
# Multi-stakeholder workshop contributing to the development of a national seed road map for Nigeria

Wednesday, October 30th, 2019
Newton Park Hotel, Abuja

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WAGENINGEN UNIVERSITY & RESEARCH

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Netherlands Enterprise Agency

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The multi-stakeholder workshop was part of the Seed Sector Review in Nigeria project, funded by the Netherlands Enterprise Agency (project number IUC201906027).

Wageningen Centre for Development Innovation
Wageningen, February 2020

Report WCDI-20-097

Partners in the Seed Sector Review:

Thijssen, M.H., W.S. de Boef, F. Tadjini, E. Ojogu, H. Yaro, B. Udoh and N. Nwuneli, 2020. *Multi-stakeholder workshop contributing to the development of a national seed road map for Nigeria; Wednesday, October 30th, 2019; Newton Park Hotel, Abuja.* Wageningen Centre for Development Innovation, Wageningen University & Research. Report WCDI-20-097. Wageningen.

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This report can be downloaded for free at https://doi.org/10.18174/515371 or at www.wur.eu/cdi (under publications).



Report WCDI-20-097

Photo cover: Farmers at NASC research farm. Picture courtesy of NASC.

# Contents

# List of abbreviations and acronyms

| | |
|---|---|
| ABU/IAR | Ahmadu Bello University/Institute for Agricultural Research |
| ADP | Agricultural Development Programme |
| APP | Agricultural Promotion Policy |
| ARIPO | African Regional Intellectual Property Organization |
| AtSI | Access to Seeds Index |
| CGIAR | Consultative Group for International Agricultural Research |
| EBA | Enabling the Business of Agriculture |
| ECOWAS | Economic Community of West-African States |
| EGS | Early Generation Seed |
| EKN | Embassy of the Kingdom of the Netherlands |
| EWS | East-West Seed |
| FGD | Focus Group Discussion |
| FMARD | Federal Ministry of Agriculture and Rural Development |
| GNIS | Groupement National Interprofessionnel des Semences et plants (French Seed Trade Association) |
| HV | Hybrid Variety |
| ICD | Islamic Corporation for the Development of the Private Sector (Islamic Development Bank Group) |
| ICT | Information & Communication Technology |
| IFC | International Finance Corporation (World Bank Group) |
| ISDB | Islamic Development Bank |
| ISSD | Integrated Seed Sector Development |
| LR&SG | Legumes, rice and small grains |
| NACGRAB | National Centre for Genetic Resources and Biotechnology |
| NAERS | National Agricultural Extension and Research Liaison Services |
| NAQS | Nigeria Agricultural Quarantine Services |
| NARI | National Agricultural Research Institute |
| NASC | National Agricultural Seeds Council |
| NGO | Non-Governmental Organization |
| NYSC | National Youth Service Corps |
| OAPI | African Organization for Intellectual Property |
| OECD | Organization for Economic Co-operation and Development |
| OPV | Open-Pollinated Variety |
| PPP | Public Private Partnership |
| RTB | Root- and tuber crops, and bananas |
| RVO | Netherlands Enterprise Agency |
| SEEDAN | Seed Entrepreneurs Association of Nigeria |
| TASAI | The African Seed Access Index |
| TOT | Transfer of Technology |
| UPOV | International Union for the Protection of New Varieties of Plants |
| WCDI | Wageningen Centre for Development Innovation, Wageningen University & Research |
| WUR | Wageningen University & Research |

# 1 Seed sector review

## 1.1 Context

The Ministries of Foreign Affairs of the Federal Government of Nigeria and the Government of the Netherlands have agreed in a Memorandum of Understanding to explore collaboration in the development of Nigeria's seed sector. To identify opportunities for collaboration, they have agreed to conduct a seed sector review that will support the development of a national seed road map, endorsed by the Nigerian seed sector stakeholders. The national seed road map will provide inputs for the development of a Nigeria-Netherlands Seed Partnership.

## 1.2 Review process

The current multi-stakeholder workshop is part of a participatory and iterative process for the development of the national seed road map. It was preceded by a desk study and a series of focus group discussions (FGDs) organized around four distinct crop groups, i.e. maize; roots, tubers and bananas (RTBs); legumes and vegetables, that provided inputs to a seed sector assessment. During the FGDs, resource persons and crop experts identified current gaps in terms of seed supply for each crop group. They distinguished associated challenges in the performance of the seed sector limiting farmers' access to and use of quality seed of improved and adapted varieties. In addition, the FGDs provided inputs to the identification of strategies addressing current challenges, which have been translated into ambitions. The ambitions were subsequently organized by the consultant's team according to six seed sector functions using a framework for sector transformation. The multi-stakeholder workshop brought together selected participants of the FGDs complemented with other critical stakeholders to review the seed sector assessment and contribute to its translation into a national seed road map, which will present prioritized ambitions and elaborate strategic innovation pathways to realize those ambitions. Figure 1 shows the position of the multi-stakeholder workshop in the process of the seed sector review.

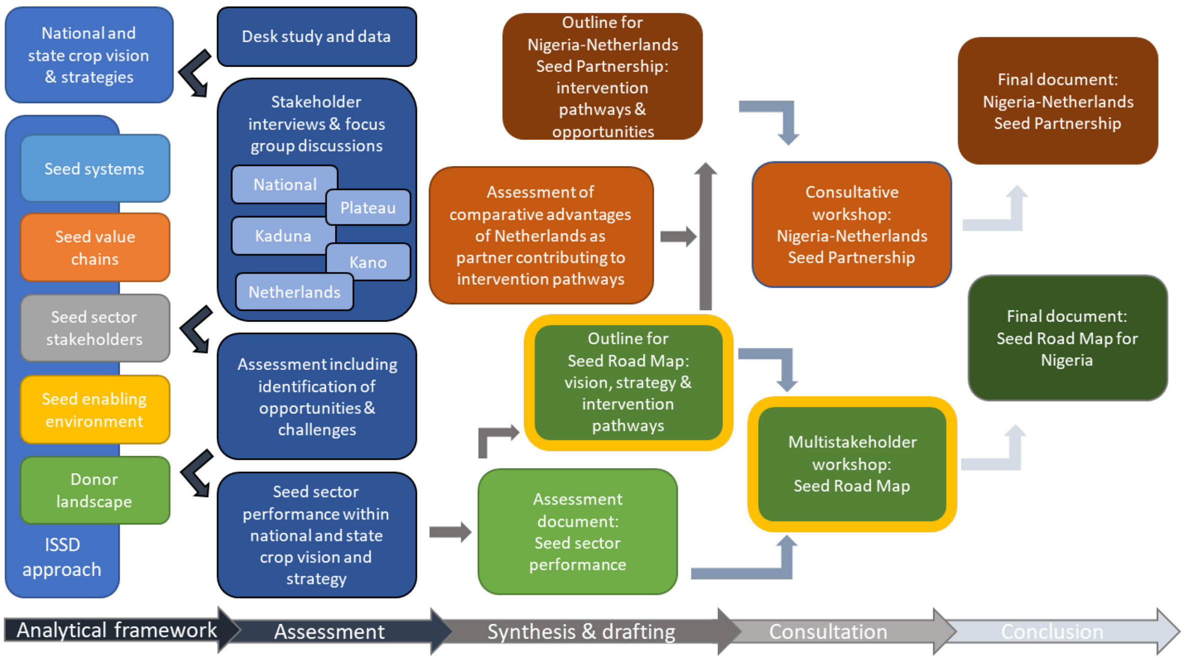



***Figure 1*** *The position of the multi-stakeholder workshop in the overall process of the seed sector review*

## 1.3 Partners

Wageningen University & Research (WUR), Wageningen Centre for Development Innovation (WCDI) has been selected as lead party to conduct the review. It collaborates with Sahel Consulting, Agriculture & Nutrition Ltd., East-West Seed (EWS) and its Knowledge Transfer Foundation, the National Agricultural Seeds Council (NASC), the Seed Entrepreneurs Association of Nigeria (SEEDAN) and the Embassy of the Kingdom of the Netherlands (EKN) in Abuja. The seed sector review is funded by the Netherlands Enterprise Agency (RVO).

## 1.4 The seed challenge

Enhancing the availability, access and use of quality seed is complex. Seed needs to be:
- Physically available in sufficient quantity at the right place and time
- Accessible at an affordable price
- To be of a variety well suited to the local agro-ecological conditions, farmer and market demands

Farmers access and use seed from several sources or seed systems. Each seed system has its own strengths and weaknesses; to strengthen the performance of a seed sector, each seed system requires targeted interventions for improvement.

## 1.5 Seed sector transformation

Inspired by the approach of integrated seed sector development (ISSD)[1], we use the framework for seed sector transformation that moves away from linear thinking, i.e. realizing that seed systems for different crops face different challenges and moving away from the ambition of developing one similar formal or commercial system for all crops. The framework asks for looking beyond individual crop value chains and applies "systems' thinking", i.e. a holistic approach with complementary strategies for the development of the seed sector as a whole. The seed sector transformation framework uses the future vision as point of departure, and not today's problems. Based on the seed sector challenges, ambitions for transforming the sector are formulated.

The transformation framework[2] builds upon the idea that to perform well the sector needs a strong production base, i.e. it needs to perform well in relation to the functions of (i) service provision, (ii) seed production, and (iii) market development. This production base needs to be complemented with a strong governance base, i.e. it needs to perform well in relation to the functions of (iv) revenue generation and re-investment, (v) coordination, and (vi) regulation. These six functions are used to assess the performance of the seed sector; they contribute to a future vision in which the entire seed sector, thus including both formal, intermediary and informal systems, and private and public components, becomes high-performing in ensuring availability of, access to and use of quality seed of all crops by farmers (Figure 2).

