.

The study revealed that total demand for agricultural finance is estimated at ₦83 trillion (\$200 billion), with MSMEs requiring medium- to long-term finance for assets and overhead. Of the MSMEs, 70% perceived access to finance as difficult or very difficult. Farmers are currently largely self-funded (87%), complemented with informal funding (45%) from friends and family or community programs. Other MSMEs have slightly higher bankability than farmers, but most still lack or have limited access to finance. This underscores the need to increase access to suitable, sustainable, and inclusive financial products and services across the entire horticulture value chain.

A training of the identified MSMEs on financial management and business plan development will kick off in 2023. Box 2 shows the definitions of micro, small, and medium enterprises.

Box 2. Defining Micro, Small, and Medium

Enterprises Micro enterprise: Operated by a sole proprietor/manager, aided mainly by unpaid family workers; less than 10 staff with less than ₦5 million in assets, excluding building and land.

Small enterprise: Incorporated, solely owned businesses; 10-49 educated and technical skilled staff; assets worth of ₦5-50 million, excluding buildings and land; improved access to finance.

Medium enterprise: Formal face of Nigeria enterprises, with 50-199 staff; ₦50-500 million worth of assets, excluding buildings and land.

Figure 14: Definition of MSME



Learnings

Table 8 provides the lessons learned under Component 3. The learnings highlight the prevalent external and internal dynamics and their consequences on program implementation.

Table 8. Lessons Learned under Component 3

	Learnings	Effect
1	High level of illiteracy of farmers in the semi-urban and rural areas in Kaduna and Kano	Inability to access financial products and services.
2	Limited gender-sensitive financial products	Exclusion of women and youth from accessing financial services and products.
3	High riskiness and perishability of crops in sector	Unattractive investment portfolio for angel investors or crowdfunding managers.

2.4 Component 4: Enhancing Sector Coordination and Business- to-Business Linkages

Table 9 shows the key activities, strategies employed, and results achieved at output level in Year 1 under Component 1. These activities contributed to the achievement of Indicators 4.1, 4.2, 4.6, and

4.9: number of B2B opportunities identified (4.1), number of B2B partnerships brokered (4.2), number of policy constraints solved through successful lobby and advocacy (4.6), and number of trade fairs expanded with a horticultural focus (4.9). A detailed indicator and target table is attached in Annex 1, where the achievement levels per target are shown.

Table 9. Summary of Component 4 Activities in Year 1

	Key Activity	Strategy	Result
1	Enhancing sector coordination	Literature review, consultative review meetings with stakeholders	4 horticultural- related policies identified. Initiated a response mechanism forum, but it has not been inaugurated.
2	Facilitating business-to-business linkages and partnerships	Vegetable Sourcing Mission, field days, and informal matchings	More than 69 opportunities identified.
		Memorandum of Understanding	Two partnerships established: Tomato Jos and Candel.

This section discusses the main enabling environment bottlenecks identified by HortiNigeria and how the program has started addressing them, as well as the B2B linkages and partnerships identified and brokered during the reporting period.

2.4.1 Enhancing Sector Coordination

An enabling and conducive environment is required for the horticulture sector to experience transformation. Hence, one of this component's pillars is facilitating a policy environment that will stimulate transformation. In the reporting period, HortiNigeria held several discussions with various stakeholders to identify existing policies at both federal and state levels. Following consultations with the Federal Ministry of Agriculture and Rural Development (FMARD), donor-funded programs, and private sector businesses, four horticultural policies were identified, and the program started work on two horticultural policies. They included:

1. New tomato policy.
2. Restriction on allow the import of soluble fertilizer.
3. Facilitation for the bill on organic agriculture.
4. Policy to reduce road taxes.

The lack of consistency in implementing the new tomato policy has hampered the sector rather than expedited progress. The 2017 tomato policy was amended in 2019, and in 2022 the federal government further reduced the tariff to 10% from 30% for some companies. All these measures negate the backward integration that smallholder farmers hoped to enjoy. Therefore, to drive the policy in the right direction, HortiNigeria initiated a Memorandum of Understanding with Nigeria AgriBusiness Group (NABG) and the National Horticultural Research Institute (NIHORT). The partnerships committed to engaging both the private and public sectors to coordinate regulatory and policy reforms and work with the government to remove major constraints.

