



A STRATEGIC PLAN FOR THE NATIONAL AGRICULTURAL SEEDS COUNCIL (NASC)

2020 to 2024

September 2019

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II. List of Acronyms

AAR	After Action Reviews
ADP	Agricultural Development Programme
AESON	Agricultural Extension Society of Nigeria
AfDB	African Development Bank
AGRA	Alliance for Green Revolution in Africa
AGRF	African Green Revolution Forum
APSA	The Asian and Pacific Seed Association
ARIA	Agricultural Research Institute of Afghanistan
BASICS	Building an Economically Sustainable, Integrated Seed System for Cassava
BMGF	Bill and Melinda Gates Foundation
CAEP	Communicating for Agriculture Education Program
CBN	Central Bank of Nigeria
CBSE	Community-Based Seed Entities
CIAT	International Centre for Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Centre
CNSTA	China National Seed Trade Association
CoESI	Centre of Excellence for Seed Industry
COPE	Centre of Phytosanitary Excellence
CRI	Crop Research Institute
DFIA	Department of Surveillance of Agricultural Inputs
EMBRAPA	Brazilian Agricultural Research Corporation
ERP	Enterprise Resource Planning
EU	European Union
FAO	Food and Agriculture Organization
FMARD	Federal Ministry of Agriculture and Rural Development
GAP	Good Agronomic Practices
GDP	Gross Domestic Product
GOT	Grow-Out-Tests
KEPHIS	Kenyan Plant Health Inspectorate Services
KMS	Knowledge Management System
ICAR	Indian Council for Agricultural Research
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFAD	International Fund for Agricultural Development
IITA	International Institute for Tropical Agriculture
IPPC	International Plant Protection Convention
ISF	International Seed Federation
ISTA	International Seed Testing Association
LBS	Lagos Business School
M&E	Monitoring and Evaluation
MDAs	Ministries, Departments and Agencies
MIT	Massachusetts Institute of Technology
MOU	Memorandum of Understanding
NAAE	National Association of Agricultural Economists

NAQS	Nigerian Agricultural Quarantine Service
NASC	National Agricultural Seeds Council
NCS	Nigerian Customs Service
NGO	Non-Governmental Organization
NVRC	National Varietal Release Committee
NYSC	National Youths Service Corp
ODK	Open Data Kit
OECD	Organization for Economic Cooperation and Development
PPRSD	Plant Protection and Regulatory Services Directorate
PSCE	Private Seed Certification Entities
SAH	Semi-Autotrophic Hydroponics
SANSOR	South African National Seed Organization
SEEDPAG	Seed Producers Association of Ghana
SPCD	Seed And planting Material Certification Directorate
SST	Specific Skills Training
UPOV	International Union for the Protection of New Varieties of Plants
USAID	United States Agency for International Development
USSD	Unstructured Supplementary Service Data
WTO	World Trade Organization
YIIFSWA	Yam Improvement for Income and Food Security in West-Africa
ZARI	Zambia Agricultural Research Institute
ZASTA	Zambia Seed Trade Association

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V. Executive Summary

Sahel Consulting was engaged by the leadership of the National Agricultural Seeds Council (NASC) in June 2019 to craft a five-year strategic plan to guide the organization's growth and development between 2020 and 2024. The team conducted an in-depth assessment of NASC's mandate as outlined by the Seed Act, engaged with the NASC team, stakeholders in the seed industry in Nigeria, and seed regulators in other countries.

An analysis of the current state of NASC revealed a range of strengths, weaknesses, opportunities and threats, as well as critical improvement opportunities.

The team generated a revised mission statement for NASC - *to enable a credible, dynamic, competitive and relevant seed industry, which provides healthy and high-quality planting materials for Nigerian farmers and for export.* NASC's revised vision statement is *to be recognized as Africa's leading seed regulator, that fosters the emergence of a globally competitive seed sector, with planting material that is available, accessible and affordable for all farmers.'*

The strategy outlined in this document delivers on the vision and mission statements through three core strategic objectives: (1) to drive sustainable demand for quality seeds through enhanced service delivery by NASC leveraging technology, the use of third-party certification agents, training, knowledge management, strategic communications and partnerships; (2) to increase NASC's financial sustainability by increasing its internally generated revenue, improving its budgeting and financial management systems and deepening its partnerships with development organizations; and (3) to increase NASC's operational effectiveness by improving its human resources strategy, streamlining its departments and investing in training and staff development. The plan outlines 10 key implementation strategies, with key activities, required resources, key performance indicators, timelines and suggested departments to drive execution.

If fully implemented, the strategy is expected to lead to the following results for NASC and the Nigerian seed system by 2024:

- Timely and cost-efficient certification processes, leveraging technology to reduce the process for new seed company registration and licensing from 45 days to 15 days and yearly license renewal from 14 days to 5 days
- Increased availability of improved seed varieties across priority value chains and adequate training leading to a 40% increase in adoption among farmers
- Dramatic reduction in the total volume of adulterated seeds in Nigeria because of an increase in market inspection activities by 80% per region by 2024
- Strong partnerships between NASC and industry stakeholders making NASC the point of reference for information through its data bank and demonstration trials
- Strengthened capacity of key industry stakeholders through NASC's mandatory and voluntary annual capacity building support
- Diversified revenue streams with income generating services contributing up to 15% of NASC's budgetary allocation and improved budgetary management leading to reduced operational cost
- International recognition and awards for NASC's efforts in transforming and strengthening the seed industry in Nigeria and its influence on other seed councils in Africa
- Strengthened capacity of NASC staff through consistent departmental annual trainings

The strategy will require an estimated ₦1,826,068,150 billion Naira (\$5,967,543¹ USD) in additional funding over the next 5 years. The team has developed a detailed implementation plan which outlines the key activities for NASC over the next two years.

This strategic plan will position NASC as the coordinating and supervisory body of the seed industry, lead to dramatically improved adoption of high-quality seeds and crop yields for Nigerian farmers, and support the development of Nigeria's seed sector into one that is internationally competitive.

¹ Current Official FX rate at 306 Naira to 1 USD

VI. Mandate and Methodology

Mandate

The National Agricultural Seeds Council (NASC) is the agency of government responsible for coordinating and regulating the production, marketing, trade and use of seeds in Nigeria.

To strengthen its capacity to fulfil its role, NASC engaged Sahel Consulting Agriculture & Nutrition Limited to develop a five-year institutional strategic plan for the organization.

According to the project's Terms of Reference (ToR), Sahel Consulting was engaged to:

- *Conduct an organizational purpose-alignment exercise to evaluate NASC's vision and mission statements, and core values and develop clear objectives that amplifies what ultimate success implies as a national seed industry regulator*
- *Conduct a detailed SWOT analysis and capacity needs assessment to identify the gaps existing within NASC and other external factors limiting the council from achieving its objectives*
- *Conduct a benchmarking analysis to identify successful national seed programs and regulators globally to gain insights on effective policies and models that can be adapted for NASC*
- *Develop a robust five-year strategic plan document that would guide NASC in executing its responsibility through efficient service delivery*
- *Identify cost centres and develop evidence-based investment and funding strategies for implementation based on the vision of success over the next five years.*
- *Develop a two-year implementation plan for NASC's five-year strategic plan.*

Methodology

The Sahel Consulting team adopted a multi-pronged approach to develop the strategic plan. Specifically, the team engaged in seven key steps:

Step 1: Conducted exhaustive desk research to ensure in-depth understanding of the current state of NASC, and analysed international best practices in seed industry regulation to inform recommendations

In this phase, the Sahel team reviewed all in-house and external documents and reports related to the seed industry and the regulatory environment for seeds in Nigeria. The team engaged in a comprehensive review of reports and publications from several sources including NASC, national and international agricultural research institutes, federal and state ministries of agriculture, development organizations, and think tanks related to the seed sector. The team also reviewed information from international seed regulatory bodies to understand best practices in seed industry regulation.

Sahel conducted desk research to:

1. Review NASC's organizational structure, institutional capacity and regulatory mandate using a SWOT analysis to determine the strengths, weaknesses, opportunities and threats, and how they impact the ability of the organization to transform the Nigerian seed industry.
2. Review NASC's existing operational approach to seed companies' accreditation, field inspection, seed testing and quality control, and seed certification to better

understand its mandate, identify bottlenecks and entry points for potential interventions.

3. Identify the key stakeholders in the seed industry, their roles and capacities, major challenges, gaps and opportunities for improvement.
4. Assess international best practices in seed industry regulation to highlight key success factors and outline key insights that NASC can leverage.