1 Find more information on the ISSD approach at: http://www.issdseed.org/

2 Find more information on the sector transformation framework at: http://www.aidenvironment.org/wp-content/uploads/2017/12/Sector-Governance-Short-Paper-Dec2017.pdf

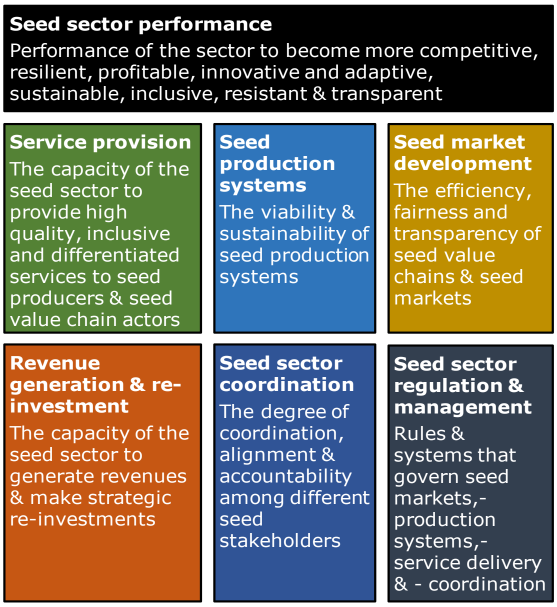



***Figure 2*** *Seed sector transformation framework - vision and functions*

## 1.6 Multi-stakeholder workshop

The objectives of the multi-stakeholder workshop were the following:

- Review and verify the seed sector assessment
- Enhance stakeholders' understanding of the framework of seed sector transformation (Figure 2) and its use to develop the national seed road map
- Prioritize ambitions for seed sector transformation in crop groups and stakeholder groups
- Draft and elaborate prioritized ambitions into strategic innovation pathways as part of the national seed road map

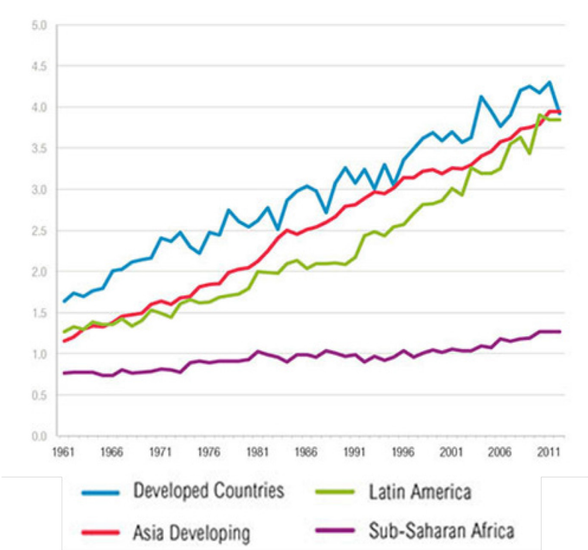
The following outcomes of the workshop were envisaged:

- Reviewed and verified seed sector assessment
- Enhanced seed sector stakeholders' understanding of the framework of seed sector transformation
- Enhanced seed sector stakeholders' appreciation on the way the seed sector transformation framework guides and structures a vision and ambitions of the national seed road map
- Prioritized ambitions for seed sector transformation using a multi-stakeholder consultative process
- Elaborated draft strategic innovation pathways using a multi-stakeholder consultative process

# 2 Current seed sector performance: where are we now?

## 2.1 Agricultural development

Despite 50 years of significant investments in crop improvement and formal seed system development, more than 90% of the seed used by farmers in Sub-Saharan Africa is obtained informally. Concerning crop productivity, it considerably lags behind other continents (see Figure 3). The Global Yield Gap Atlas[3] illustrates that the difference between potential yields and yields achieved in practice for example for maize and rainfed rice in Nigeria is more than 250%. It is estimated that the yield gap can be closed with 50% through the use of quality seed of improved and/or hybrid varieties; the other 50% can be closed by using good agronomic practices including the use of fertilizer.




http://www.wri.org/sites/default/files/uploads/cereal_yields_0.jpg

***Figure 3*** *Cereal yields - global trends*

## 2.2 Policy context

The Agriculture Promotion Policy (APP, 2016–2020) of the Federal Government of Nigeria considers the agricultural sector a key instrument to long-term economic growth. APP promotes private sector led agribusiness; strengthening of commodity value chains; improving market orientation through infrastructure and commodity exchanges; mainstreaming climate change measures; and implementing nutrition interventions for vulnerable groups. APP within its "Access to inputs section" aims to increase availability and access to quality seed through strengthening seed policies, leverage of global expertise and private sector development. The Federal Ministry of Agriculture and Rural Development (FMARD) is currently in the process of developing a new policy document; the national seed road map is a resource to this new document.

[3] Find the Global Yield Gap Atlas at: http://www.yieldgap.org/

## 2.3 Farmers’ current seed sources

Based on desk study and FGDs as part of the assessment, the consultant’s team has elaborated an overview of farmers’ current seed sources (Figure 4). The overview illustrates the predominance of farmer saved seed. Commercial seed is generally available for open-pollinated varieties (OPVs) of maize, and to a limited extent for maize hybrid varieties (HVs) and vegetables. For rice but also legumes and small grains, farmers source seed from various seed systems, however, they predominantly save their own seed. For RTBs, farmers primarily use farmer saved seed and source from informal seed markets.

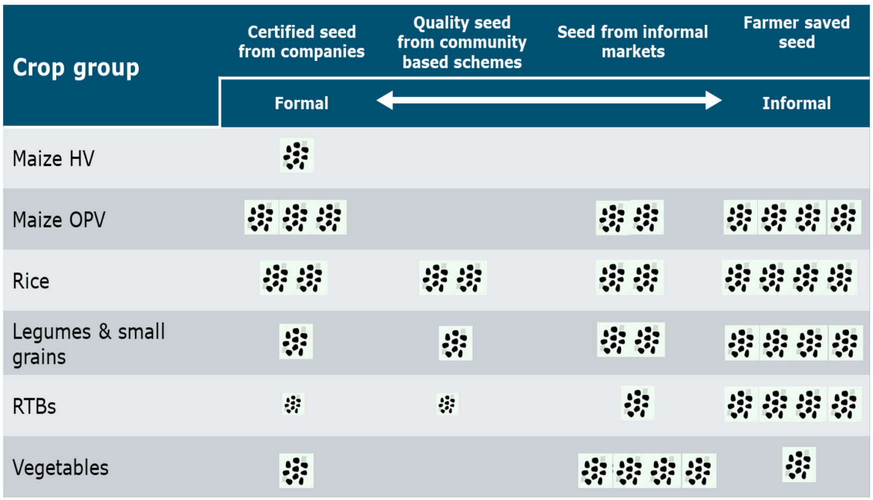



***Figure 4*** *Farmers’ seed sources for various crops and crop groups*

## 2.4 The seed gap

During FGDs and expert consultations, groups of resource persons engaged in making projections for crop production and seed demand. Based on FAOSTAT data for 2010 and 2015, they estimated the seed demand based on estimations for crop production, crop productivity and cropping area for 2020, 2025 and 2030 (Table 1). The projections assisted in the identification of challenges and opportunities for improving the performance of the seed sector for the crop group. More details on the assumptions for the projections can be found in the crop briefs[4] that have been developed as part of the seed sector review.

***Table 1*** *Seed gap projections for various crops as elaborated during FGDs*

| | 2020 | | | 2025 | 2030 |
|---|---|---|---|---|---|
| | Seed Demand | Seed Production | Seed Gap | Seed Gap | Seed Gap |
| Crop | mT | mT | % | % | % |
| Maize HV | 17,163 | 1,464 | 90 | 94 | 95 |
| Maize OPV | 26,088 | 27,811 | -7 | 0 | 0 |
| Cowpea | 9,710 | 1,940 | 80 | 75 | 70 |
| Groundnut | 34,000 | 2,000 | 94 | 90 | 75 |
| Yam | 10,000 | 0 | 100 | 99 | 90 |
| Irish potato | 288,620 | 2,886 | 99 | 98 | 96 |
| Tomato HV | 21 | NA | NA | NA | NA |
| Tomato OPV | 126 | NA | NA | NA | NA |
| Onion | 128 | 20 | 84 | 82 | 87 |

4 The crop briefs can be accessed at: https://issdafrica.files.wordpress.com/2020/02/seed-sector-review-nigeria-crop-briefs_final.pdf

## 2.5 Seed sector challenges

Based upon the estimated seed gaps, resource persons during the FGDs identified major seed sector performance challenges. Additional challenges were identified based on the Enabling the Business of Agriculture report for Nigeria (EBA, 2017[5]), The African Seed Access Index (TASAI, Nigeria report, 2019[6]) and Access to Seeds Index Western and Central Africa report (AtSI, 2019[7]). The consultant's team grouped and structured all identified challenges according to the six functions for seed sector transformation. The team also indicated if challenges are important to all crops, or if they are crop/crop group specific. Challenges have been verified through a review by key partners in the consulting process of the assessment report[8]. Find below the challenges for each of the six functions; it should be noted that only the challenges that are general for all crops are presented.