Additionally, HortiNigeria facilitated consultative meetings with stakeholders to reactivate an existing platform that will continue coordinating a national strategy for a response mechanism for pest and disease outbreaks, particularly *Tuta absoluta*. Stakeholders present included FMARD, NIHORT, NABG, Croplife, the National Tomato Growers Processors and Marketers Association of Nigeria (NAPTAN), and Agricultural Development Programs (ADPs) in Kaduna and Kano States.



Bulus Batchi, an officer of FDA.

"I am Bulus Batchi , a desk officer of the Horticulture Unit of Federal Department of Agriculture (FDA). It is great to have a program such as HortiNigeria working to strengthen platforms and mechanisms required to act accordingly during pest and disease outbreaks.

A lack of such a platform devastated smallholder farmers and the tomato value chain in 2016 due to the wide infestation of *Tuta absoluta*. We do not want to see a repeat of these negative effect and will be committed to working with HortiNigeria going forward."

Figure 15: A story of change quote

2.4.2 Business-to-Business Linkages and Partnerships

HortiNigeria facilitated several business-to-business activities (linkages⁶ and partnerships⁷), enabling linkages among actors across the value chain. One such activity was the vegetable sourcing mission in Kano and Kaduna states. The activity was implemented in collaboration with the Netherlands- African Business Council (NABC). During the events, 306 farmers and 40 agro-input dealers showcased and sold their products. Also, a matching session was organized, linking farmers and offtakers based on proximity and crops grown.

Beyond the linkages achieved through the sourcing events, 69 linkages were created, 25 linkages were facilitated, and eight partnerships were facilitated in the various agribusiness clusters of Kaduna and Kano states. IFDC and WUR designed a dashboard documenting the opportunities and linkages facilitated. Figure 5 shows the B2B linkages facilitated across the four states.

Two significant B2B partnerships were facilitated with Candel and Tomato Jos (TJ), contributing to Indicators 4.1 and 4.2. The partnership with Candel focuses on producing soluble fertilizers. A pilot will be led with Kartlos (one of the program's business champions in Ogun state) to meet the demand gap that was created from the ban on importation of soluble fertilizers in 2021.

Box 3. Snapshot of the HortiNigeria and Tomato Jos Partnership Model

Within the TJ Facility Model: The 750 ha TJ facility, located within the Igabi LGA cluster in Kaduna state, has worked with 2,000 smallholder farmers in Kaduna state since 2021. Employing an outgrower model, TJ has set up a supply chain, involving actors across the supply chain process that tackle access to finance, availability of inputs, quality, and sustainable supply to its facility. However, continuous capacity building of various actors, particularly smallholder farmers, in order for expected yields to be met strained the economies of scale, leading to a higher price for consumers. In this model, HortiNigeria partnered with TJ to build the capacity of smallholder farmer and other actors through capacity building, field monitoring, risk mitigation for input supply, market linkages, and support for innovations via a partnership agreement, with defined collaborative contributions on certain milestone targets.

Linking TJ with Farmers Outside their Facility Model: In this model, HortiNigeria took the lead in mobilizing and linking 500 smallholder farmer members of NAPTAN, spread across HortiNigeria's six ABCs (Kudan Sabon Gari, Makarfi, Zaria, Soba, and Kubau) in Kaduna state. Similarly, targeted farmers in this model will receive training on eco-efficient practices in tomato production from East-West Seed Knowledge Transfer (31 lead farmers trained to cascade training to other farmers), a full input package funded by FCMB through agro-input dealers such as Yusuf-Isa Agro Seeds, ABS Zugachi Nig Ltd, and Royal Blue, and logistical support to transport to the factory. Expected yields from farmers is 20–25 metric tons per hectare. HortiNigeria will also facilitate market linkages for the offtake of packaged tomato paste (linked TJ to Barakat store in Kano for sale of tomato paste packets).

Figure 17: Tomato Jos partnership model

The partnership with TJ has kicked off, employing an outgrower model that will create a “win-win” for the various actors in the value chain, particularly smallholder farmers who are often challenged with unavailable input and output markets. Ad hoc agreements were replaced by coordinated commercial relationships, thereby professionalizing the supply process from farm to market. Two models were rolled out under the Tomato Jos partnership, as discussed in Box 3.