Step 2: Embarked on field visits to conduct deep dive interviews with key stakeholders to generate in-depth insights on the role of NASC in the seed industry

Sahel engaged selected stakeholders through interviews to gather data on current gaps in the role of NASC as a regulator of the Nigerian seed industry. Key stakeholders such as government agencies, seed companies, research institutes, policy makers, development partners, NGOs, ADPs, and farmer associations were engaged via face-to-face interviews in select states and phone calls using tailored interview guides.

Step 3: Analysed field research results

Information gathered from steps (1) and (2) was synthesized and analysed to clearly define NASC's current situation, develop strategies to address the major gaps and provide a clear growth path for the organization.

The Sahel team:

- Conducted an organisational purpose-alignment exercise to evaluate NASC's vision and mission statements, and core values and develop clear objectives that amplify its success.
- Conducted a comprehensive capacity needs assessment to identify the gaps existing within NASC and other external factors limiting the council from achieving its objectives.
- Suggested guiding principles for key strategies that will address key areas of NASC's operations.
- Developed a financial strategy that identifies critical cost centres and presents investment strategies for NASC to utilize for implementing its five-year plan.

Step 5: Organized an internal strategic planning meeting with NASC

Using a PowerPoint presentation developed as part of the project, the team held an internal strategic planning workshop with the leadership of NASC to present the results of its activities on organizational purpose alignment, capacity needs assessment and strategic plan. During the internal workshop, the team presented strategic options to NASC and highlighted the key guiding principles for developing viable operating models across the functional areas of the Council. At the end of the internal workshop, the team shared the presentation on the key components of the five-year strategic plan with NASC and obtained feedback on the most viable strategic options. This informed the development of the five-year strategic plan.

Step 6: Developed the five-year strategic plan and participated in the external stakeholder validation workshop organized by NASC

The team developed a draft of the five-year strategic plan which captured the key insights and feedback from the strategic planning meeting with NASC. A two-year implementation plan was also developed and embedded in the five-year strategic plan report for NASC. The

implementation plan articulated a clear roadmap for implementing the first two years of the five-year strategic plan.

The team also developed a PowerPoint presentation on the key strategic objectives which NASC presented to industry stakeholders for validation during a workshop in Abuja. Based on the feedback from stakeholders during the validation workshop, the team revised the five-year strategic plan.

Step 7: Finalized strategic plan

Following the stakeholder validation workshop, the Sahel team finalized the five-year strategic plan for NASC. This report captured the key insights and feedback from the stakeholder validation workshop.

VII. History and Mandate of NASC

In 2007, NASC evolved from the National Seed Service (NSS) – a body established with technical assistance from the Food and Agriculture Organisation (FAO) in 1975, under the Federal Ministry of Agriculture and Natural Resources – and was responsible for the development, certification, and quality control of seeds. Following the enactment of the Nigeria Seed Law, NASC was established to take over NSS functions and expand the scope of administration of the seed industry. The National Agricultural Seeds Council Act 2019 establishes NASC to promote and stimulate the development of a dependable seed industry, protect farmers from the sale of poor-quality seeds, facilitate the production and marketing of high quality seeds in Nigeria, and provide legal backing for official testing, certification, sale, importation and use of seed.

According to NASC's Seed Act 2019, the key functions of NASC are to:

- *Analyse and formulate programmes, policies and actions regarding seed development and the seed industry, including research on issues relating to seed testing, registration, release, production, marketing, distribution, certification, quality control, supply and use of seeds in Nigeria, importation and exportation of seeds;*
- *Design improved management system and procedure relating to the administration of seed activity;*
- *Implement official quality control and certification of seeds, and facilitate enrolment of any approved private body in seed certification programmes;*
- *Advise the Federal Government on the organization, management and financing of seed programmes;*
- *Approve seed standards;*
- *Advise the national research system on the changing pattern of seed demand and farmers' needs;*
- *Plan, monitor and evaluate the achievements of the national seed system and recommend improvements thereto;*
- *Encourage the establishment in Nigeria of seed companies for the purpose of carrying out research, production, processing and marketing of seed;*
- *Issue licenses and permits under the Seed Act;*
- *Approve policies and strategies to protect small seed producers, local varieties and promote quality seed production;*
- *Regulate the seed industry in Nigeria;*
- *Represent Nigeria and work closely with the West African Committee on Seeds for the development of the seed sector;*
- *Establish and manage a seed sector support fund;*
- *Perform such other related functions as may be required of the Council subject to the approval of the Board.*

NASC is led by a Governing Board and run by a Director General who oversees its activities. Figure 1 shows the current organogram of NASC.

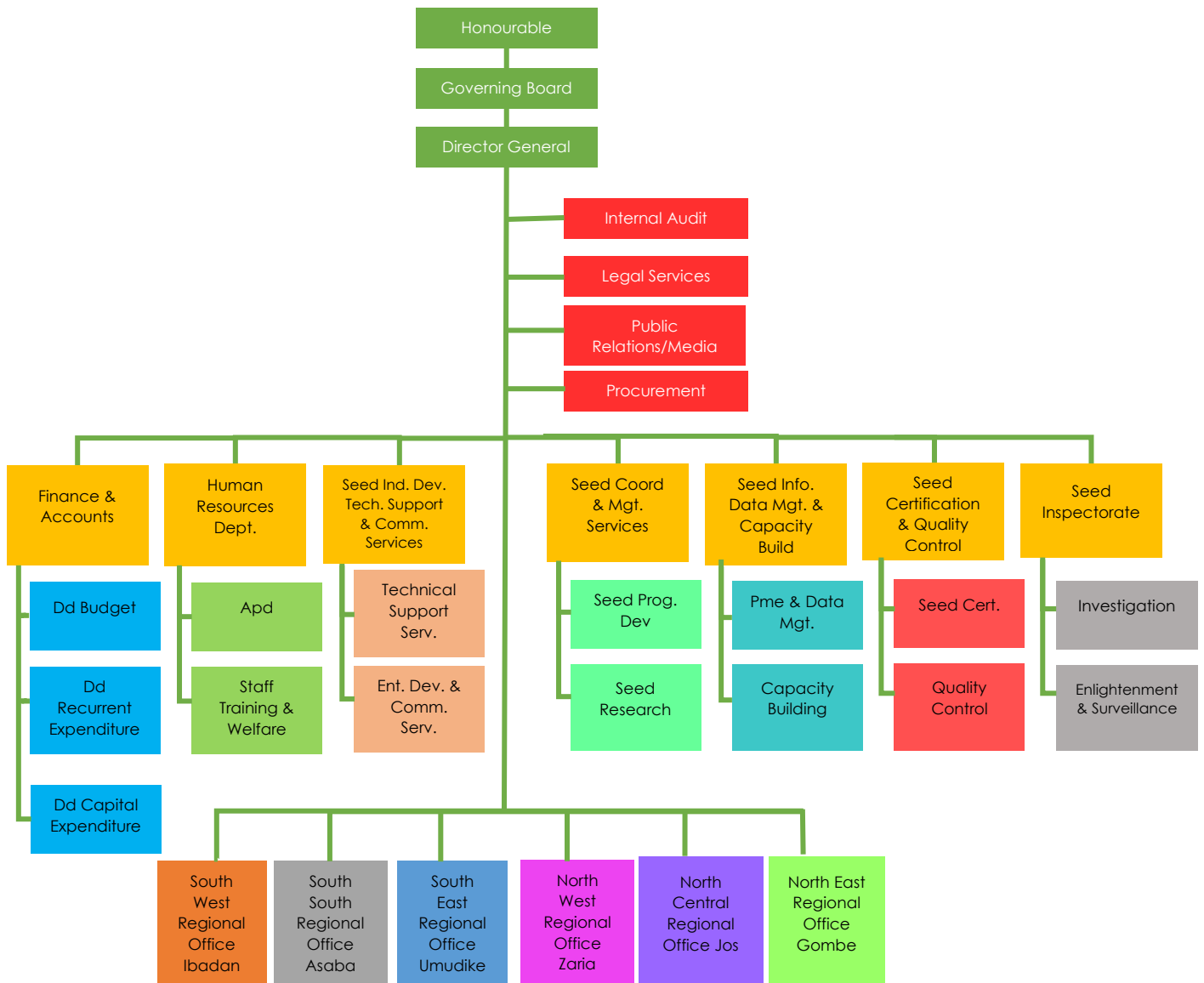


Figure 1: Organizational Structure of NASC

NASC currently offers a range of services across departments:

Seed Certification and Quality Control Department:

The current services of this department include:

1. **Seed company registration and licensing:** NASC registers new seed companies and issues licenses on a yearly basis.
 - a. **New license issuance:** Licenses are issued to two broad categories of seed producers:
 - i. **New seed companies:** NASC registers two categories of seed companies 1) companies involved in the production, marketing and distribution of seeds and 2) companies focused on marketing and distribution of seeds in Nigeria. An initial

provisional license is issued when a prospective seed producer provides the required documentation² and passes the onsite and facility assessment.