**Service provision**

- Infrastructural and technical capacity for variety development and early generation seed (EGS) at public research is limited
- A disconnect between research and farmers reduces variety adoption
- Constrained capacity and infrastructure of research organizations results in inefficient and complex variety release procedures
- Due to the limited capacity of research institutions, research results are not compelling and do not lead to significant economic gains at the commercial level
- Seed companies do not have access to financial products and services for their production and marketing operations
- Business support services to seed companies are not available
- Low extensionist/farmer ratio and limited involvement of seed companies in extension limit farmers access to seed related knowledge and information
- Seed producers and seed companies do not have sufficient access to seed quality assurance services

**Seed production systems**

- The capacity of seed companies in production -, marketing -, and financial management is limited
- Seed companies and producers are constrained in their infrastructural capacity
- Seed companies do not have access to accurate industry/market information to inform proper production planning
- Structure and processes for EGS supply are constrained and hamper variety deployment and replacement
- EGS demand forecasting systems inform future EGS needs of companies are not available
- Predominance of institutional markets for several crops results in seed market inefficiencies and carryover seed
- The presence of non-genuine seed companies and traders hampers the development of the sector

**Seed market development**

- Weak crop value chain structure and functioning combined with inefficient crop production practices result in farmers investing to a limited degree in quality seed of new and better performing varieties
- Instability in grain markets reduces farmers' willingness to invest in crop production, including the purchase of quality seed
- Farmers have limited awareness of quality seed and improved varieties
- Limited investment by seed companies in seed marketing and promotion reduces uptake by farmers
- Weak commercial seed distribution networks fail to reach farmers with adequate quantities of seed at the right quality and time
- Several agro-dealers are engaged in the marketing of fake seed
- Farmers and agro-dealers are not able to distinguish fake from quality seed

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5 Find Nigeria data of the Enabling Business of Agriculture at: https://eba.worldbank.org/en/data/exploreeconomies/nigeria/2019

6 Find the TASAI Nigeria brief at: https://tasai.org/wp-content/themes/tasai2016/img/tasai_nigeria_brief_2018_lr.pdf

7 Find data of the Access to Seeds Index on Western and Central Africa at: https://www.accesstoseeds.org/index/western-central-africa/

8 The assessment report can accessed at: https://issdafrica.files.wordpress.com/2020/02/seed-sector-review-nigeria-assessment-report_final.pdf

- NGO/government subsidies/distribution schemes distort farmers willingness to pay for quality seed
- These schemes distort the functioning of seed markets
- Imbalanced opportunities for national and international seed companies
- Farmers consider purchasing seed a risk, due to their limited trust in seed companies/agro-dealers

**Revenue generation and re-investment**
- Seed companies have a short-term business perspective; they save and invest financial resources to a limited degree
- Given the sector's immature financial status, tailored soft loans, financial products and services are not available to seed companies and their operations
- Quality assurance services are depending on government and project budgets; they are not based on service-based revenues
- Relatively high costs for variety release and required breeder involvement constrain seed companies releasing varieties and therefore hamper competition
- Government, NGO and project subsidies distort revenue generation and sustainability of private companies
- Plant Variety Protection is not yet operational; private companies are reluctant to bring new improved varieties to the Nigerian market
- The zero-duty for agricultural inputs is not applicable for seed, impacting seed prices

**Seed sector coordination**
- The performance of the seed sector is hampered by the friction between public and private stakeholders' interests
- NASC has the statutory mandate by law to regulate the seed sector, however, the synergy between FMARD and NASC is weak in the implementation of value chain seed related activities.
- The Seed Entrepreneurs Association of Nigeria (SEEDAN) does not have chapters on commodities, regions, or types of seed entrepreneurs, this results in limited representation of specific demands; its governance structure needs advancement
- Sector coordination and governance are jeopardized by limited and unreliable data availability
- A structured seed sector platform, which includes public, private, civil society and knowledge stakeholders, is absent
- Limited coordination in seed sector results in donor and development organizations' individual interventions in specific crop value chains and thereby impact the sector in an uncoordinated fashion

**Seed sector regulation and management**
- Public investment in research, crop improvement and seed systems for food security crops is limited or not structural
- A focus in quality assurance of NASC on few crops impacts the quality of seed available in RTBs and vegetables
- Policy on variety release of the Economic Community of West-African States (ECOWAS) is not implemented
- Limited enforcement of quality standards makes fake seed a rewarding business
- National seed companies cannot access the international market due the current situation of NASC membership of world seed bodies, such as its observer status with the International Union for the Protection of New Varieties of Plants (UPOV) and the application stage for the Seed Scheme of the Organization for Economic Co-operation and Development (OECD)
- Due to the weak partnership between NASC and other relevant government agencies such as Nigeria Customs Services and Nigeria Agricultural Quarantine Service (NAQS), regulation of seed importation is poor
- Corruption at ports and borders constrains seed import
- Level playing field to various seed companies hampering competition and their license to operate
- After approval of the Plant Variety Protection Bill, appropriate systems need to be put in place to attract foreign investment

# 3 Seed road map: where do we want to go?

## 3.1 Seed sector vision

The vision for the seed sector in Nigeria is to become more competitive, resilient, profitable, innovative and adaptive, sustainable, inclusive, resistant and transparent. Find in an elaboration of the vision in Figure 5.


***Figure 5*** *Seed sector vision*

## 3.2 Ambitions

Based on the challenges and strategies for tackling challenges as identified during FGDs and complemented with information resulting from the desk study, the consultants' team elaborated ambitions. Ambitions are descriptions of a desired state or outcome of a transformation process. The consultant's team grouped ambitions according to the six functions of sector transformation. The team also identified linkages between ambitions across different functions. Ambitions were marked as general, i.e. relevant to the entire seed sector and all crops, or as specific to certain crop groups (maize; roots, tubers and bananas [RTBs]; legumes, rice and small grains [LR&SG]; and vegetables).

**Service provision**

**Function:** The seed sector is capable of providing high quality, inclusive and differentiated services to seed producers and seed value chain actors

| TOPICS AND AMBITIONS | CROP GROUP |
|---|---|
| **1. Variety development** | |
| • Enhanced public capacity for variety development with functional research-farmer/market linkages | General |
| • Improved available legume varieties are resistant to key pests and diseases | LR&SG |
| • Increased capacity and commitment in variety development and local seed production of local vegetable crops such as okra, leafy vegetables and melon | Vegetables |
| **2. Variety release** | |
| • Efficient and transparent variety release procedures are in place and implemented | General |
| *Link with function of Revenue generation & reinvestment, and Seed sector regulation & management* | |
| **3. EGS supply** | |
| • Enhanced public and private capacity for EGS supply | General |
| • Established and operational maize EGS company | Maize |
| • Public private partnerships for legume EGS production supply sufficient quantities of quality EGS to seed companies and seed producers | LR&SG |
| • Operational commercial EGS systems for yam, cassava and Irish and sweet potato | RTBs |
| *Link with function of Seed production systems, and Revenue generation & reinvestment* | |
| **4. Seed import** | |
| • Increased efficiency and transparency in the implementation of the procedures for vegetable seed import | Vegetables |
| *Link with function of Revenue generation & reinvestment, and Seed sector regulation & management* | |
| **5. Business support** | |
| • Available business support services for seed companies | General |
| **6. Financial products and services** | |
| • Available financial products and services for seed companies and their operations | General |
| *Link with function of Revenue generation & reinvestment* | |
| **7. Extension** | |
| • Enhanced public and private extension services promoting farmers' use of quality seed of improved varieties | General |
| • Extension workers with skills on horticultural crops | Vegetables |
| • Extension promotes the use of new improved varieties of yam, cassava, Irish and sweet potato | RTBs |
| **8. Seed quality assurance** | |
| • Seed quality assurance system effective and sustainable in providing services to different seed producers, companies and agro-dealers | General |
| • A quality assurance system tailored to horticultural crops | Vegetables |
| *Link with function of Revenue generation & reinvestment, and Seed sector regulation & management* | |

### Seed production systems

**Function:** The seed sector has viable and sustainable seed production systems for all crops

| TOPICS AND AMBITIONS | CROP GROUP |
|---|---|
| **1. Seed data** | |
| • Seed companies have access to accurate industry/market information to inform proper production planning | General |
| *Link with function of Seed sector coordination* | |
| **2. Company specialization** | |
| • Seed companies have successfully specialized in specific crops/crop groups | General |
| • Enhanced & more profitable business model for hybrid maize seed production and marketing | Maize |
| • Operational complementary business models of domestically produced & import-based seed potato value chains | RTBs |
| • Increased number of companies specialized in quality RTB seed production and marketing | RTBs |
| • Increased specialization of seed companies & distributors in vegetables | Vegetables |
| • Enhanced engagement in mutually beneficial business models for international companies & local distributors in the vegetable sector | Vegetables |
| *Link with function of Seed market development, and Revenue generation & reinvestment* | |
| **3. Community based seed production** | |
| • Increased, more efficient and sustainable linkages between community-based legume, rice and small grains seed production with research institutes | LR&SG |
| *Link with function of Seed market development* | |
| **4. EGS supply** | |
| • Enhanced commercial and sustainable public and private structures and processes for EGS supply | General |
| *Link with function of Service provision, and Revenue generation & reinvestment* | |
| **5. EGS forecasting** | |
| • EGS demand forecasting system operational | General |
| **6. Company business capacity** | |
| • Enhanced seed company capacity in production -, marketing - and financial management | General |
| **7. Infrastructural capacity** | |
| • Enhanced seed producers' and seed companies' infrastructural capacity | General |
| • Enhanced infrastructure of seed companies in the production and marketing of quality RTB seed | RTBs |
| • Increased availability of central and local storage facilities for the marketing of quality legume seed | LR&SG |
| *Link with function of Revenue generation & reinvestment* | |
| **8. Seed repackaging** | |
| • Reduced use of repackaging by seed companies/distributors allowing for stronger marketing & reliability in the vegetable seed supply | Vegetables |
| **9. Institutional markets** | |
| • Targets for seed production are based on farmer and market demand, they no longer reflect institutional demands (government, NGOs and projects) | General |
| *Link with function of Seed market development, and Revenue generation & reinvestment* | |
| **10. Tackling counterfeiting** | |
| • Non-genuine seed companies and traders are out-of-business | General |
| *Link with function of Seed market development, and Seed sector regulation & management* | |

## Seed market development

**Function:** The seed sector has efficient, fair and transparent seed value chains and seed markets

| TOPICS AND AMBITIONS | CROP GROUP |
|---|---|
| **1. Crop value chain pulling seed demand** | |
| • Enhanced structure and functioning of crop value chains, result in increased farmers use of quality seed of improved varieties | General |
| • Maize grain value chains with more stable prices and increased profitability for farmers, which results in an increased demand for hybrid maize seed | Maize |
| • Developed cowpea grain aggregation centres that increase quality seed demand | LR&SG |
| **2. Improved crop production practices** | |
| • Increased farmers use of more optimal crop production practices including the use of quality seed of improved varieties | General |
| • More profitable and sustainable RTB production systems | RTBs |
| • Enhanced professionalization of vegetable production | Vegetables |
| • Increased farmers' awareness of farmers on the practices & advantages of growing hybrid maize | Maize |
| **3. Marketing and promotion by companies** | |
| • Seed companies invest in marketing and promotion | General |
| • Increased farmers' awareness of and willingness to pay for quality seed and improved varieties | General |
| • Increased farmers' awareness on legume varieties that are adapted to their agro-ecologies & market demands | LRSG |
| • Increased farmers' awareness on RTB seed systems | RTBs |
| **4. Seed distribution network** | |
| • Networks of seed companies and agro-dealers ensure delivery of adequate quantities of quality seed at the right time | General |
| **5. Institutional markets** | |
| • Reduced distortion of the functioning of seed markets due to reduced interventions by institutional buyers | General |
| *Link with function of Seed production systems and Revenue generation & reinvestment* | |
| **6. Tackling counterfeiting** | |
| • Reduced engagement of agro-dealers and seed companies in the marketing of fake seed and increased farmers' trust in agro-dealers and seed companies | General |
| *Link with function of Seed production, and Seed sector regulation & management* | |
| **7. Community based seed production** | |
| • Established business-oriented community based legume seed production schemes | LR&SG |
| *Link with function of Seed production systems* | |
| **8. Company specialization** | |
| • Increased number of private seed companies to include legumes in their crop portfolio | LR&SG |
| *Link with function of Seed production systems, and Revenue generation & reinvestment* | |
| **9. Business incentives** | |
| • Increased availability of new vegetable varieties of international seed companies through local distributors | Vegetables |
| **10. Seed business cultural acceptance** | |
| • Promoted seed entrepreneurship in relation to yam traditions & culture | RTBs |