Learnings

Table 10 provides the lessons learned under Component 4. The learnings highlight the prevalent external and internal dynamics and their consequences on program implementation.

Table 10. Lessons Learned under Component 4

	Learnings	Effect
1	Communication gap among actors in the value chain	Failed negotiations and transactions because of farmers lack of knowledge/understanding of offtakers requirements.
2	Inadequate guaranteed markets for crops other than tomatoes	More market saturation experienced by tomato farmers because of limited number of processing plants, which are guaranteed markets. Price fluctuations, leading to farmers' loss of revenue and inability to make accurate financial plans and projections.

<p>3 Lack of trust among stakeholders in the sector</p>	<p>Weak coordination and commitment from public stakeholders to drive conducive policy environment.</p> <p>Achieving conducive policy environment is dependent on the willingness and commitment from public sector.</p> <p>Much time is needed to see effective change occur.</p>
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3 Sustainability and Risk Mitigation Measures

Chapter 3 discusses the measures established to foster sustainability and mitigate risk within the program.

3.1 Sustainability

A common challenge for programs and projects is strategizing about the sustainability of activities beyond the life span of the intervention. Bearing this in mind, sustainability measures were embedded in the program design of HortiNigeria. However, design without implementation means nothing. To this end, the program intentionally leverages existing structures and partnerships with public and private sector actors so that their enhanced knowledge and skills bring about more impact in the sector. A discussion of the sustainability measures follows.

1. **Agro-Dealers:** Understanding the poor state of public extension delivery services, HortiNigeria identified and trained agro-dealers within its ABCs on GAPs and business management. The training enhanced their technical know-how and improved their capacity to provide extension delivery to farmers. With the improvement of their capabilities in private extension, agro-input dealers intend to translate this service into a paid service delivery to their client base.
2. **Digital Media:** Farmers were trained on how to access information on modern practices online. This will enable sustainability as farmers will always have access to the EWS-KT GrowHow website beyond the program's life cycle.
3. **Sector Professional:** Building the capacity of sector professionals exposes them to modern agricultural practices that will be integrated into their day-to-day tasks and activities, inciting change within the sector.
4. **Business Champions:** Building on the 2SCALE approach, the program partnered with business champions who will scale innovations in Ogun and Oyo states. This approach enabled the program to play its role as facilitator, supporting private sector businesses to own and engineer change during the program and beyond.
5. **Private and Public Partnership strengthening:** HortiNigeria strengthens existing structures within the private and public sectors, with the intention of improving partnerships that will propel transformation within the sector, particularly in policy advocacy and implementation.
6. **Youth Engagement:** Understanding that the future of agriculture is in the hands of the young people actively engaging in the sector, HortiNigeria deliberately identified and engaged with youths across all nodes of the value chain. So far, more than 75% of the program actors are young people.
7. **Involvement of Women:** With the high participation of women in vegetable production, it is necessary to boost their capacity, invariably increasing their income and boosting food and nutrition security.

3.2 Risks and Mitigation Measures

The existing insecurity in the country, particularly in Kaduna state, is a great risk in implementation, and this is compounded by the upcoming 2023 elections. During the program inception phase (November 2021-June 2022), insecurity inhibited access to certain LGAs within the intervention states, which limited implementation of program activities. However, toward the end of the year, a reduction in kidnappings was observed, leading to the addition of three LGAs to the existing 12 LGAs in Kaduna and Kano.

With the upcoming elections, HortiNigeria foresees slow program implementation, as many government institutions will be in transition, stalling decisionmaking and policy implementation. It will take time for public operations to return to normal, which will impact program implementation and results. So, it is expected that the program will require an extended period to deliver best results.

Annex II provides more information on risk and mitigation measures.



4 Program Coordination and Cross Cutting Issues

Chapter 4 discusses program management, outreach, gender and youth, and monitoring and evaluation conducted during the reporting period.