- ii. **Community-based seed entrepreneurs:** NASC registers and issues licenses to community-based seed entrepreneurs to produce quality seeds. The seed entrepreneurs are not required to register as a business entity.
 - b. **License renewal:** NASC renews licenses annually after a shorter reviewing process of required documentation. License renewal is mandatory for all the actors in the industry.
- 2. Seed certification:** NASC carries out certification of the seeds produced by the categories of registered and licensed seed producers. The following activities are undertaken:
- a. **Outgrower registration:** NASC registers outgrowers of seed companies ahead of every seed production cycle. NASC retrieves the list of outgrowers from the seed companies which includes their respective names, field locations, field size and production history.
 - b. **Field inspection:** NASC inspects seed production fields at least three times - before planting, during growth and before harvesting to ascertain the level of compliance of fields to quality standards. Field inspections are carried out by seed certification officers.
 - c. **Seed testing:** NASC carries out seed testing in its laboratory using seed samples collected from harvested seed lots. Seed certification officers are responsible for collecting and transferring seed samples to the laboratory.
 - i. Seed certification tag issuance: NASC issues paper certification tags to validate the production output/volume of certified seeds. The tags are issued to seed companies based on the volume of certified seed produced.
- 3. Seed import permit issuance:** NASC issues the import clearance and requests for import permit from NAQS. The NASC import clearance specifies the volume, type and class of seed that can be imported under the import permit that will be issued by NAQS.

Seed Information, Data Management and Capacity Building Department

Some key activities of the department include programme development and planning, seed policy development, data management and analysis, M&E of national seed programmes, provision of information, communication and technology support, national and international collaboration, and the seed system nationwide survey.

This department also facilitates training programs to develop the technical capacity of stakeholders in the seed industry. These trainings focus on seed production, marketing and distribution.

Seed Industry Development, Technical Support and Commercial Services Department

The key activities of this department include:

1. **Field demonstration trials and farmers' field days:** NASC carries out demonstration of new and improved seed varieties on farm plots across selected rural communities to increase adoption.
2. **Seed fairs:** NASC partners with industry players such as private seed companies and research institutes to organize seed fairs to promote high-quality seed varieties. Through

² Documentation for seed company registration include Memorandum and Article of Association, Corporate Affairs Commission Certificate, Company Profile, Audited Company Accounts, Bank Reference Letter, Tax Identification Number and Tax Clearance

the fairs, NASC creates institutional linkages and promotes collaboration amongst the various stakeholders.

3. **Capacity building of seed entrepreneurs:** NASC organizes periodic training programs for small and medium seed entrepreneurs as part of its Community Based Seed Enterprise (CBSE) development programme to empower seed entrepreneurs with requisite skills that guarantees the availability of quality seeds in the market and discourages the use of saved seeds by smallholder farmers. NASC provides technical and advisory support to small and medium seed entrepreneurs to establish and scale their businesses. NASC implements these training programmes through partnerships with research institutes and seed experts in universities.

Seed Coordination and Management Services Department

The current activities of this department include:

1. **Industry stakeholder's coordination:** NASC promotes varietal registration and release and serves as the secretariat to the NASC Institutional Biosafety Committee. NASC liaises with agricultural research institutes on the standard and productivity requirements of the seed market.
2. **Seed processing facilities management:** NASC operates and maintains its regional processing and storage facilities. NASC also monitors, evaluates and certifies the facilities owned by private actors to drive quality assurance in the industry. NASC supports the capacity building of seed processors, seed store managers, seed distributors and transporters to adhere to best practices.

NASC is also responsible for national seed demand forecasting and seed production planning in the industry to support efficient and effective seed and crop production in Nigeria.

Seed Inspectorate Department:

The current activities of the department include:

1. **Seed industry surveillance and sensitization:** NASC currently conducts routine surveillance and inspection activities on seed producers and seed sellers to identify and apprehend seed industry violators, uncertified seed peddlers and adulterators. During surveillance activities, NASC organizes sensitization campaigns to educate industry actors on best practices in seed packaging and distribution to maintain the quality of seeds.
2. **Prosecution of offenders:** NASC identifies and investigates illegal seed producers and sellers and registered businesses involved in malpractices. First time offenders are reprimanded and sensitized on best practices while repeat offenders are prosecuted.
3. **Training of seed inspectors:** NASC trains its field inspectors on market regulation and enforcement of industry standards to sanitize the seed market in Nigeria.

VIII. Analysis of NASC's Current State and Opportunities

SWOT Analysis of NASC

<p>Strengths</p> <ul style="list-style-type: none"> • The passage of the new Seed Act strengthens NASC's ability to efficiently regulate the seed industry. • Committed workforce in the headquarters and regional offices. • Regional presence across the six geopolitical zones of Nigeria. • Ability to generate funds from services rendered. • Existing partnerships with development organizations to implement agricultural initiatives. • Existing collaborations with research institutes and commodity associations to implement initiatives focused on seed industry development. 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Overlapping functions between the departments. • Poor documentation and knowledge management processes. • Inadequate infrastructure across offices to support efficient service delivery. • Limited technical capacity of staff. • Inefficient recruitment systems and structures. • Weak partnerships with relevant government agencies such as the Nigeria Customs Service (NCS) and Nigerian Agricultural Quarantine Service (NAQS) to regulate seed importation. • Weak partnerships with international seed bodies.
<p>Opportunities</p> <ul style="list-style-type: none"> • Growing population and the need to increase food production has led to the increased demand for improved varieties of seeds. • Increasing use of technology in agriculture to improve the seed certification process. • Increasing hunger and poverty rates driving greater levels of global funding for agriculture in Nigeria. • The passage of African Continental Free Trade Agreement will enhance seed exportation opportunities from Nigeria. 	<p>Threats</p> <ul style="list-style-type: none"> • External interference in NASC's recruitment process • Weak judicial system frustrating the efforts of NASC to effectively and efficiently prosecute offenders like seed adulterators. • Delayed budget disbursement from FG's Ministry of Finance to NASC • Insecurity caused by the activities of herdsmen across key states in Nigeria are affecting farmer activity • Exposure of Nigeria to several inferior commodities including seeds due to the passage of the African Continental Free Trade Agreement.

Figure 2: SWOT Analysis of NASC

Field interviews conducted as part of the strategic planning process revealed some clear improvement opportunities for the NASC leadership to consider. The following are key areas for improvement:

NASC's service delivery:

- Inadequate infrastructure to drive regulatory efficiency: The available seed laboratories and vehicles across the regional offices are inadequate to support field visits for inspection and certification activities carried out by NASC.
- Limited industry development activities to drive the demand for quality seeds: Despite several seed system interventions by development organizations, there is still relatively low interest in the adoption of high-quality seeds among smallholder farmers.
- Weak stakeholder partnerships: NASC lacks a structured partnership development process which has created a gap in its industry stakeholder relationship management.

NASC's financial sustainability:

- Limited and inefficient funding of NASC's seed project activities: Due to delayed and reduced financial resources from the Federal Government, NASC faces challenges in completely implementing its proposed seed projects for each fiscal year. There is also a capacity gap in the ability of NASC to develop bid-winning proposals which are critical to supplementing its funding base.

NASC's operational effectiveness:

- Slow pace of operations: Seed companies complain that NASC has a slow and inefficient registration and licensing process that results in long waiting periods. In addition, NASC has a poor documentation and reporting system that limits its operational efficiency.
- Inefficient recruitment system to access and engage the best talents: The inconsistent and poorly structured recruitment system utilized by NASC has led to capacity gaps across its operational functions.
- Lack of technical capacity of field officers to drive excellent regulatory services: Field officers lack the required technical knowledge to carry out effective certification activities. The technical gaps were more evident in the certification of higher classes of seeds like breeder and foundation seeds.

IX. Proposed Mission, Vision and Core Values

As part of the strategic planning process, the Sahel and NASC teams reviewed the organization's existing mission and vision statements and crafted new ones that align with the intent, purpose and plans of the organization, as outlined below:

Current Mission Statement

To transform the Nigerian seed system into a leading seed industry in Sub-Saharan Africa worthy of generating foreign exchange, key employer of labour and contributing positively to the country's economy.

Proposed Mission Statement

"To enable a credible, dynamic, competitive and relevant industry which provides healthy and high-quality planting materials for Nigerian farmers and for export."

Current Vision Statement

To build a market-driven seed industry for the production and distribution of high quality and improved planting materials that are available, accessible and affordable to all farmers.