**Revenue generation & reinvestment**

**Function:** The seed sector has the capacity to generate revenues and make strategic re-investments

| TOPICS AND AMBITIONS | CROP GROUP |
|---|---|
| **1. Business perspective** | |
| • Enhanced mid- and long-term business perspective of companies and agro-dealers | General |
| **2. Company specialization** | |
| • Increased professionalization of seed companies/ distributors in vegetable seed sales | Vegetables |
| • Complementary models for seed potato imports & local seed potato production, each supporting distinct potato markets, developed & operational | RTBs |
| • See also Seed production systems | |
| • Increased specialization of private companies in RTB seed supply | RTBs |
| *Link with function of Seed production systems, and Seed market development* | |
| **3. Infrastructural capacity** | |
| • Increased investment in the infrastructure of private seed companies for RTB seed production and marketing | RTBs |
| *Link with function of Seed production systems* | |
| **4. EGS supply** | |
| • Sustainable & economically viable public-private partnerships on legume, rice and small grains EGS production & marketing that support the functioning of seed value chains | LR&SG |
| *Link with function of Service provision, and Seed production systems* | |
| **5. Seed quality assurance** | |
| • Sustainable financial structure of quality assurance based on service delivery and thereby more efficient and effective | General |
| *Link with function of Service provision, and Seed sector regulation & management* | |
| **6. Financial products & services** | |
| • Available and tailored soft loans, financial products and services for seed companies, and seed production and marketing operations | General |
| *Link with function of Service provision* | |
| **7. Variety release** | |
| • Reduced costs, efficiency and transparency in variety release | General |
| *Link with function of Service provision, and Seed sector regulation & management* | |
| **8. Plant variety protection** | |
| • Operational Plant Variety Protection | General |
| *Link with function of Seed sector regulation & management* | |
| **9. Seed import** | |
| • Zero duty for imported seed similar to other agricultural inputs | General |
| *Link with function of Service provision, and Seed sector regulation & management* | |
| **10. Institutional markets** | |
| • Reduced government, NGO and project subsidies and interventions in the seed market | General |
| *Link with function of Seed production systems, and Seed market development* | |

## Seed sector coordination

**Function:** The seed sector has appropriate coordination and governance mechanisms in place, which result in alignment and accountability among different seed stakeholders

| TOPICS AND AMBITIONS | CROP GROUP |
|---|---|
| **1. Seed data** | |
| • Increased availability & reliability of data on seed & seed business | General |
| *Link with function of Seed production systems* | |
| **2. Seed sector strategy** | |
| • FMARD addresses seed aspects within its value chain structure and/or engages in cross-crop value chains, e.g. seed sector, policy guidance | General |
| • Enhanced promotion & strengthening of the horticultural sector including a more enabling environment through specific government strategy on horticulture | Vegetables |
| **3. Seed sector governance** | |
| • Enhanced structure & governance of the seed sector with distinct separation of institutional responsibilities for governance, regulation and implementation | General |
| **4. Seed platform** | |
| • Established structured & functional seed sector platform | General |
| **5. Stakeholder dialogue** | |
| • Reduced friction between public & private stakeholders' interests in seed sector development | General |
| **6. Alignment of donor interventions** | |
| • Increased coordination & alignment among donor & development organizations in the seed sector | General |
| **7. Seed Trade Association** | |
| • Enhanced structure, functioning and governance of the Seed Entrepreneurs Association of Nigeria (SEEDAN), representing different regions, crops & types of seed businesses | General |

### Seed sector regulation & management

**Function:** The seed sector has rules and systems in place that govern seed markets, production systems, service delivery and coordination

| TOPIC AND AMBITIONS | CROP GROUP |
|---|---|
| **1. Stable and profitable grain markets** | |
| • Food security policies and prices in the grain markets enable farmers' profitability and investment; they contribute to farmers increased use of inputs (including varieties) and make it worthwhile to invest in increasing productivity for food crops | General |
| **2. Variety release** | |
| • Enforcement of ECOWAS policy on variety release supports private sector investment | General |
| • Increased cost-benefit ratio and efficiency for vegetable variety release | Vegetables |
| *Link with functions of Service provision, and Revenue generation & reinvestment* | |
| **3. Plant variety protection** | |
| • Plant Variety Protection Bill is implemented supporting private sector investment | General |
| *Link with function of Revenue generation & reinvestment* | |
| **4. Seed quality assurance** | |
| • Specific standards and protocols developed and implemented for seed quality assurance of RTBs and vegetables | RTB and vegetables |
| *Link with function of Service provision, and Revenue generation & reinvestment* | |
| **5. Seed export** | |
| • NASC is member of international bodies, e.g. UPOV and OECD seed scheme, supporting seed export | General |
| **6. Seed import** | |
| • Efficient & transparent seed import conditions at ports and borders support seed business development | General |
| • Enhanced collaboration in service delivery by NASC, Nigeria Customs services and Nigeria Quarantine Service effectively facilitate seed import | General |
| • Increased transparency & efficiency in quarantine & quality assurance operations for import of Irish seed potato | RTBs |
| *Link with function of Service provision, and Revenue generation & reinvestment* | |
| **7. Tackling counterfeiting** | |
| • Enforcement of quality assurance & fake seed penalties restricts profitability of non-genuine seed companies & agro-dealers | General |
| • Reduced fake maize seed in the market through strategies for tackling counterfeiting | Maize |
| *Link with function of Seed production systems, and Seed market development* | |
| **8. Regulations adapted for specific crops** | |
| • Functional seed regulatory frameworks for RTBs and vegetables that take into consideration specific requirements for these crops | RTBs and vegetables |

# 4 Prioritization of ambitions

## 4.1 Process

During the multi-stakeholder workshop, the participants prioritized seed sector transformation ambitions. Find the steps in the process below:

- The consultants team provided a handout with ambitions as presented in 5.2
- Topic name and general descriptions of the ambitions were presented for each function at the wall on cards
- The participants were grouped twice; first according to crop groups and secondly according to stakeholders:
  - Crop groups:
    - Maize (MAI)
    - Legumes, rice and small grains (LRS)
    - Root- and tuber crops, and bananas (RTB)
    - Vegetables (VEG)
  - Stakeholders:
    - FMARD (FMA)
    - NASC & NAQS
    - Research & knowledge organizations (RES)
    - Private sector (PRI)
    - NGOs & farmer organizations (NGO FAR)
- In each round, a group prioritized within each of the six functions three ambitions; they noted these in a recording sheet. This was followed by the prioritization of the three most important ambitions across the six functions
- Upon each round, using stickers with a clear legend, the groups noted their prioritization on the cards with ambitions on the wall
- The crop group prioritization preceded the stakeholder prioritization
- Paragraph 6.2 presents the outcomes of the prioritization of the ambitions per function; further it also presents with highlighted blocks the overall prioritized functions for the crop and stakeholder groups.
- During synthesis of the outcomes, first the score from the crop group and stakeholder prioritizations were summed, subsequently scores were combined. This provided a first insight into the priorities within each function.
- Secondly, associated topics and ambitions were combined across functions. The score from the prioritizations across functions were added; this combined score gives an indication of the topic priorities only. All topics which have been prioritized will be further elaborated in the seed road map.

## 4.2 Prioritization of topics including ambitions within each function

| No. | TOPIC | DESCRIPTION | CROP GROUPS | | | | | STAKEHOLDERS | | | | | | COMBINED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MAI | LRS | RTB | VEG | *SUBT* | FMA | NASC NAQS | RES | PRI | NGO FAR | *SUBT* | TOTAL |
| | **Service provision** | **The seed sector has the capacity to provide high quality, inclusive and differentiated services to seed producers and seed value chains** | | | | | | | | | | | | |
| 1 | Variety development | Enhanced public capacity for variety development with functional research/farmer/market linkages | 1 | 1 | 1 | 1 | *4* | 1 | 1 | **1*** | | 1 | *4* | **8** |
| 2 | Extension | Enhanced public and private extension services promoting farmers' use of quality seed of improved varieties | 1 | 1 | 1 | **1*** | *4* | | 1 | | 1 | **1*** | *3* | **7** |
| 3 | EGS supply | Enhanced public and private capacity for EGS supply | 1 | | **1*** | | *2* | 1 | | 1 | 1 | | *3* | **5** |
| 4 | Variety release | Efficient and transparent variety release procedures are in place and implemented | | | | 1 | *1* | | | 1 | | 1 | *2* | **3** |
| 5 | Seed quality assurance | Seed quality assurance system effective and sustainable in providing services to different seed producers, companies and agro-dealers | | **1*** | | | *1* | 1 | **1*** | | | | *2* | **3** |
| 6 | Financial products & services | Available financial products and services for seed companies and their operations | | | | | *0* | | | | 1 | | *1* | **1** |
| 7 | Seed import | Increased efficiency and transparency in the implementation of the procedures for vegetable seed import | | | | | *0* | | | | | | *0* | **0** |
| 8 | Business support | Available business support services for seed companies | | | | | *0* | | | | | | *0* | **0** |