4.1 Staffing

Some staffing changes occurred in 2022. Mrs. **Ruth Saleh Ardzard** who was originally designated to lead Component 1 was replaced with Mr. **David Godfrey Alechenu**; Adzard still provides support (50% of her time). Additionally, Mr. **Abdullahi Umar**, who was designated as the Agribusiness Coordinator to support Component 1, was reassigned to lead Component 4, while Mr. **Danjuma Makama** was recruited for the Agribusiness Coordinator position. Mr. **Olabisi Ilebani** was hired to fill the Component 2 Lead position. Additionally, two staff were hired to promote youth and gender activities across the program intervention states: Mrs. **OluBukola Funsho-Sanni**, Youth and Gender Specialist, and **Benedict Ukpukpen**, Inclusive Entrepreneurial Assistant. A Monitoring and Evaluation Officer, Ms. **Mary Omolola Onalapo**, was added to the Monitoring, Evaluation, and Learning Team. Finally, recruitment of a Financial Inclusion Expert was completed at the end of 2022 to fill the vacancy created by the resignation of Ummi Shehu; the incoming staff member will assume the role on January 3, 2023.

4.2 Outreach

Communication

HortiNigeria has developed an active communication strategy, which served as a guide in the implementation of communication activities. In addition to containing a clear branding guide, the strategy supports the showcase of program activities and raises awareness among other important actors in the sector and society. HortiNigeria has established its presence in both traditional and social media space. Communication efforts spanned from logo design to outreach implementation, as discussed below.



Branding

1. **Social media:** Two social media platforms (Facebook and Instagram) were created in February 2022. A LinkedIn platform was created after the inception phase to strategically position the program among other donor-funded programs and institutions. These social handles are:

Facebook: <https://web.facebook.com/HortiNigeria>

Instagram: www.instagram.com/hortinigeria_program.

LinkedIn: <https://www.linkedin.com/company/hortinigeria-program/>

HortiNigeria also leverages existing social media platforms of consortium partners, such as EWSKT Facebook page https://web.facebook.com/groups/ktnigeria/?_rdc=1&_rdr

2. **Website:** HortiNigeria program activities are being hosted on IFDC's existing website. Logos of the consortium partners are placed on the program's page: <https://ifdc.org/projects/hortinigeria / Campaigns and Events>



Campaigns

HortiNigeria conducted two social media campaigns to drive youth inclusion and climate-smart actions within the horticulture sector. The campaigns were major awareness-raising activities on the subject matter.

A Youth in the Horticultural Sector competition was organized with Solokad Multiventures (a business champion) to mark the 2022 International Youth Day. Young entrepreneurial farmers in Ogun and Oyo states sent in videos sharing a profile of their farming experience. Winners of the competition received climate-smart inputs from Solokad. Apart from the inputs, the farmers participated in a workshop on smart farming conducted by the business champion, educating them on good agronomic practices.

A campaign to celebrate International Climate Change Day was also conducted. This campaign raised the awareness of various stakeholders, who made pledges of how they can personally contribute to reducing the impact of climate change in the society. Videos of the pledges were posted on the program's social media platforms.



Events



1. Program Launch

The HortiNigeria program was launched in March 2022 at the Transcorp Hilton in Abuja, Nigeria. The launch was used to increase the awareness of stakeholders about the program and to provide a forum for networking and sharing of ideas. The program was a hybrid event (physical and virtual) that hosted a total of 436 participants, with 232 online participants (Facebook and Zoom) and 204 physical participants. See the publicity report at <https://ifdc.org/wp-content/uploads/2022/09/HortiNigeria-Program-Launch-Publicity-Report.pdf>.



2. Exhibition, Round Tables, and Workshops

HortiNigeria participated in four horticultural technical and business-related events, where program and partner information, products, and services were showcased to a broad range of foreign and local stakeholders within the sector. These events facilitated networking between partners and stakeholders and enabled engagements with sector professionals on marketing, food safety, food systems, clean energy, and access to finance. Stakeholders at the events ranged from private and the public sector, youth, women, financial service providers, and research institutions.



3. Exchange Visits and Learnings

These were used as learning tools for consortium team members. International exchange visits occurred between the Netherlands and Nigeria teams, while local exchange visits occurred between the northern states (Kaduna and Kano) and the southern states (Ogun

and Oyo). The visits fostered learning, sharing of ideas, identification of new approaches/techniques, better relationships, and networking.