Proposed Vision Statement

"To be recognized as Africa's leading seed regulator, that fosters the emergence of a globally competitive seed sector, with planting material that is available, accessible and affordable for all farmers."

Core Values

The Sahel and NASC teams worked together to develop four preliminary core values, with the acronym "SEED".

- **Synergy:** We partner and/or collaborate with all relevant stakeholders to enable a sustainable and competitive seed ecosystem.
- **Excellence:** We hold ourselves to high standards and our team members accountable to ensure accurate and timely service delivery in every aspect of our operations.
- **Ethical Conduct:** We build trust in the seed industry through our honest and transparent approach to regulating, monitoring and certifying stakeholders in the seed industry.
- **Dynamism:** We leverage on cutting-edge technology and innovative solutions to improve the efficiency and accuracy of our service delivery.

It is important to note that the Board of NASC will review and approve the proposed mission, vision and values before they are formally adopted.

X. Overview of Proposed Strategy

Based on the engagement with key stakeholders within NASC and the industry, the Sahel team has developed three key strategic objectives to guide the organization's operations and focus for the next five years -: (1) to enhance NASC's services to enable sustainable demand for quality seeds, (2) to increase financial sustainability, and (3) to improve internal operating efficiency.

Table 1: Overview of the Proposed Strategies

No	Strategic Objectives	Strategies	Expected Outcomes
1	Enhance NASC's Services to drive Sustainable Demand for quality seeds	1.1: Build an efficient and robust certification system	<ul style="list-style-type: none"> • Time and cost-efficient certification processes are established through the adoption of technologies and outsourced services. • Increased availability of improved seeds and adequate trainings leading to a 40% of farmers in Nigeria adopting improved seed varieties across priority value chains – Roots and Tubers (Cassava & Yam), Grains (Maize, Rice, Soybean Sorghum), vegetable (Amaranths). • The seed inspectorate department ensures that less than 20% of the total seed in the industry is adulterated. • NASC has built a strong network of industry stakeholders and becomes the point of reference for information and capacity building support through its robust mandatory and voluntary training programs.
		1.2: Increase the availability of improved seeds and provide adequate trainings	
		1.3: Strengthen the capacity of stakeholders in the Industry	
		1.4: Build the confidence of industry stakeholders in NASC for seed information in Nigeria and enhance Stakeholder Engagement and Management	
2	Increase Financial Sustainability	2.1: Improve internally generated revenues from income generating services	<ul style="list-style-type: none"> • NASC has clearly defined and competitive registration and licensing fees, the cost of participating in fairs and the cost of published materials.
		2.2: Establish systems to manage NASC's revenues	

		2.3: Partner with development organizations to bridge funding gap and implement seed programmes	<ul style="list-style-type: none"> • NASC has defined the binding terms of the seed fund and signed partnership agreements with relevant stakeholders committed to support the seed funds. • The seed fund is fully functional and has supported the implementation of at least five of the proposed strategies. • NASC has established at least five strategic partnerships with funders for specific seed industry development projects.
3	Increase Operational Effectiveness	3.1: Deploy technology to increase the efficiency and effectiveness of NASC's internal operations	<ul style="list-style-type: none"> • Team members are well trained and actively use the electronic portfolios • Teams can access internal documents electronically • Team members have fully adopted use of google mail, slack, skype and zoom for internal communications • NASC receives at least two (2) international recognitions/awards for its efforts in transforming and strengthening the Nigeria seed ecosystem and its influence on other seed councils in Africa • NASC hires qualified and capable stakeholder relationship managers, IT personnel and crop specific seed certification officers • NASC organizes three (3) career fairs and (2) trainings across each department
		3.2: Streamline the functions of NASC's departments to avoid redundancy and overlapping of activities	
		3.3: Strengthen NASC's internal capability to deliver on its mandate	

Strategic Objective 1: Enhancing NASC's Services to Enable Sustainable Demand

1.1: Build an efficient and robust certification system

NASC's current certification process will be reviewed and streamlined to establish a time and cost-efficient and effective system that covers additional value chains such as fruits, vegetables, roots and tubers. This will require that NASC engages in the following:

Introduce new technologies and innovations to the licencing and certification process: The current process of company registration is conducted manually and takes a period of 45 days and the seed testing process is conducted manually. To improve its efficiency, NASC will introduce various technologies in its processes and widen its scope to non-traditional seed producers. More specifically, NASC will:

- Digitalize the licensing and renewal processes: NASC will introduce an electronic portal on its website to reduce the registration days for new seed entities from 45 to 15 days and for license renewals from 14 to 5 days. NASC will include a payment interface on its registration and licensing portal for fee collection in addition to existing payment options including bank transfers, bank deposits, and cheque deposits. For licence renewals,
 - NASC will revalidate existing seed producers' compliance with stipulated requirements for renewal of licenses. A biennial revalidation test, that will include site inspections, will be conducted to validate seed companies' eligibility for renewal. Licenses will be upgraded or downgraded depending on the outcomes of the test.
- Provide licenses to private companies using innovative seed production technologies: NASC will provide licenses to private companies using innovative technologies such as Semi Autotrophic Hydroponics (SAH), Aeroponics, Hydroponics, for seed production. NASC will develop production standards for alternative seed production technologies for an effective monitoring of the industry. Some major organizations to be included are seed laboratories, conditioners and processing plants.
- Launch and sustain the digitalization of the quality control processes: NASC, through its partnership with mPedigree, will launch the implementation of the electronic seed quality verification system by introducing SEEDCODEX, a smart seed labelling technology that generates a unique code that will be included on the labels of all seed companies' certified seed packages. SEEDCODEX will also provide security features to reduce the adulteration of seeds certified by NASC and enhance seed quality verification.

Outsource Seed Certification to third party stakeholders: NASC will license seed certification to third party entities through two different models.

Model 1:

NASC will identify and partner with private seed certification entities (PSCs) for the certification process of certified seeds. Breeder and foundation seed certification will remain the sole responsibility of NASC's certification officers. The activities of the PSCs will include outgrower registration and field inspection for certification. The PSCs will report to NASC (seed certification department) for verification and validation. The success of the pilot activities will facilitate the roll-out phase across the nation. To implement the third-party certification scheme, NASC and its potential partners will conduct a series of activities.

NASC's roles:

1. Enlist Private Seed Certification Entities (PSCEs): NASC will conduct marketing outreach to attract potential partners to apply for the scheme. NASC will ensure the PSCEs include individuals (women and youth inclusive) and companies. NASC will partner with radio stations to raise broad based awareness who will be drawn to its website for additional information. It will also send recruiting messages and communiques to current industry partners.
2. Organize induction tests for the PSCEs: NASC will provide a paid induction training for the interested PSCEs. Following the training, the PSCEs will take an induction test to select the top performers. NASC will consider a re-sit option for PSCEs that failed the test. Successful PSCE applicants will be mandated to sign a code of conduct agreement to guide against misconduct and unethical practices.
3. License private seed certification entities (PSCEs): NASC will screen, register and license PSCEs to carry out third-party seed certification between 2020-2021. PSCEs will include private companies and individuals engaged in agriculture.
 - a. The potential PSCEs will submit proposals that will be reviewed by NASC to assess their technical, human resources and potential area of coverage.
 - b. Selected PSCEs will be charged an annual licensing fee that covers registration, licensing and other statutory charges.
4. Build the capacity and conduct an induction of PSCEs:
 - a. Develop and implement a robust training program for the PSCEs.
 - b. Ensure that standardized procedures, systems and structures are established to ensure efficient service delivery by the PSCEs.
5. Roll-out the scheme: The model will be introduced in phases as follows:
 - a. 1st phase: Between 2020 and 2021, NASC will pilot a third-party certification scheme in 2-3 major seed producing states. Focusing on two priority crops, NASC will test and validate the model for potential scaling.
 - b. 2nd phase: Between 2022 and 2023, NASC will build on the success of the pilot phase and extend third-party certification to additional states - 8 to 10 seed producing states.
 - c. 3rd phase: In 2024, NASC will scale the third-party certification to 15 - 20 states. During the 3rd phase, NASC will also introduce hybrid maize certification into the scheme leveraging on the technical expertise developed between 2019 and 2022.
6. Monitor and Evaluate the Scheme:
 - a. Develop a robust monitoring and evaluation protocols to ensure that certification activities are effectively and efficiently carried out by PSCEs.
 - b. Use of technology like the seed tracker to enable transparent monitoring of PSCEs activities and support reporting in real time.
 - Certification officers will be responsible for selecting seed samples from seed lots validated by the PSCEs for laboratory testing.
 - c. Ensure that PSCEs technical competence, infrastructural and human resource capacity are audited yearly. NASC will monitor the consistency of the technical capacity of the deployed field officers and validate all the field visits dates.
 - d. NASC will introduce the diagnostic certification process to verify and validate the field inspection activities. The diagnostic certification will be performed solely on foundation seeds to ensure the highest level of purity.