*Part of the 3 prioritized challenges per working group

| No. | TOPIC | DESCRIPTION | CROP GROUPS | | | | | STAKEHOLDERS | | | | | | COMBINED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MAI | LRS | RTB | VEG | *SUBT* | FMA | NASC NAQS | RES | PRI | NGO FAR | *SUBT* | TOTAL |
| | **Seed production systems** | **Seed production systems are viable and sustainable** | | | | | | | | | | | | |
| 1 | Seed data | Seed companies and other stakeholders have access to accurate industry/market information to inform proper production planning | | 1 | 1 | 1 | *3* | | 1 | 1 | 1 | **1*** | *4* | **7** |
| 2 | Infrastructural capacity | Enhanced seed producers' and seed companies' infrastructural capacity | 1 | | 1 | 1 | *3* | **1*** | | 1 | 1 | | *3* | **6** |
| 3 | Company specialization | Seed companies have successfully specialized in specific crops/crop groups | 1 | | **1*** | | *2* | 1 | | | | 1 | *2* | **4** |
| 4 | Community based seed production | Increased, more efficient and sustainable linkages between community based RTB, legume, rice and small grain seed production with research organizations | | | 1 | | *1* | | 1 | 1 | | | *2* | **3** |
| 5 | EGS supply | Enhanced commercial and sustainable public and private structures and processes for EGS supply | **1*** | **1*** | | | *2* | 1 | | | **1*** | | *2* | **4** |
| 6 | Tackling counterfeiting | Non-genuine seed companies & -traders are out of business | | | | 1 | *1* | | **1*** | | | 1 | *2* | **3** |
| 7 | EGS forecasting | EGS demand forecasting system operational | | | | | *0* | | | | | | *0* | **0** |
| 8 | Company business capacity | Enhanced seed company capacity in production-, marketing- and financial management | | | | | *0* | | | | | | *0* | **0** |
| 9 | Institutional markets | Targets for seed production are based on farmer & market demand, they no longer reflect institutional demands (govt, NGOs & projects) | | | | | *0* | | | | | | *0* | **0** |
| 10 | Seed repackaging | Reduced use of repackaging by seed companies/distributors allowing for stronger marketing & reliability in the vegetable seed supply | | | | | *0* | | | | | | *0* | **0** |

*Part of the 3 prioritized challenges per working group

| No. | TOPIC | DESCRIPTION | CROP GROUPS | | | | | STAKEHOLDERS | | | | | | COMBINED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MAI | LRS | RTB | VEG | *SUBT* | FMA | NASC NAQS | RES | PRI | NGO FAR | *SUBT* | TOTAL |
| | **Seed market development** | **Seed value chains and seed markets are efficient, fair and transparent** | | | | | | | | | | | | |
| 1 | Marketing & promotion by companies | Seed companies invest in marketing and promotion | 1 | 1 | 1 | 1 | *4* | 1 | 1 | | 1 | 1 | *4* | **8** |
| 2 | Improved crop production practices | Increased farmers' use of more optimal production practices including the use of quality seed of improved varieties | | 1 | **1*** | 1 | *3* | 1 | | 1 | | 1 | *3* | **6** |
| 3 | Seed distribution network | Networks of seed companies and agro-dealers ensure delivery of adequate quantities of quality seed at the right time | 1 | | 1 | | *2* | | 1 | 1 | 1 | | *3* | **5** |
| 4 | Crop VC pulling seed demand | Enhanced structure and functioning of crop value chains results in increased farmers' use of quality seed of improved varieties | 1 | **1*** | | | *2* | **1*** | | | 1 | | *2* | **4** |
| 5 | Tackling counterfeiting | Reduced engagement of agro-dealers and seed companies in the marketing of fake seed and increased farmers' trust in agro-dealers and seed companies | | | | 1 | *1* | | 1 | 1 | | | *2* | **3** |
| 6 | Community based seed production | Established business oriented community-based seed production schemes for RBTs, legumes, rice and small grains | | | | | *0* | | | | | 1 | *1* | **1** |
| 7 | Institutional markets | Reduced distortion of the functioning of seed markets due to reduced interventions by institutional buyers | | | | | *0* | | | | | | *0* | **0** |
| 8 | Company specialization | Increased number of private seed companies to include RTBs, legumes, rice and/or small grains in their crop portfolio | | | | | *0* | | | | | | *0* | **0** |
| 9 | Business incentives | Increased availability of new vegetable varieties of international seed companies through local distributors | | | | | *0* | | | | | | *0* | **0** |
| 10 | Seed business cultural acceptance | Promoted seed entrepreneurship in relation to yam traditions & culture | | | | | *0* | | | | | | *0* | **0** |

*Part of the 3 prioritized challenges per working group

| No. | TOPIC | DESCRIPTION | CROP GROUPS | | | | | STAKEHOLDERS | | | | | | COMBINED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MAI | LRS | RTB | VEG | *SUBT* | FMA | NASC NAQS | RES | PRI | NGO FAR | *SUBT* | TOTAL |
| | **Revenue generation & re-investment** | **The seed sector has the capacity to generate revenues and make strategic re-investments** | | | | | | | | | | | | |
| 1 | Financial products & services | Available and tailored soft loans, financial products and services for seed companies and seed production & marketing operations | **1** | | 1 | | *2* | 1 | 1 | 1 | **1*** | | *4* | **6** |
| 2 | Plant variety protection | Operational plant variety protection | 1 | | | 1 | *2* | | 1 | 1 | 1 | | *3* | **5** |
| 3 | Infrastructural capacity | Increased investment in the infrastructure of private seed companies for RTB and other crop groups' seed production and marketing | | 1 | 1 | | *2* | 1 | | | 1 | | *2* | **4** |
| 4 | Seed quality assurance | Sustainable financial structure of quality assurance based on service delivery and thereby being more efficient and effective | | 1 | | 1 | *2* | | | 1 | | | *1* | **3** |
| 5 | Company specialization | Increased professionalization of seed companies/distributors in seed sales of specific crops/crop groups | | | 1 | | *1* | | | | | 1 | *1* | **2** |
| 6 | EGS supply | Sustainable and commercially viable public-private partnerships on RTB and SGL EGS production and marketing that support the functioning of seed value chains | | 1 | | | *1* | 1 | | | | | *1* | **2** |
| 7 | Variety release | Reduced costs, efficiency and transparency in variety release | | | | 1 | *1* | | | | | 1 | *1* | **2** |
| 8 | Institutional markets | Reduced government, NGO and project subsidies and interventions in the seed market | 1 | | | | *1* | | 1 | | | | *1* | **2** |
| 9 | Seed import | Zero duty for imported seed similar to other agricultural inputs | | | | | *0* | | | | | 1 | *1* | **1** |
| 10 | Business perspective | Enhanced mid- and long-term business of companies and agro-dealers | | | | | *0* | | | | | | *0* | **0** |

*Part of the 3 prioritized challenges per working group

| No. | TOPIC | DESCRIPTION | CROP GROUPS | | | | | STAKEHOLDERS | | | | | | COMBINED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MAI | LRS | RTB | VEG | *SUBT* | FMA | NASC NAQS | RES | PRI | NGO FAR | *SUBT* | TOTAL |
| | **Seed sector coordination** | **High degree of coordination, alignment and accountability among different seed stakeholders** | | | | | | | | | | | | |
| 1 | Seed sector strategy | FMARD addresses seed aspects within its value chain structure and/or engages in cross-crop value chains | 1 | 1 | 1 | 1 | *4* | **1*** | 1 | 1 | 1 | | *4* | **8** |
| 2 | Seed data | Increased availability and reliability of data on seed and seed business | 1 | | | **1*** | *2* | 1 | 1 | 1 | **1*** | **1*** | *5* | **7** |
| 3 | Seed sector governance | Enhanced structure and governance of the seed sector with distinct separation of institutional responsibilities for governance, regulation and implementation | | 1 | | | *1* | 1 | 1 | 1 | | | *3* | **4** |
| 4 | Seed trade association | Enhanced SEEDAN structure, functioning and governance, representing different regions, crops and types of seed business | | 1 | 1 | | *2* | | | | 1 | | *1* | **3** |
| 5 | Stakeholder dialogue | Reduced friction between public and private stakeholders' interests in seed sector development | | 1 | | | *1* | | | | | 1 | *1* | **2** |
| 6 | Alignment of donor interventions | Increased coordination and alignment among donor and development organizations in the seed sector | 1 | | 1 | | *2* | | | | | | *0* | **2** |
| 7 | Seed platform | Established structured and functional seed sector platform | | | | | *0* | | | | | 1 | *1* | **1** |

*Part of the 3 prioritized challenges per working group

| No. | TOPIC | DESCRIPTION | CROP GROUPS | | | | | STAKEHOLDERS | | | | | | COMBINED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MAI | LRS | RTB | VEG | *SUBT* | FMA | NASC NAQS | RES | PRI | NGO FAR | *SUBT* | TOTAL |
| | **Seed sector regulation & management** | **Rules and systems that govern seed markets, - production systems, - service delivery, and seed sector coordination are in place and enable the sector** | | | | | | | | | | | | |
| 1 | Plant variety protection | Plant variety protection bill is implemented supporting private sector investment | **1*** | 1 | 1 | **1*** | *4* | | **1*** | **1*** | 1 | 1 | *4* | **8** |
| 2 | Seed quality assurance | Specific standards and protocols developed and implemented for seed quality assurance of RTBs and vegetables | 1 | 1 | 1 | | *3* | 1 | 1 | 1 | | 1 | *4* | **7** |
| 3 | Variety release | Enforcement of ECOWAS policy on variety release supports private sector investment | | | | 1 | *1* | | | **1*** | 1 | | *2* | **3** |
| 4 | Tackling counterfeiting | Enforcement of quality assurance and fake seed penalties restricts profitability of non-genuine seed companies and agro-dealers | 1 | | | 1 | *2* | | | | | 1 | *1* | **3** |
| 5 | Stabile & profitable grain markets | Food security policies and prices in grain/crop markets enable farmers' profitability and investment; they contribute to increased input use and make it worthwhile to invest in increasing productivity for food crops | | | | | *0* | 1 | | | 1 | | *2* | **2** |
| 6 | Regulations adapted for specific crops | Functional seed regulatory frameworks for RTB/vegetables that take into consideration specific requires for those crops | | | 1 | | *1* | 1 | | | | | *1* | **2** |
| 7 | Seed export | NASC is member of international bodies, e.g. UPOV and OECD seed scheme, supporting seed export | | 1 | | | *1* | | | | | | *0* | **1** |
| 8 | Seed import | Efficient and transparent seed import conditions at ports and borders support seed business development | | | | | *0* | | 1 | | | | *1* | **1** |