Youth and Gender Dynamics

In August 2022, HortiNigeria recruited a Youth and Gender Specialist to support the program to achieve its target of 40% women and 50% youth participation. Following the recruitment, youth and gender empowerment indicators to measure women's and young producers' empowerment were identified. Some of the positive signs of change observed involved:

1. Training of HortiNigeria staff on gender mainstreaming: The training improved staff ability to identify barriers and apply a gender lens during design and implementation.
2. Conducting community consultations with actors within the various intervention states: This helped identify the needs of women and youth at the community level. Tools such as focus group discussions revealed discriminatory practices that affected the quality of action for women and youths.
3. Providing specific gender and youth recommendations to ensure inclusion at component level: Results from community consultations helped influence programming and implementation at component level.

Overall, these efforts contributed to improved inclusion within the program.

Annex 1. Program Indicators and Achievements

Indicator Description	Unit of Measurement	Life-of-Program Target	Year 1 Targets	Year 1 Cumulative Achievements	% of Year 1 target Reached	Remarks
Component 1						
Number of smallholder farmers (SHFs) trained on increasing productivity	Persons	37,200	10,000	12,174	121.7%	Exceeded the target because the team was on the ground and started training at the commencement of the program in November 2021.
Number of smallholder farmers (SHFs) benefiting from improved services and inputs of agro-input dealers	Persons	22,800	7,500	3,895	51.9%	The agro-dealer training was just completed in the last quarter of 2022.
Number of smallholder farmers (SHFs) whose incomes have increased	Persons	≥60,000	15,000	10,348	69.0%	Adoption started in Mid-2022 and it is progressing steadily.
Percentage of reduction in post-harvest losses	%	60%	60%	31.2%	52.0%	The post-harvest losses were reduced due to the farmer training and the B2B linkages carried out by Component 4.
Number of hectares (ha) of farms under sustainable land use	Ha	≥15,000	4,000	367.4	9.2%	Sustainable land use depends on the rate of adoption, which has just started taking off.
Number of smallholder farmers with increased access to input/output markets	Persons	≥15,000	4,000	4,711	117.8%	Farmers have started adopting the production techniques.
Number of agro-dealers trained and delivering improved services to farmers	Persons	40	15	30	200.0%	
Number of Spray Service Providers (SSPs) delivering improved services to farmers: youth/women	Persons	600	200	0	0%	The SSPs are just about to come on board.
Key farmers	Persons	1,200	300	337	112.3%	

Core farmers	Persons	12,000	3,000	8,964	298.8%	
Neighboring farmers	Persons	24,000	6,000	2,873	47.9%	Neighboring farmers increase with time, as more people become aware of the production training, and adoption then takes place.
Annual increase of sales by agro-dealers (the year 2021 compared with 2022)	\$		\$300,000	\$196,586	65.5%	Agro-dealer training started in June 2022.
Number of digital extension service delivery promoted	Number			6		These include the use of podcasts, online learning, Ignitia weather forecast services, Instagram, Facebook, and radio.
Component 2						
Number of farmers adopting new knowledge and/or technologies piloted	Persons	≥2,000	200	0	0%	No technology was piloted, as we spent the first year identifying the innovations and building partnerships, adopting the 2SCALE model.
Number of direct jobs supported under Component 2 (number of jobs created off- farm)	Persons	≥500	100	0	0%	No jobs created yet, as entrepreneurial hub activities resume fully in 2023.
Number of entrepreneurial farmers who have access to the Lagos market	Persons	≥2,000	200	216	108.0%	A group of 216 members was successfully linked to one of HortiNigeria business champions for direct offtake.
Number of innovations identified	innovations	≥15	≥15	20	133.3%	Carrying out scoping on the sector in the southwest, 20 innovations were identified through a bottom-up participatory approach.
Number of innovations introduced	Innovations	≥15	≥15	0	0	
Number of innovations piloted	Innovations	≥15	≥15	0	0%	Relevant partners were identified for full piloting in 2023.
Number of entrepreneurial farmers identified	Persons	600	600	525	87.5%	Farmers' mobilization is still ongoing within the hubs.