7. Renew PSCEs licenses based on performance: NASC will conduct an annual evaluation of PSCEs performance to validate their capacity and competence to provide third-party certification services.

PSCEs roles:

1. Retrieve and update list of seed companies in focus regions: PSCEs will retrieve names and contact information of seed companies in their operating region from NASC. In addition, PSCEs will monitor the emergence of new seed companies in their regions. This is to ensure that all seeds produced across focus regions are certified.
2. Inspect fields: All PSCEs will be required to have working tablet devices for data collection and reporting using the seed tracker technology. Field inspection activities will be conducted using the seed tracker technology.
3. Generate revenue through certification fees: PSCEs revenue will be generated from the certification fees collected from seed companies. PSCEs internal performance will be measured by the number of companies certified. Given the current operations costs incurred by NASC to certify seed companies and the revenue generated from seed companies, NASC will develop a sustainable business model for the PSCEs to ensure their profitability.
4. Report to NASC: PSCEs will report on all activities electronically using the seed tracker system enabled through tablet devices. The seed tracker platform will be designed to provide privileges to NASC seed certification and quality control team for oversight functions.

Model 2:

NASC will consider adopting a third-party certification model that allows large seed companies (subject to NASC's final approval) to engage internal seed certification officers to conduct the company's field certification activities and report to NASC. The internal seed certification officers will inspect and certify plots owned by its company and will collect and report key data using the seed tracker. NASC's Seed Certification and Quality Control department will be responsible for providing oversight over the activities of internal seed certification officers. As a pilot, in 2020 to 2021, NASC will introduce this third-party certification model to 2 or 3 large seed companies, and from 2022 to 2024, NASC will extend the model to other large seed companies. To implement this third-party certification model, seed companies and NASC will be responsible for a set of activities listed as follows

Seed companies' role:

1. Present list of internal seed certification officers to NASC for licensing as internal seed certification officers.
2. Provide the required infrastructure like electronic tablet device to facilitate field inspection by internal seed certification officers.
3. Participate in the annual seed certification audit as a prerequisite for third-party license renewal ahead of the subsequent seed production year.
4. Provide periodic reports on all seed certification activities using the electronic seed tracker system enabled through tablet devices.

NASC's role:

1. License internal seed certification officers by registering, examining and inducting them to validate and prepare the officers for the role.
2. Monitor and evaluate the activities of the internal seed certification officers.

3. Audit the seed companies' certification system to validate the standard of seed certification activities carried out.
4. Organize annual revalidation test for the internal seed certification officers.
5. Renew licenses of internal seed certification officers based on performance in the audit and revalidation tests.

Strengthen NASC's role in the seed importation process: NASC will engage its supervising ministry (FMARD) to facilitate a cordial inter-agency collaboration between NASC and NAQS on the seed import policy.

Proposed Outcomes

By 2024:

- All the registration and licensing processes of NASC will be fully digitalized.
- Certification of priority crops of NASC will be fully digitalized.
- PSCEs will be leading the certification process for 80% of the registered businesses.
- All seed importation requests will be processed through NASC

1.2: Increase availability of improved seeds and adequate trainings

Over the next five years, NASC will adopt the following strategies to increase the adoption of improved seed varieties for an improved agricultural productivity. To achieve this, the Council will:

Drive seed production planning for the different classes of seeds in Nigeria: NASC, through the Seed Coordination and Management Services Department will work with research institutes, seed companies, small holder farmers', government agencies and projects, donor funded projects and other departments within NASC to appropriately forecast seed demand within the agricultural sector in Nigeria. Based on the seed demand forecast, NASC will coordinate the efforts of research institutes and seed companies to produce suitable and adequate seeds for annual cropping seasons. NASC will consider the following factors when estimating the national seed demand:

- Government policies and seed-related projects
- Trend in seed replacement rate by smallholder farmers across each region
- Trends in the adoption of Good Agronomic Practices by farmers
- Rate of technology adoption by farmers
- Varying agro-climatic conditions impacting crop production
- Release and publicity of new seed varieties in the industry
- Trends in the farm income potential of farmers
- Trends in the production capacity and volumes of seed companies and research institutes
- Trends in demand for crop products by end-consumers

The Seed Coordination and Management Services Department will work with the Seed Information, Data Management and Capacity Building Department to ensure the national seed survey provides outputs that indicates the seed demand of the sector. Both departments

will also work together to ensure seed demand forecasts are published periodically and shared with all industry stakeholders through established communication channels under NASC.

Finalise the establishment of the seed bank: NASC will finalise the establishment of a seed bank in its headquarters. The seed bank will serve as a seed repository and buffer to support food production after major environmental and social disasters such as flood, drought, epidemics etc.

Conduct field demonstration trials and farmers' field days to educate farmers: The Seed Industry Development, technical Support and Commercial Services department will extend its field demonstrations to reach a wide range of stakeholders. NASC will establish and/or maintain demonstration plots for the trials. The demonstration plots will be established on NASC's fields, seed companies' fields and selected smallholder farmers' farms. NASC will develop and maintain a schedule for the existing demo plots. NASC will publish key insights and pictures from the field days on its website and social media platforms. The Seed Industry Development, Technical Support and Commercial Services department will develop a monitoring framework to track the adoption rate of improved seeds by the participant farmers.

Enforce the Seed Act on protection of plant varieties and encourage the introduction of enhanced genetics from local, regional and international sources into Nigeria: The amended Seed Act stipulates the need to protect the intellectual property of seed genetic providers, specifically as it relates to improved varieties. NASC will facilitate a working session with owners of such materials and establish a system that protects their innovation and idea from being copied by unauthorized users. NASC will push accordingly for the introduction of a law on plant variety protection that will prescribe sanctions for anyone who infringes on the ownership rights of protected varieties.

Improve the management of NASC processing and storage facilities: During the first year, the Seed Coordination and Management Services department will conduct a diagnostic of its processing and storage facilities and take stock of the expenses and revenues they generate. The diagnostic will be used to evaluate the impact of the facilities on the users (seed entrepreneurs) and serve to inform decision-making by the Council regarding necessary actions including closures, upgrades or privatization of the facilities. The diagnostic study will be conducted and finalised by 2020. Upon reviewing the diagnostic test, NASC will consider a concession or sales of the facilities to generate revenue.

Monitor and evaluate processing and storage facilities owned by actors in the industry: NASC will review and update its records of functional processing and storage facilities in the Nigerian seed sector. The Seed Coordination and Management Services department will schedule annual visits to functional facilities to monitor the condition, integrity and performance of the facilities. The department will collaborate with the Seed Information, Data Management and Capacity Building department to organize capacity building programmes for the facility managers and operators.

Conduct field inspections to curtail the marketing and availability of adulterated seeds in local markets: NASC will adopt three approaches to ensure that there are limited adulteration and distribution of poor-quality seeds in the Nigerian market:

- **Industry surveillance and sensitization:** NASC will improve the structure and frequency of the surveillance activities within the seed industry by developing sensitization materials and increasing the consistency of field visits. The Seed Inspectorate department will develop and publish sensitization materials that will include best marketing practices such as NASC

certification and labelling, seed storage, detailed prosecution processes and corrective actions for offenders. The materials will be published in handbooks and shared via the NASC website and social media handles.

The Seed Inspectorate department will re-structure its activities to include a monthly surveillance and a 'Market day' or 'Sensitization day' program.

- ❖ *The monthly surveillance* will consist of organizing monthly regional inspection outings. This activity will include identifying illegal practices in the markets to sanitize the seed industry, sensitizing the identified stakeholders and registering/reporting their businesses and offences in the database for future reference. The department will develop a monthly surveillance schedule across each regional office.
 - ❖ *The 'Market day' or 'Sensitization day'* will consist of identifying and targeting the top three popular seed markets in each region and engaging the seed sellers by sharing materials on best practices. This activity will create awareness for NASC and promote the use of quality seeds.
- **Prosecute the identified offenders and/or implement corrective actions:** NASC will prosecute offenders – adulterated seed sellers and marketers - in accordance with the Part 9 of the Seed Act. NASC will name and shame repeat offenders via print media, radio announcements and interviews, its website, and social media platforms. NASC will identify and collaborate with key partners to ensure the name and shame process is executed.
 - **Implement an incentive-based whistle blowing policy:** The Seed Inspectorate Department will introduce incentives such as cash payments to reward whistle blowers for reporting illegal activities perpetrated in the seed industry. During the first quarter of 2020, the department will develop the whistle blowing policy benchmarking best practices in other industries and countries. The policy will also include provision to penalise false whistle blowers. The policy will be approved by the directors and the reward determined during a working session. The final document developed by the Seed Inspectorate will be disseminated to the public and shared on all communication platforms including the data bank managed by the Seed Information, Data and Capacity Building Department.