*Part of the 3 prioritized challenges per working group

## 4.3 Synthesis of prioritization of topics

| TOPIC (JOINT) | FUNCTION | TOPIC IN FUNCTION | AMBITION | COMBINED TOTAL | Group total |
|---|---|---|---|---|---|
| Seed quality assurance | REGU2 | Seed quality assurance | Specific standards and protocols developed and implemented for seed quality assurance of RTBs and vegetables | **7** | **15** |
| | SERV5 | Seed quality assurance | Seed quality assurance system effective and sustainable in providing services to different seed producers, companies and agro-dealers | **3** | |
| | REVE4 | Seed quality assurance | Sustainable financial structure of quality assurance based on service delivery and thereby being more efficient and effective | **3** | |
| | REGU6 | Regulations adapted for specific crops | Functional seed regulatory frameworks for RTB/vegetables that take into consideration specific requires for those crops | **2** | |
| Seed data | PROD1 | Seed data | Seed companies and other stakeholders have access to accurate industry/market information to inform proper production planning | **7** | **14** |
| | COOR2 | Seed data | Increased availability and reliability of data on seed and seed business | **7** | |
| Plant variety protection | REGU1 | Plant variety protection | Plant variety protection bill is implemented supporting private sector investment | **8** | **13** |
| | REVE2 | Plant variety protection | Operational plant variety protection | **5** | |
| EGS supply | SERV3 | EGS supply | Enhanced public and private capacity for EGS supply | **5** | **11** |
| | PROD5 | EGS supply | Enhanced commercial and sustainable public and private structures and processes for EGS supply | **4** | |
| | REVE6 | EGS supply | Sustainable and commercially viable public-private partnerships on RTB and SGL EGS production and marketing that support the functioning of seed value chains | **2** | |
| | PROD7 | EGS forecasting | EGS demand forecasting system operational | **0** | |
| Infrastructural capacity | PROD2 | Infrastructural capacity | Enhanced seed producers' and seed companies' infrastructural capacity | **6** | **10** |
| | REVE3 | Infrastructural capacity | Increased investment in the infrastructure of private seed companies for RTB and other crop groups' seed production and marketing | **4** | |
| Tackling counterfeiting | PROD6 | Tackling counterfeiting | Non-genuine seed companies & -traders are out of business | **3** | **9** |
| | MARK5 | Tackling counterfeiting | Reduced engagement of agro-dealers and seed companies in the marketing of fake seed and increased farmers' trust in agro-dealers and seed companies | **3** | |
| | REGU4 | Tackling counterfeiting | Enforcement of quality assurance and fake seed penalties restricts profitability of non-genuine seed companies and agro-dealers | **3** | |

| TOPIC (JOINT) | FUNCTION | TOPIC IN FUNCTION | AMBITION | COMBINED TOTAL | Group total |
|---|---|---|---|---|---|
| Marketing & promotion by companies | MARK1 | Marketing & promotion by companies | Seed companies invest in marketing and promotion | **8** | **8** |
| Seed sector strategy | COOR1 | Seed sector strategy | FMARD addresses seed aspects within its value chain structure and/or engages in cross-crop value chains | **8** | **8** |
| Professional variety development | SERV1 | Variety development | Enhanced public capacity for variety development with functional research/farmer/market linkages | **8** | **8** |
| Variety release | SERV4 | Variety release | Efficient and transparent variety release procedures are in place and implemented | **3** | **8** |
| | REGU3 | Variety release | Enforcement of ECOWAS policy on variety release supports private sector investment | **3** | |
| | REVE7 | Variety release | Reduced costs, efficiency and transparency in variety release | **2** | |
| Extension | SERV2 | Extension | Enhanced public and private extension services promoting farmers' use of quality seed of improved varieties | **7** | **7** |
| Financial products & services | REVE1 | Financial products & services | Available and tailored soft loans, financial products and services for seed companies and seed production & marketing operations | **6** | **7** |
| | SERV6 | Financial products & services | Available financial products and services for seed companies and their operations | **1** | |
| Seed sector governance & platform | COOR3 | Seed sector governance | Enhanced structure and governance of the seed sector with distinct separation of institutional responsibilities for governance, regulation and implementation | **4** | **7** |
| | COOR5 | Stakeholder dialogue | Reduced friction between public and private stakeholders' interests in seed sector development | **2** | |
| | COOR7 | Seed platform | Established structured and functional seed sector platform | **1** | |
| Crop value chain pulling seed demand | MARK4 | Crop value chain pulling seed demand | Enhanced structure and functioning of crop value chains, result in increased farmers use of quality seed of improved varieties | **4** | **6** |
| | REGU5 | Stable & profitable grain markets | Food security policies and prices in grain/crop markets enable farmers' profitability and investment; they contribute to increased input use and make it worthwhile to invest in increasing productivity for food crops | **2** | |
| Improved crop production practices | MARK2 | Improved crop production practices | Increased farmers' use of more optimal production practices including the use of quality seed of improved varieties | **6** | **6** |

| TOPIC (JOINT) | FUNCTION | TOPIC IN FUNCTION | AMBITION | COMBINED TOTAL | Group total |
|---|---|---|---|---|---|
| Company professionalization & specialization | PROD3 | Company specialization | Seed companies have successfully specialized in specific crops/crop groups | **4** | **6** |
| | REVE5 | Company specialization | Increased professionalization of seed companies/distributors in seed sales of specific crops/crop groups | **2** | |
| | MARK8 | Company specialization | Increased number of private seed companies to include RTBs, legumes, rice and/or small grains in their crop portfolio | **0** | |
| | REVE11 | Company specialization (potato) | Complementary models of seed potato imports and local seed potato production (each supporting distinct potato markets) developed and operational | **0** | |
| | MARK9 | Business incentives | Increased availability of new vegetable varieties of international seed companies through local distributors | **0** | |
| | REVE10 | Business perspective | Enhanced mid- and long-term business of companies and agro-dealers | **0** | |
| | SERV8 | Business support | Available business support services for seed companies | **0** | |
| | PROD8 | Company business capacity | Enhanced seed company capacity in production-, marketing- and financial management | **0** | |
| Seed distribution network | MARK3 | Seed distribution network | Networks of seed companies and agro-dealers ensure delivery of adequate quantities of quality seed at the right time | **5** | **5** |
| Community based seed production | PROD4 | Community based seed production | Increased, more efficient and sustainable linkages between community based RTB, legume, rice and small grain seed production with research organizations | **3** | **4** |
| | MARK6 | Community based seed production | Established business oriented community-based seed production schemes for RBTs, legumes, rice and small grains | **1** | |
| Seed trade association | COOR4 | Seed trade association | Enhanced SEEDAN structure, functioning and governance, representing different regions, crops and types of seed business | **3** | **3** |
| Alignment of donor interventions | COOR6 | Alignment of donor interventions | Increased coordination and alignment among donor and development organizations in the seed sector | **2** | **2** |
| Institutional markets | REVE8 | Institutional markets | Reduced government, NGO and project subsidies and interventions in the seed market | **2** | **2** |
| | PROD10 | Institutional markets | Targets for seed production are based on farmer and market demand, they no longer reflect institutional demands (government, NGOs and projects) | **0** | |
| | MARK7 | Institutional markets | Reduced distortion of the functioning of seed markets due to reduced interventions by institutional buyers | **0** | |
| Seed import | REVE9 | Seed import | Zero duty for imported seed similar to other agricultural inputs | **1** | **2** |
| | REGU8 | Seed import | Efficient and transparent seed import conditions at ports and borders support seed business development | **1** | |
| | SERV7 | Seed import | Increased efficiency and transparency in the implementation of the procedures for vegetable seed import | **0** | |
| Seed export | REGU7 | Seed export | NASC is member of international bodies, e.g. UPOV and OECD seed scheme, supporting seed export | **1** | **1** |

# 5 Strategic innovation pathways

## 5.1 Process

During the workshop, the participants joined in six groups, each covering one function. The composition of each group was structured allowing for government, private sector, research organizations, NGO and farmer organizations being represented in each group. Each group was requested to identify three topics among those prioritized for a function. To avoid duplication, the groups in a coordinated fashion in plenary choose the topics to elaborate. Supported by a facilitator, each group made an action plan for the design of a strategic innovation pathway for one or two topics. The discussion was structured as follows:

- What is the current situation?
- What is the ambition (in five years)?
- What are components of a strategic innovation pathway? What steps can be made to result and contribute to the new situation?
- Who are the key stakeholders?
- What kind of toolbox can be used (training, studies, business-to-business matchmaking, piloting & scaling etc)?
- What type of catalyst can lead the process?
- How do you foresee sustainability of the new situation?
- What do you foresee as a measurable 5-year target?

During the subsequent plenary session, each group presented at least one action plan for a strategic innovation pathway.