Number of entrepreneurial farmers identified (women)	Persons	240	240	48	20.0%	The majority of female entrepreneurial farmers are youth; women are mainly in other sections in the value chain.
Number of entrepreneurial farmers identified (youth)	Persons	300	300	442	147.3%	Youth are being encouraged by other youth in the sector to participate.
Number of horticultural innovations shows organized	Horticultural innovations shows	2	1	1	100.0%	
Number of data systems piloted for three different types or actors	Data system	3	1	0	0	Entrepreneurial hubs have just been formed.
Amount of additional finance mobilized	\$	\$1,000,000		₦ 36,371,300 (\$78,915.36)		With full implementation of activities, more of this will be achieved.
Number of hubs/ ABCs formed	Hubs	20	10	14	140.0%	The process of forming the hub using the 2SCALE approach is time-consuming.

Component 3

Scoping leads to 50+ MSMEs identified for capacity building	MSMEs	50	50	86	130.0%	For the four intervention states (Kaduna, Kano, Ogun, and Oyo), 65 SMEs were identified. In Lagos alone, 21 SMEs were identified. Note: The figures are still tentative. Actual figures will be confirmed after the scoping validation.
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Component 4

Number of B2B opportunities identified	B2B opportunities	200	50	69	138.0%	The program leveraged existing platforms and reached out to different partners, especially during the sourcing events.
Number of B2B linkages forms	B2B linkages	100	25	25	100.0%	Some linkages are currently at different stages of concluding the linkages.
Number of B2B partnerships brokered	B2B partnerships	100	25	8	32.0%	Some other partnerships are currently at different stages of being brokered.
Number of major federal or state horticultural policies or regulations that have been improved						None has been improved, as it is the year building up to the elections for a change in government. However, the policy advocacy meeting was just held with key stakeholders and the program will intensify efforts to secure one improved change in the next year.

Number of policy constraints solved through successful lobby and advocacy	Policy constraints	4	2	0 (4 policy constraints have been identified)		Four policy constraints have been identified. The program is leveraging existing business partnerships for positive influencing and lobbying to ensure delivery.
Number of sector strategy for control of Tuta absoluta developed	sector strategies	4	2	1	50.0%	Only 50% achieved, as it is the first active year, and the program will surely leverage the current achievement to fast-track more practical field demos and commercial opportunities that will address issues on Tuta absoluta.
Number of knowledge-sharing events organized by AFGEAN and NABC	Events	8	2	1	50.0%	Only 2 seasons were run for vegetable production in a year; thus, the program will arrange multiple knowledge-sharing events to ensure targets are met.
Number of trade fairs expanded with Horticultural focus	Trade fairs	8	8	0	0%	Trade fairs are usually carried out early in the year, especially in Kaduna, and late in Kano. The program will commence early preparation to achieve these targets in 2023.
Number of HortiNigeria AFGEAN/NABC "white papers" for advocacy and policy reforms	White papers	12	3	0	0%	This is a collaborative effort within the HortiNigeria consortium. A draft Terms of Reference has been developed to get this delivered.

Annex 2. Risk Assessment

Component	Risks	Risks Assessment (High / Medium / Low); Reasons	Influence on Output of Activities	Mitigation Measures
Component 1				
	Gender Inclusion: Women participate passively in agriculture in the north, partly due to culture (there are certain jobs for men and women) and limited access to land, household head issues, and polygamy.	Medium	Meeting the target of 40% women poses some difficulties.	Deliberate efforts and strategically planned activities/events for women inclusion to obtain the current 40% women targets, e.g., women' staff recruitment, gender-based demos, gender sensitization events for both men and women.
	Insecurity: Not all parts of the program state areas are safe for staff due to insecurity, e.g., some LGAs are known for their high rate of kidnapping.	High	This reduces the program activities across the location state.	Areas with security threats are avoided. The program collaborates with community leaders at the point of community entry. Local people to work as support staff, double as informants for program staff, and assist with some farm tasks in cases where TFOs cannot be present.
	The approach of identifying project beneficiaries based on willingness to participate in training is against conventional practices, and as the program progresses, some farmers drop out.	High	Quite some number of HortiNigeria sample farmers have dropped out of the program.	Not all of the 1,000 farmers identified in the baseline are still actively involved. To ensure they participate, the program gives extra support and training to these farmers to ensure they realize the goal of HortiNigeria.
	Increased climate change events, pest and disease outbreaks, and water shortages occur in targeted areas.	High	It affects the projected yields as experienced with some of the farmers that supplied to Tomato Jos.	The program is focusing on increasing the efficiencies of production systems and technical innovations to deal with climate change.