Proposed Outcomes

By 2024:

- At least 40% of farmers that have participated in the demonstration trials would have adopted improved open pollinated and hybrid seeds across priority value chains – Roots and Tubers (Cassava & Yam), Grains (Maize, Rice, Soybean Sorghum), vegetable (Amaranths).
- At least 60% of seed sellers and distributors in local seed markets per region would have been visited by inspectors and would only sell and promote certified seeds.
- The seed inspectorate department would ensure that less than 20% of the total seed in the ecosystem is adulterated.
- All stakeholders in the industry, particularly the producers, sellers and distributors would be aware of the whistleblowing policy.
- NASC's processing facilities would have been upgraded or privatized to increase their efficiency.

1.3: Strengthen the capacity of stakeholders in the industry

In line with NASC's 5-year plan, the NASC team will focus on providing capacity building services to industry stakeholders to address the technical knowledge gaps in the sector. NASC will partner with key stakeholders such as the national and international research institutes in this effort.

Develop a structured training program tailored to address industry knowledge gaps: The Seed Information, Data Management and Capacity Building department of NASC will design tailored training curricula that will bridge the capacity gaps of stakeholders in the seed industry including seed companies, seed entrepreneurs, PSCEs, and farmers. The paid training programmes will include practical and theoretical sessions on seed production, marketing and distribution and other technical areas. NASC will partner with agricultural research institutes and universities to develop curriculum, organize and train local seed producers across the country. Research institutes and universities will deploy their experts to deliver the trainings on best production practices that will boost the quality of seed produced by local seed entrepreneurs. The trainings will also be provided at the Centre of Excellence facility at NASC headquarters and across its regional offices. In addition, the training modules will be integrated into an online learning portal and made available to interested industry actors in Nigeria and other parts of the world. The Seed Information, Data Management and Capacity Building department of NASC will execute this strategy by working with key internal and external partners and engaging in the following steps:

- **Conduct a mapping of key industry stakeholders interested in the training program:** NASC will map and group the relevant seed industry stakeholders who could benefit from trainings from the department. These stakeholders will include seed companies, PSCEs, extension agents, smallholder farmers, and university undergraduates. NASC will rely on its regional offices, PSCEs and inspectors to gather data on the knowledge gaps in the industry to ensure that it designs relevant and timely training programs to fill these gaps. This mapping will first be conducted in Q2 2020 and then bi-annually to ensure that the training programs remain dynamic and cutting-edge.
- **Develop training programs and modules tailored to the knowledge gaps in the industry:** The department will develop structured and tailored training programmes for each stakeholder group identified in the mapping exercise. This will include the specific costs and dates for each programme. Information on the available training programmes will be disseminated on various platforms including the NASC website, social media, print media etc. The external training programmes will include the annual mandatory trainings for PSCEs and seed companies, in-house tailored trainings for interested companies and other stakeholders. NASC will partner and collaborate with relevant industry actors and international seed organizations to develop comprehensive training modules and manuals for each training program and facilitate the training sessions. The training modules will focus on several topics across the spectrum of quality seed production, processing, storage, handling and marketing.
- **Re-structure the capacity building component of the community-based seed programme:** The Seed Information Data Management and Capacity Building department will re-structure the activities of the community-based seed programme to become an integral part of its operations. NASC will facilitate *quarterly* trainings for local seed entrepreneurs across the country to minimize the use of farmer-saved seeds from previous seasons. This will boost the quality of seeds produced at the rural level

and reduce the challenges of accessibility and affordability of quality improved seeds varieties.

Proposed Outcomes

By 2024:

- NASC would have a robust training programme renown nationally and internationally for its quality and effectiveness
- 100% of the mandatory trainings would be provided to PSCEs and seed companies annually.

1.4: Build the confidence of industry stakeholders in NASC and improve stakeholder relationship management

Over the next five years, NASC will adopt the following strategies to achieve its mission of providing an enabling environment for stakeholders in the seed industry to thrive by leveraging the following strategies:

Establish a Centre of Excellence for seed industry development in West Africa: NASC will establish in Nigeria, a Centre of Excellence for Seed Industry (CoESI) to promote and support seed industry development in Nigeria and West Africa. CoESI will be a physical facility and will serve as a centre for seed industry development, seed research and development, and a hub for building the capacity of industry stakeholders. The operations of the facility will be centred around research, training and service provisions for seed industry stakeholders. The construction of CoESI will be in phases, from 2020 to 2021. In 2020, NASC will focus on upgrading existing facilities including the seed testing laboratories, seed processing plants, green houses and administrative blocks, and training of the CoESI team. While in 2021, NASC will construct additional facilities including the conference room, hostels, model seed markets, training centre and Information Technology centre. NASC will partner with development organizations, private and public sector actors to structure, design and establish CoESI.

Leverage technology to create a data bank and one-stop-shop for seed information: NASC will develop an electronic data bank for the seed industry that will include farmer information, seed demand and supply statistics, varietal adaptability and availability, key stakeholders' services, learning and training opportunities for stakeholders etc. The databank will be designed to serve as a cross-cutting digital platform for seed industry information with free and paid options for accessing the available content. The data bank will be accessible remotely or through the Centre of Excellence (CoESI). The Seed Industry Development, Technical Support and Commercial Services department will define the cost of accessing information available in the data bank. Specific information will be printed as handbooks and graphics for seed industry stakeholders including farmers, village seed entrepreneurs, and agro-dealers who might not be able to access the data bank due to use-of-technology and literacy limitations.

Organize national seed surveys to gather data on the trends, demand and supply of seed: The department of Seed Coordination and Management Services will conduct a biennial survey to track and report key industry trends and inform policy-driven decision making by the state

and national government and other stakeholders such development organizations, seed companies, research companies and farmers. The department will leverage NASC's annual reports, data collected by other departments and field interviews to assess the productivity and financial impact of using improved seed varieties. This survey will be offered to stakeholders at a nominal fee to cover the research and printing costs, but also enhance the sustainability of NASC.

Restructure and scale the NASC Seed Connect Conference: NASC will improve the seed connect conference by introducing a "Nigerian Seed Week" which will include regional seed week seminars and the national seed connect conference. The regional seed week seminars will hold across the six regions on the first day of the seed week and will entail working sessions with seed agro-dealers and community-based seed entrepreneurs facilitated by NASC regional teams. During the remaining days of the Nigerian seed week, NASC will invite stakeholders to Abuja to share insights towards advancing the agenda of the industry. Some key activities will include product exhibition, innovation fairs and policy advocacy. The fairs held during the seed week will serve as a platform for NASC to introduce its various innovation and technologies, such as the electronic verification system. Organizing the Seed Week will require NASC to create publicity for the event across selected media platforms to attract a broad range of exhibitors and participants. Prominent television, radio and print agencies will be leveraged for advert placements while NASC will be responsible for publicity across NASC's web and social platforms.

Participate in industry stakeholders' activities – workshops & conferences –, share insights on industry trends and provide required support: NASC's Seed Coordination and Management Services department will liaise with industry stakeholders such as research institutes, seed companies, and development organizations to share insights and trends on the industry and provide support on projects. NASC will be involved in all the seed-focused intervention programmes (for example, the BASICS and YIIFSWA Programs). Furthermore, NASC will be the primary liaison between industry stakeholders (farmers, seed companies, NGOs), the government and agricultural research institutes, bridging the gap between demand and supply of seed.

Coordinate online seed promotional programmes through communication channels with industry stakeholders: NASC will streamline and establish key communication channels with industry stakeholders using its website and social media platforms. NASC will publish seed industry insights, newsletters, quarterly and annual reports on its social media platforms. The department of Seed Coordination and Management Services with support from the office of the Director General will maximize the use of various communication tools to disseminate information on its regulatory functions and activities in the seed industry to stakeholders and partners. The department of Seed Information, Data Management and Capacity Building will ensure that the communication mediums are user friendly and can store large volumes of information.

Strengthen partnerships with key actors in the industry: NASC will intensify its efforts to become a member and engage with international seed associations. NASC will ensure its laboratories are ISTA accredited. In addition, NASC will secure membership with UPOV and take part in the OECD seeds scheme. The Office of the Director General will facilitate and manage partnership development for NASC.