## 5.2 Strategic innovation pathways

**Service delivery – extension**

| Ambition | Enhanced public and private extension services promoting farmers' use of quality seed of improved varieties |
|---|---|
| Challenge | • Dearth of extension services<br>• Lack of capacity of the few existing extension officers |
| Strategic innovation pathway | 1. Establish a communication pathway for feedback for research outputs<br>2. Establish a strong linkage between research organizations, seed companies and farmers (training; exposure/exchange visits)<br>3. Seed companies to create very strong extension units to reach farmers (coach and train; design, pilot and scale innovations; exposure/exchange visits)<br>4. Develop public-private extension networks for service delivery (training; coaching; design, pilot and scale innovations<br>5. Demonstrations of quality seed and improved varieties (trainings, demonstration plots and farmers business schools) |
| Stakeholders | • Seed companies<br>• Agricultural Development Programmes (ADPs)<br>• Private extension outfits<br>• Farmers<br>• National Agricultural Extension and Research Liaison Services (NAERS)/National Agricultural Research Institutes (NARIs)/Transfer of Technology (ToT) Units<br>• NASC |
| Sustainability | • Market has been developed for the priority commodities to draw farmers demand and capacity to pay for services |
| 5-year horizon | • Private sector drives extension |

## Service delivery – variety development

| **Ambition** | **Enhanced public capacity for variety development with functional research/farmer/market linkages** |
|---|---|
| Challenge | • Inadequate number of breeders<br>• Limited capacity of breeders<br>• Lack of infrastructure and facilities for variety development<br>• Lack of commitment for the continuous funding of variety development |
| Strategic innovation pathway | 1. Enhance enforcement of laws and regulations for variety development and protection of seed companies involved in variety development (studies, support development and enforcement; foster public-private partnership (PPP) collaboration)<br>2. Co-creation of a space for variety development (e.g. through start-up grants; foster PPP collaboration)<br>3. Support infrastructural development for variety development (e.g. through studies, start-up grants; foster PPP collaboration)<br>4. Establish research tax fund (studies, advocacy, support reform)<br>5. Develop and implement tax breaks for investors in variety development (studies, advocacy, support reform) |
| Stakeholders | • FMARD & Federal Ministry of Finance<br>• NARIs and universities<br>• Variety release committee<br>• NASC & NAQS<br>• Seed companies<br>• Banks<br>• Farmers |
| Sustainability | NARIs, universities and seed companies gain revenues for variety development and are able to re-invest such resources; they have a functioning variety development system that combines public and private funding, and has a proper monitoring and evaluation (M&E) system in place |

## Seed production systems – seed data

| **Ambition** | **Seed companies and other stakeholders have access to accurate industry/market information to inform proper production planning** |
|---|---|
| Challenge | • Limited capacity to capture and manage data on seed sector related logistics, manpower, resources and technology<br>• Limited capacity to capture data from informal seed systems<br>• Absence of quality standards for and information on orphan crops<br>• Absence of data and standards for RTBs<br>• High level of counterfeit seed<br>• No record keeping of seed sector<br>• Data available are unreliable |
| Strategic innovation pathway | 1. Capacity building in data capturing, record keeping and management<br>2. Improve the use of technology in data management<br>3. Establish a robust data portal of international standard accessible by all stakeholders<br>4. Formation of collaborative clusters for record keeping and management<br>5. Development of quality standards for orphan crops |
| Stakeholders | • FMARD<br>• National Bureau of Statistics<br>• NASC and National Centre for Genetic Resources and Biotechnology (NACGRAB)<br>• Research institutes and universities<br>• Companies operating in Information and Communication Technology (ICT)<br>• NGOs<br>• Seed companies<br>• Farmers |
| Sustainability | • Central data bank accessible to all stakeholders on a platform<br>• Dedicated resources for yearly collection and update<br>• Policy supporting implementation<br>• Seed production should be seen as business |
| 2-year horizon | Available, accessible and reliable seed data for decision-making & income generation for NASC; Business model available and implemented |

### Seed market development – tackling counterfeiting

| **Ambition** | **Reduced engagement of agro-dealers and seed companies in the marketing of fake seed and increased farmers' trust in agro-dealers and seed companies** |
|---|---|
| Challenge | • Counterfeit seeds are present significantly in the market<br>• Disincentives to counterfeiting are not working<br>• Packing practices/labelling favour counterfeiting<br>• Seed companies and others include bad quality seed<br>• Illegal entrance of seed into the country |
| Strategic innovation pathway | 1. Design, pilot and scale traceability innovation using ICT<br>2. Enhance public awareness and education of stakeholders and farmers through PPPs<br>3. Enforce penalties and sanctions through short-term training of regulators and inspectors<br>4. Enhance standardization of packaging (degradable) supported by studies within NASC and NAQS<br>5. Support institutional reform particularly within SEEDAN<br>6. Create awareness and target business behaviour of seed companies, market associations and agro-dealers, and farmer associations<br>7. Support enforcement of regulations by NASC and legal system |
| Stakeholders | • NASC & NAQS<br>• SEEDAN<br>• Policy and legal system<br>• Seed companies<br>• Market associations<br>• Agro-dealers<br>• Extension officers<br>• Farmers<br>• Students<br>• Media |
| Catalyst | NASC |

**Seed market development – marketing & promotion by companies; and institutional markets**

| | |
|---|---|
| **Ambitions** | • **Seed companies invest in marketing and promotion**<br>• **Reduced distortion of the functioning of seed markets due to reduced interventions by institutional buyers** |
| Challenge | • Limited adoption of quality seed by farmers<br>• Farmers have low purchasing power<br>• Farmers have low confidence in seeds and in the market<br>• Limited extension on quality seed to farmers |
| Strategic innovation pathway | 1. Partner dialogue with institutions to reduce institutional interventions<br>2. Partner dialogue to explore pathways that enable private sector investors' return on investment in the seed sector<br>3. Conduct cost analysis of improved varieties<br>4. Include cost analysis in demo trials<br>5. Nationwide and effective demonstration trials<br>6. Create financing scheme between farmers, agro-dealers and seed companies (including subsidized loans, not grants)<br>7. NASC to compile and share a list of accredited seed companies with farmers to ensure access to quality seed<br>8. Design, piloting and scaling appropriate designs for the packaging and labelling<br>9. Scaling demos for promoting quality seed of hybrid varieties<br>10. NASC with companies and MPedigree in a PPP to tackle counterfeiting<br>11. Training of companies on market strategies and awareness creation<br>12. Combination of radio and social media adverts for both current and new generation farmers<br>13. Distribution of seed samples with follow-up and tracking<br>14. Public enlightenment campaigns to raise farmers' awareness (animations, videos, etc)<br>15. Partner with National Youth Service Crops (NYSC) for corpers to work as Extension agents with public and private organizations (salary incl in monthly allowance) |
| Stakeholders | • FMARD<br>• NASC<br>• NYSC<br>• Seed companies<br>• Agro-dealers<br>• Farmer groups |
| Catalyst | Seed companies |
| Sustainability | • Ensure adequate balance between seed quality of improved varieties and price<br>• Ensure availability of data for seed companies marketing plans<br>• Contracting some government activities to private organizations |

### Revenue generation & re-investment – financial products & services

| **Ambition** | **Available and tailored soft loans, financial products and services for seed companies and seed production & marketing operations** |
|---|---|
| Challenge | Seed companies and producers are not eligible for financial services due to their business management practices (business plan, finances). Financial institutions (e.g. commercial banks in the agricultural sector) have no knowledge of the seed sector, they have no tailored services. Multilateral financial institutions have no knowledge of the seed sector, thus are not active in developing tailored investments through commercial banks. |
| Strategic innovation pathway | 1. Assess the current market for seed sector targeted financial products, including financial assessment of the entire sector, seed companies and producers, and opportunities for commercial banks and financial institutions<br>2. Engage in capacity building of seed companies and producers, e.g. make sure in business planning, legal, finance and recordkeeping, they meet requirements<br>3. Develop scenarios and opportunities, include potential products and markets<br>4. Engage in advocacy among financial institutions, banks and government on the opportunities<br>5. Develop a structure to assess company/producer eligibility<br>6. Develop and tailor auditing systems to the seed sector<br>7. Explore and identify a financial institution to engage as guarantee for tailored products and services<br>8. Develop a partnership between a financial institution, commercial bank and seed sector stakeholder in developing a platform with financial services and products |
| Stakeholders | • Seed companies<br>• Seed producers<br>• Commercial bank(s) with a profile in the agricultural sector<br>• Auditing company with a profile in the agricultural sector<br>• FMARD/Agribusiness Department<br>• Federal Ministry of Finance/Central Bank of Nigeria<br>• International financial institutions, such as the International Finance Corporation (IFC) of the World Bank Group, Islamic Corporation for the Development of the Private Sector (ICD) of the Islamic Development Bank (IsDB) Group |
| Catalyst | Consulting firm with knowledge of both the seed and financial sector |
| Sustainability | Financial services and products are tailored to seed sector, they are run by commercial banks using conventional financial means available through multilateral financial institutions and supported by the government and used by private companies and producers |
| 5 year horizon | • At least one commercial bank operating in the agricultural sector offers tailored or adapted financial products and services to seed companies and producers<br>• At least five seed companies use tailored financial products and services<br>• At least 50 seed producers use tailored financial products and services |

## Revenue generation & re-investment – quality assurance

| Ambition | Sustainable financial structure of quality assurance based on service delivery and thereby being more efficient and effective |
|---|---|
| Challenge | The finance of quality assurance by NASC is based on government budget. Seed companies- and producers pay for quality assurance services where there is no direct link with the quality of the NASC services provided; consequently, service provision is not efficient and effective. |
| Strategic innovation pathway | 1. Study: assess of the impact on quality assurance and the sector of the current financial model of NASC<br>2. Study: assess within the NASC Act (2019) and larger structure of government financing what opportunities for reform of the financial structure of quality assurance exist<br>3. Study: assess accreditation and third party quality assurance, their financial models and ways it contributes to potential solutions<br>4. Options: explore through a study and country visit what financial models are used in other countries (e.g. Kenya, Zambia)<br>5. Design: use a multi-stakeholder process to formulate options for the reform of quality assurance financing<br>6. Policy framework: elaborate with FMARD and NASC a framework for piloting a new model<br>7. Pilot: elaborate and implement a gradual process of transition through piloting new financial model within one or few crops<br>8. Review: assess lessons learnt from the pilot, design mainstreaming and elaborate policy requirements<br>9. Operationalization: NASC and stakeholders implement the new structure |
| Stakeholders | • FMARD<br>• NASC<br>• Private seed companies<br>• Seed producers and their organizations |
| Catalyst | Strategy consulting firm |
| Sustainability | Gradual transition of NASC quality assurance services covered by national budget to a system where clients (seed companies and producers) increasingly pay NASC directly for the services, and NASC has the autonomy to structure its services and operations for quality assurance based on that revenue stream and even come to re-investment in the services increasing its effectiveness and efficiency |
| 5 year horizon | • Reform has been concluded in which NASC financing for its quality assurance services for 50% is based on direct renumeration for its services<br>• Seed companies and producers producing seed directly pay to NASC for its services |