Component 2				
	Climate-related risks: (1) Natural disasters (e.g., flood, drought, etc.) can impact negatively yield and production; (2) impact of drought on water availability for production; or (3) disease and pest outbreaks.	High	Planned field activities are distorted and existing farms may have a total loss or low production.	Partner with Nigerian Agricultural Insurance Corporation for possible risk sharing. Communicate with Nigerian meteorological services to correlate production yield and rainfall data, which will also guide the right planting time and harvesting. Promote technology improvement to manage production with entrepreneurial farmers (e.g., disease-free varieties/pest prevention techniques) and work with research institutes, e.g., NIHORT, FUNAAB, etc.
	Farmers have conflict with pastoralists due to grazing on farmland (also common under Component 1).	High	Destruction of farms, the inability of farmers to visit the farms. This has affected the harvest of some farmers working with Tomato Jos, limiting their ability to pay back the credit taken for the inputs.	Support the business champion to develop a far-reaching corporate social responsibility (CSR) policy targeting customers, employees, host communities, and partners.
Component 3				
	The limited willingness of financial institutions to service SMEs in the horticulture value chain. Horticulture is considered a higher risk than less perishable crops. Longer-term capital is almost never available to SMEs. Banks do, however, have the ambition to grow their investment portfolio in agribusiness.	Medium	The target of mobilized private sector capital will not be achieved, and resolving value chain bottlenecks through input provision, logistics services, aggregation and processing will be difficult.	The access to finance intervention is focusing on SME capacity building, combined with a blended finance approach, to make risks manageable for banks and the cost of capital affordable for SMEs.

Component 4				
	Tomato Jos could reduce operation or shut down as a result of security challenges in Kaduna.	Medium	This could adversely affect the expected outputs of farmers harvest being oftaken by TJ.	TJ has invested in the security management of its facilities. Sharing of security updates news to help fortify security at the facility.
	Policy advocacy: Identified policy issues may not be improved or changed during the timeframe of the program implementation due to changes in government or could take longer time than anticipated due to political patronage, political instability, insecurity, and insensitivity to the capacity of the target population.	Medium	This could affect the intended impact on policy advocacy that the program visualized, especially policy advocacy on reduced road taxes for horticulture products and restrictions on the importation of horticulture-specific fertilizers, that ought to be included in fertilizer legislation	HortiNigeria will constructively engage the key stakeholders on the identified policy to have some clarity on the policy direction, ensure intelligence-sharing with constant feedback as to how the implementation is progressing (qualitative updates), and where necessary fast-track next steps/actions via policy lobbying and facilitation of meetings.
Youth & Gender				
	Agribusiness is still being widely considered among youths in Nigeria as an alternative to unemployment. At the slightest opportunity for "white collar" jobs, they have been reported to exit for greener pastures.	High	Empowerment of youths and women requires consistent engagement and opportunity sharing.	Identify and enable youths' and women's participation in higher levels of the value chain. Work with component leads to ensure our program implementation remains innovative, attractive, and gainful to the youths.
	Community power holders (Component 1), especially in Kano and Kaduna, may enact laws or implement existing laws to exclude women and young females from engaging in vegetable cultivation.	Medium	40% of women inclusion during training may not be attained in such a community.	Community consultation to engage with the community influencers and the men on the benefits to the men, children, and community if the women are allowed to participate. Reassure them of the safety of the women.
Risks Common to All Components				
	Insecurity: The insecurity situation in Nigeria is still difficult to predict.	High	Planned activities may not be able to take place, negatively impacting program results.	The program has developed a proper safety and security plan and protocols. The program also has the obligation to immediately report any case of insecurity to the Embassy.

	Currency redesign	Medium	It hampers economic transactions, and most harvested crops remained unsold and were wasted.	
	Fuel scarcity	Medium	This has affected many of the services, especially at rural locations that are forced to buy at exorbitant prices.	
	Government transition from one civilian government to another.	Medium	It encourages policy somersault, which tends to cripple some of the program activities	The program is working closely with NABG to close the gap in the shortest possible time.





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BUILDING A SUSTAINABLE & INCLUSIVE
HORTICULTURE SECTOR



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