Table 2: Partnership Opportunities and Benefits

International Seed Bodies	Membership Status	Potential Benefits
ISTA	Member	<ul style="list-style-type: none"> Seed laboratory accreditation
OECD Seed Scheme	Non-member ³	<ul style="list-style-type: none"> Access to international market.
UPOV	Non-member ⁴	<ul style="list-style-type: none"> Intellectual Property (IP) Protection Plant Variety Protection (PVP) Plant Breeders Rights (PBR)

Proposed Outcomes

By 2024,

- NASC will have a vibrant and active data bank which is used by over 100 seed companies and stakeholders on a regular basis, as evidenced by the payment received for specific information needs.
- There would be an increased investment by development organizations, private sector and NGOs in the seed industry due to the information provided by the data bank
- NASC would have organized five high impact and profitable annual seed fairs

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- NASC would have organized five high impact and profitable annual seed fairs

Resource Requirement

NASC will require the financial and human resources to implement the strategies outlined above:

Cross-cutting Resources to be managed by the Office of the Director General:

- High-speed internet connectivity:** NASC will invest in providing high-speed internet connectivity to support an effective and efficient online registration and licensing system. The recommended internet bandwidth for NASC is at least 5-10 Mbps.
- Funds to establish the Centre of Excellence:** NASC will invest in the design and establishment of a centre of excellence at its headquarters and across its regional offices.

³ OECD Agricultural Codes and Schemes 2018

⁴ <http://www.oecd.org/agriculture/seeds/documents/oecd-seed-schemes-brochure.pdf>

Resources required by the Seed Certification and Quality Control Department:

- **Funds for certification activities:** NASC will allocate a budget to cater for the development of an electronic registration and licensing portal, remunerations for the new technical support hires, training of technical staff and logistics for mobilizing certification officers to conduct monitoring and evaluation activities.

Resources required by Seed Coordination and Management Services Department:

- **Funds for Seed fairs and conferences:** The funds required by the department will be allotted to the survey and the diagnostic study. The training will be included in the human resources activities (See human resources section-page).
- **Funds to develop the data bank and organize the annual surveys:** The department will allocate funds for the development of the data bank and collection of data collection.

Resources required by Seed Information Data Management and Capacity Building Department:

- **Skilled personnel/trainers:** NASC will partner with research institutes and universities to identify seed experts that will facilitate the trainings on demonstration farms. Furthermore, the NASC internal team will be trained to be trainers and specialise in specific topics/modules for the trainings.
- **Funds for training the trainers:** NASC will invest in building the skill of the department given that they will be responsible for training other stakeholders. Team members of the department will receive local and international trainings to learn about relevant and new innovations and tools in the industry.

Resources required by the Seed Industry Development, Technical Support and Commercial Services Department:

- **Funds for publicity and promotional materials:** NASC will collaborate with popular radio and television stations, and the print media to publicize seed fairs. Promotional materials such as face caps, wristbands, T-shirts etc. will be produced to highlight key activities at the seed fair.

Resources required by the Seed Inspectorate Department:

- **Funds for logistics:** The field inspectors will require mobilization funds for their market visits. The department will benchmark the required fund for the field visits and set targets for each field inspector. Misused funds and/or unmet targets will result in disciplinary actions.
- **Funds for sensitization campaigns:** The campaigns will be organized annually in each region in a popular seed market where inspectors will engage in interactive discussions with agro-dealers, seed sellers and farmers and share the materials.

Key Performance Indicators for Enhancing NASC's Services to Enable Sustainable Demand

Table 3: Key Performance Indicators for Strategic Objective 1

Short Term Targets

Objectives	Indicators	2020 Targets
Objective 1.1: Build an Efficient and Robust Certification System	Number of PSCEs engaged for the third-party certification	1 PSCE to at most 4 Seed Producers ratio
Objective 1.3: Strengthen the Capacity of Stakeholders in the Industry	Number of demonstration trials organized by NASC maintained with increased partnership with industry stakeholders	At least 2 demo trials per value chains per production season
Objective 1.4: Build the Confidence of Industry Stakeholders in NASC and Improve Stakeholder Relationship Management	NASC communication channels are functional and active	Website and social media platforms
	Number of national seed fairs and conferences organized	1 fair per annum 1 seed conference per annum
Long Term Targets		
Objectives	Indicators	2024 Targets
Objective 1.1: Build an Efficient and Robust Certification System	Seed licensing and/or renewal process time reduced	Registration: 45 to 15 days Licensing: 14 to 5 days
Objective 1.2: Increase Availability of Improved Seeds and Adequate Trainings	Percentage of the total local markets visited for inspections and sensitization per region	80% of markets per region per annum
	Percentage annual increase in the number of improved varieties introduced and multiplied by international seed companies	20% annual increase
	The management of the NASC processing facilities has been reviewed and improved	High reviews from facility users
Objective 1.3: Strengthen the Capacity of Stakeholders in the Industry	Percentage annual increase in the number of trainings facilitated per annum to farmers, ADPs, NGOs, seed companies and development programs	20% annual increase
	Number of stakeholders - farmers, Agro-dealers, ADPs, and NGOs – that participated in NASC's field demonstration per region	All seed industry stakeholders per region
Objective 1.4: Build the Confidence of Industry Stakeholders in NASC and Improve Stakeholder Relationship Management	Percentage annual increase in the number of participants (seed companies, seed sellers and distributors, farmers etc.) that exhibited at the fair	40% annual increase
	Information in the data bank is updated monthly, quarterly and annually	12 monthly reports per annum, 4 quarterly reports per annum, 5 annual reports

	Number of accredited laboratories.	Minimum of four (4) ISTA-accredited laboratories.
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Strategic Objective 2: Increasing Financial Sustainability

Over the next 5 years, NASC will adopt the following strategies to build financial sustainability across its various operating areas.

2.1: Improve Internally Generated Revenues from Income Generating Services

NASC can generate income from a range of sources including inspection services, training programmes, seed fairs, and registration and licensing of PSCs. With each of these potential profit pools, the organization will need to:

Benchmark the cost of service offerings: NASC, through the corresponding departments responsible for the different service offerings, will benchmark the applicable costs for similar services across different sectors, industries and regions.

Tables 3 - 7 below highlight benchmarked information on cost of service offerings across other organisations, sectors and regions.

Table 4: Benchmarking the Costs of Select Trainings in the Agricultural Sector

Country	Organization	Training Programs	Costs (N)
Nigeria	Lagos Business School (LBS)	Agribusiness Management Training	1,100,000
Nigeria	International Institutes of tropical Agriculture (IITA)	Quality seed production	108,600
USA	Communicating for Agriculture Education Program (CAEP)	Agriculture Training Program (dairy, crop, beekeeping, piggery)	995,500

Table 5: Benchmarking the Costs of Select Agricultural Information

Country	Organization	Type of Information	Cost per month (N)
Nigeria	Novus Agro	Commodity Market Prices	2,000
Nigeria	AFEX Commodity Exchange/ Kainos Edge	Commodity Market Prices	67,000
Turkey	Trading Economics	Data, report and forecast	122,772
Nigeria	Standard Organization of Nigeria	Food Fortification Standards	3000/4000 (per publication)

Table 6: Benchmarking Select International and National Conferences Prices

Conference Name	Service/Package Types	Costs (N)
African Green Revolution Forum 2019 (AGRF2019)	4-day access	112,310
	Single day access	58,463

Conference Name	Service/Package Types	Costs (N)
National Association of Agricultural Economists (NAAE Conference)	Member	15,000
	Non-member	20,000
	Undergraduate students	5,000
	Postgraduate students	8,000
Agricultural Extension Society of Nigeria (AESON Conference)	Member	30,000
	Non-member	20,000

*Exchange Rate as at August 9, 2019: 1 USD = N362.00, 1 EUR = N406.00

Table 7: Benchmarking the Costs of the Stands for Select Agricultural Fairs

Food and Agriculture Fair	Cost of Stand/Booth (₦)		
	Small	Large	International
Gateway Trade Fair (10m ²)	20,000	30,000	30,000
Odu'a International Agriculture Fair (10m ²)	25,000	90,000	n/a
Nigeria International Poultry and Livestock Expo (9m ²)	n/a	130,000	130,000
Lagos International Food and Beverage Fair – LIFBEF (9m ²)	50,000 (4m ²)	150,000	150,000
Lagos International Trade Fair (9m ²)	19,250		
Agro food Nigeria Fair	1,200,000 (9m ²)		
	2,600,000 (18m ²)		
Food West Africa	1,550,000 (9m ²)		
	2,770,000 (18m ²)		

Table 8: Benchmarking Seed Companies Registration and Licensing Prices

Seed Company Registration and Licensing	Cost (₦)		
	Small	Medium	Large
NASC	65,000	75,000	95,000
KEPHIS	35,140	105,422	264,592

Review and set prices of different services: The head of each department will lead the process of setting fees and subsequent price review activities for the corresponding service offerings. The board of directors will be responsible for ratifying suggested prices by the head of departments based on benchmark analysis of prevailing prices.