## Sector coordination – seed sector strategy

| Ambition | FMARD addresses seed aspects within its value chain structure and/or engages in cross-crop value chains |
|---|---|
| Challenge | No seed sector strategy document is available, yet; it is required to feed into the APP |
| Strategic innovation pathway | 1. Organized stakeholder workshop to contribute to the strategy (multi-stakeholder workshop being part of the seed sector review)<br>2. Provide a platform that will allow the stakeholders to make input into the policy formulation process – like indicating needs and challenges (FGDs and expert consultations part of the review)<br>3. Finalize and clear road map document and share with FMARD (technical advisor to Minister)<br>4. Create buy-in from FMARD policy makers<br>5. Insert seed strategy into Agricultural Sector Policy Framework for next four years<br>6. Involve directors through 3 research institutes (Institute for Agricultural Research of Ahmandu Bello University (ABU/IAR), National Animal Research Institute (NAPRI), and National Agricultural Extension and Research Liaison Service (NAERLS), directors of core departments (PPCD, FDA, FDISS) and project coordinating unit<br>7. Dissemination of the strategy for feedback and sharing |
| Stakeholders | • FMARD and states<br>• NASC<br>• SEEDAN<br>• Development partners (support and advocacy) |
| Catalyst | Partners/facilitator from outside the system in close collaboration with key stakeholders |

### Seed sector regulation & management – plant variety protection

| **Ambition** | **Plant variety protection bill is implemented supporting private sector investment** |
|---|---|
| Challenge | PVP legislation does not yet exist; when passed, it requires implementation in terms of institutional and regulatory structures and processes |
| Strategic innovation pathway | 1. Engage in PVP advocacy targeting legislators and other stakeholders<br>2. Assess opportunities to separate legislation for PVP from other seed aspects<br>3. Explore ways to address various crops within PVP; where UPOV 1991 is a generic structure for all crops<br>4. Engage in awareness to secure stakeholder and public buy-in (through PPP)<br>5. Organize roundtables on PVP with legislators<br>6. Set-up office and infrastructure to operationalize PVP (coaching)<br>7. Engage in training for DUS (Distinctness, Uniformity and Stability) testing of staff of responsible organizations<br>8. Facilitate exchange visits with countries with PVP in place relevant to Nigeria (e.g. Vietnam, Kenya and South Africa)<br>9. Short-term training of stakeholders for implementing PVP |
| Stakeholders | • Federal ministries (Agriculture, Justice, Foreign Affairs)<br>• National assembly<br>• SEEDAN<br>• NASC<br>• Research centers of the Consultative Group on International Agricultural Research (CGIAR)<br>• NARI's and universities<br>• Private sector<br>• UPOV, African Regional Intellectual Property Organization (ARIPO), African Organization for Intellectual Property (OAPI), Groupement National Interprofessional des Semences et Plants (GNIS, France), Plantum<br>• Farmer associations<br>• Media |
| Catalyst | NASC |
| 5 year horizon | • Number of PVP applications coming in and being rewarded<br>• Amount of revenue generated to variety development in NARIs, universities and CGIAR and seed companies engaged in variety development<br>• Impact studies assess the impact on improved varieties available to farmers including revenue generation/re-investment in variety development |

# 6 Next steps

The consulting team shared the next steps in the concluding session. It will compile a workshop report and use the assessment as well as the results of the workshop for the elaboration of the National Seed Road Map. It will run a consultation with workshop participants on the National Seed Road Map document in the months of December up till January, before it will submit the final draft with NASC, SEEDAN and the Embassy of the Kingdom of the Netherlands for its final endorsement.

# 7 Workshop programme

| Duration | | Description |
|---|---|---|
| 08h30 | 09h00 | Registration |
| 09h00 | 09h30 | Welcome and opening remarks<br>• Welcome remarks<br>Mr. Folarin Okelola, Special Advisor to DG, National Agricultural Seed Council<br>• Welcome remarks<br>Dr. Johnson Onyibe, Technical Advisor Seed Entrepreneurs Association of Nigeria<br>• Workshop opening<br>Mr. Bram Wits, Regional Agricultural Counsellor for West Africa, Embassy of the Kingdom of the Netherlands |
| 09h30 | 09h45 | Workshop introduction<br>• Participants<br>• Process |
| 9h45 | 10h30 | Step 1: Briefing on seed sector assessment<br>*Marja Thijssen & Falaq Tidjani*<br>• Presentation<br>• Q&A |
| 10h30 | 11h00 | Coffee and tea break |
| 11h00 | 11h15 | Step 2: Ambitions in the seed road map - introduction |
| 11h15 | 11h45 | Step 2a: Crop group based prioritization of ambitions<br>• Maize (*Walter de Boef*)<br>• RTBs (*Falaq Tidjani*)<br>• Rice, legumes & small grains (*Marja Thijssen*)<br>• Vegetables (*Hadizi Yaro*) |
| 11h45 | 12h15 | Step 2b: Stakeholder group based prioritization of ambitions<br>• FMARD (*Walter de Boef*)<br>• NASC and NSQS (*Ekum Ojogu*)<br>• Private sector (*Hadiza Yaro)*<br>• Research and knowledge organizations (*Marja Thijssen*)<br>• Farmer organizations (*Falaq Tidjani*) |
| 12h15 | 13h30 | Lunch |
| 13h30 | 13h45 | Step 3: Action Plans for Strategic Innovation Pathways - introduction |
| 13h45 | 15h30 | Step 3: Action Plan Groups<br>• Service provision (*Brian Oduh and Ekum Ojogu*)<br>• Production systems (*Hadiza Yaro*)<br>• Seed marketing development (*Falaq Tidjani*)<br>• Revenue generation and re-investment (*Walter de Boef*)<br>• Seed sector coordination (*Marja Thijssen*)<br>• Seed sector regulation and management (*Anke van den Hurk*) |
| 15h30 | 16h00 | Concluding session<br>• Plenary briefing of six action plan groups<br>• Next steps<br>• Closing |

# 8 Participants and facilitation team

## 8.1 Participants

| Name | Organization | Position | Type |
|---|---|---|---|
| Mr. Barnabas Akaazua | AfriAgri Products | Field officer | Private |
| Mr. Umar Idris | AfriAgri Products | Field officer | Private |
| Ms. Perpetual Nwali Nkechi | All Farmers Association of Nigeria | Trainer/Gender Rights Advocate | Private |
| Eng. Yakubu Stephen | Da-Allgreen | CEO | Private |
| Ms. Ruth Ardzard | East-West Seed Knowledge Transfer | Manager | Private |
| Mr. Bram Wits | Embassy of the Netherlands | Regional Agricultural Counsellor for West Africa | Public |
| Dr. Perpetual Ushiaon | Federal Ministry of Agriculture and Rural Development | Desk Officer Yam Value Chain | Public |
| Mr. Adegoke Austine Adedamola | Federal Ministry of Agriculture and Rural Development | Potato Desk Officer | Public |
| Mr. Lomak Al Yakubu | Fruits and Vegies | Field officer | Private |
| Mr. Wuyep Ponchang | Fruits and Vegies | Resource Person | Private |
| Dr. Arunah Uthman Lucky | Institute For Agricultural Research/ABU | Head of Horticultural Programme | Public |
| Dr. Oyekunle Muhyideen | Institute of Agricultural Research/ABU | Maize Breeder | Public |
| Dr. Beatrice Aighewi | International Institute of Tropical Agriculture/CGIAR | Seed System Specialist | INGO |
| Mr Obaje John Abah | Nigeria Agricultural Quarantine Service | Director/Import Officer | Public |
| Mr. Charles Onwuka | National Agricultural Seed Council | SAO | Public |
| Mr. Folarin Okelola | National Agricultural Seed Council | Special Advisor to DG | Public |
| Dr. AbduRafiu Ayoola Monsur | National Horticultural Research Institute | Chief Research Officer | Public |
| Dr. Danbaba Anthony | National Root Crops Research Institute | Potato Breeder | Public |
| Ms. Anke van den Hurk | Plantum | Deputy Director | Private |
| Mr. Okafor Daniel | Potato Farmers Association | National President | Private |
| Mr. Shipi Emmanuel | Potato Farmers Association | Chairman | Civil society |
| Mr. Kabir Ademoh | Seed 4 Change | Project Consultant for Seeds for Change | INGO |
| Dr. Johnson Onyibe | Seed Entrepreneurs Association of Nigeria | Technical Advisor | Private |
| Mr. Ishaya Marcus | Seed Entrepreneurs Association of Nigeria (Sia Farms) | Member (Operations Manager) | Private |
| Mr. Emmanuel Atanyi | TechniSeed | Agronomist | Private |
| Mr. Okolo Samson | Value Seeds | Business Development Officer | Private |
| Ms. Mercy Effiong | Value Seeds | Marketing/Business Development Officer | Private |
| Ms. Wandie Kazeem | Wandie Media | CEO | Private |

## 8.2 Facilitation team

| Name | Organization | Position | Type |
|---|---|---|---|
| Ms. Hadiza Yaro | East-West Seed Company | Marketing manager | Private |
| Mr. Brian Udoh | Embassy of the Netherlands | Agricultural Policy Officer | Public |
| Mr. Ekum Ojogu | National Agricultural Seeds Council | Agric Devt. Expert/ACAO | Public |
| Ms. Ndidi Nwuneli | Sahel Consulting Agriculture and Nutrition | Managing Partner | Private |
| Ms. Falaq Tidjani | Sahel Consulting Agriculture and Nutrition | Manager | Private |
| Dr. Marja Thijssen | Wageningen University & Research | Project Manager | Public |
| Dr. Walter De Boef | Wageningen University & Research | Consultant | Private |

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Wageningen Centre for Development Innovation supports value creation by strengthening capacities for sustainable development. As the international expertise and capacity building institute of Wageningen University & Research we bring knowledge into action, with the aim to explore the potential of nature to improve the quality of life. With approximately 30 locations, 5,000 members of staff and 12,000 students, Wageningen University & Research is a world leader in its domain. An integral way of working, and cooperation between the exact sciences and the technological and social disciplines are key to its approach.

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