Optimise payments and remittance options: Payments for all service offerings will be collected through the Remita payment channel (via bank deposit, cheque deposit, USSD⁵ and internet transfers). The corresponding department responsible for the different service offering will collaborate with the Finance and Accounts department to ensure that services are paid for before execution.

Set up the NASC Seed Fund: Based on section 45, subsections 1 and 2 of the Seed Act 2019, NASC would establish the Seed Fund. This fund will be used to defray all expenditures of NASC and be provided by the federal government through budgetary allocations, development partners and private sector investors. NASC will partner with funders – development organizations, public and private sector actors – to set up a seed fund to bridge the gaps that may exist in its funding needs. NASC will benchmark fund structures of other industries and countries to establish the seed fund. Based on the proposed strategies to improve its efficiency, NASC will channel funds through its existing and proposed activities and programs.

2.2: Establish systems to manage NASC's revenues

Manage budget and cash flows: NASC through its Finance & Accounts department and the Office of the Director General will ensure funds are provided to execute the strategic objectives highlighted in this report – enhancing its services to enable sustainable demand and increasing operational effectiveness. Specifically, NASC will;

- Adopt an activity-based annual budgeting approach that takes into consideration new strategies proposed in this report and other activity areas where cost can be maximised
- Allocate adequate funds to execute priority areas highlighted as strategic objectives in this report.
- Put in place internal systems to measure and track the effectiveness of funds disbursed.

Manage operations cost by leveraging technology and optimising processes: NASC, through its Seed Certification and Quality Control department will introduce technological solutions to drive down the cost of conducting seed certification (directly by NASC and by PSCs) over the mid-to-long term period. Some of the technologies to be introduced include;

- The use of the seed tracker to reduce cost of conducting seed certification.
- The deployment of an electronic seed verification system (SEEDCODEX) by mPedigree for seed tagging.

NASC will also reduce general expenses through the following approaches;

- Co-sponsoring events (like the Seed Connect Conference) with the private sector and/or development organisations to share the cost of the event(s).
- Reduce number of entourage members delegated to escorting the Director General and other senior management members to events and other stakeholder engagements.
- Evaluate existing assets to identify non-performing assets and dispose accordingly to reduce cost incurred from maintaining zero-value assets.
- Adopt a train-the-trainer approach for sponsoring staff on trainings to reduce cost of training large team members on similar subject areas.

⁵ USSD: Unstructured Supplementary Service Data

2.3: Partner with development organisations to bridge funding gaps and implement regulatory programs

NASC, through the Office of the Director General, will engage in partnerships with development organizations to secure funding interventions. These funds will be critical to bridging the existing gap created through inadequate budgetary allocations from the federal government and the limited internally generated revenues.

Funding interventions to explore with development partners: NASC will explore a range of funding opportunities with development organizations and donor agencies to support its activities towards the rapid development of the seed industry. Key activity streams that require funding support have been matched with potential development partners with aligning interests.

The table below highlights a range of funding opportunities NASC will explore.

Table 9: Potential Funding Sources for NASC's Services

Potential Funding Interventions	Potential Development Partners
Seed Certification <ul style="list-style-type: none"> Funding support to implement third party certification 	AGRA and BMGF
Inspection and surveillance <ul style="list-style-type: none"> Funding to procure field vehicles Funding to hire ad-hoc security agents for field inspection and market raids Funding to prosecute industry violators Funding to reward whistle blowers 	CBN, USAID and World Bank
Training and Capacity Building <ul style="list-style-type: none"> Training grants for employees Technical assistance in training CBSEs, PSCEs and Industry stakeholders 	AfDB, AGRA, FAO, IITA and USAID
Infrastructure and Technology Support <ul style="list-style-type: none"> Establishment of seed testing laboratories Establishment of community seed banks Internet services Funding and technical assistance to deploy seed tracker technology Funding to establish electronic data bank Funding to create an integrated data management system Online payment and enterprise resource planning (ERP) system Establishment of model seed stores and warehouses Establishment of model seed markets across the farming communities 	AfDB, AGRA BMGF, CBN, IFAD, USAID and World Bank

Potential Funding Interventions	Potential Development Partners
Seed Programmes, Projects and Initiatives <ul style="list-style-type: none"> • Funding for cutting-edge research • Field demonstration trials • Seed fair and international seed conferences • Funding for annual seed industry survey and reports. 	AfDB, AGRA, CBN, FAO, IITA, USAID and World Bank

Proposed Outcomes

By 2020:

- NASC will have a defined registration and licensing fee, the cost of participating in fairs and the cost of published materials.
- NASC would have defined the binding terms of the seed fund and signed partnership agreements with relevant stakeholders committed to support the seed fund.

By 2024:

- The seed fund would be fully established and has been utilized to support the implementation of at least five of the proposed strategies.
- NASC would have established at least five (5) strategic partnerships with funders for specific seed industry development projects.

Key Performance Indicators for Increasing NASC's Financial Sustainability

Table 10: Key Performance Indicators for Strategic Objective 2

Long Term Targets		
Objectives	Indicators	2024 Targets
2.1: Improve Internally Generated Revenues from Income Generating Services	Income generated from paid training programs	Each income generating services contributes at least 15% of NASC incomes respectively
	Income generated from seed fairs and conferences	
2.3: Partner with Development Organizations to bridge funding gap and implement Seed Programs	Number of seed related grants received from donors	5 donor funded seed industry development projects secured from development partners

Strategic Objective 3: Increasing Operational Effectiveness

Over the next 5-year period, NASC need to make some significant internal changes to enhance its operational excellence.

3.1: Deploy technology to increase the efficiency and effectiveness of NASC's internal operations

NASC will leverage relevant technologies to improve the quality and efficiency of its service delivery and overall operations in regulating the seed industry in Nigeria. More specifically, it will:

Deploy an electronic knowledge management system: NASC will integrate electronic data gathering and processing tools such as Fulcrum, across its departments to gather and store operational information. NASC will leverage the seed data bank infrastructure to host a Knowledge Management System (KMS) portal in parallel. The KMS portal will include compartmentalized storage for each department that grants privileges to users/members based on management clearance. Each department will be responsible for keeping the KMS portal updated. Personnel will be sensitized and assigned to manage information and data upload processes within each department. The KMS will house NASC's documents including reports and key data developed and generated by NASC.

Some example of information to be managed by the KMS portal include but is not limited to the following:

Human Resources information

- Staff conditions of service handbook
- HR policies
- JDs for NASC's roles
- Learning and development history of all departmental staff
- Entry and exit interview reports
- Departmental handbooks

Finance information

- Audited annual financial accounts report
- Draft annual financial accounts
- Annual budget submitted to the Ministry of Finance
- Annual budget approved by the Federal Government
- Records of financial payment by the Ministry of Finance
- Records of disbursement to regional offices and departments for overheads and project implementation respectively

Certification and inspection information

- List of licensed seed companies and PSCEs
- Certification reports
- Spot checking and testing reports
- Field activity reports
- Grow out test reports

- Seed bank periodic reports
- Offenders and prosecution reports

Seed industry promotion information

- Seed fairs and conferences report
- List of published industry focused handbooks and sensitization materials.

Digitalize internal communication in NASC: NASC will leverage selected communication media and tools to effectively share information within the organization. This internal communication strategy will promote efficient communications and knowledge sharing as outlined in Table 1 below.

Table 11: Internal Communication Channels of NASC

Channels	Tools	Target Audience	Purpose
E-Mail	<ul style="list-style-type: none"> • Google Mail (Gmail) • Microsoft mail (Hotmail) • Yahoo Mail etc. 	<ul style="list-style-type: none"> • All staff • Board of Directors 	<ul style="list-style-type: none"> • NASC will give every staff an institutional e-mail identity to be utilized for: <ul style="list-style-type: none"> ◦ Daily operational correspondences. ◦ Dissemination of documents, reports and letters
Messenger Applications	<ul style="list-style-type: none"> • Slack • Yammer • Facebook Team 	<ul style="list-style-type: none"> • All staff 	<ul style="list-style-type: none"> • Slack will support instant information sharing between team member, either in groups or private discussions
VoIP/Video Conferencing	<ul style="list-style-type: none"> • Skype • Zoom • Team Viewer etc. 	<ul style="list-style-type: none"> • Field officers 	<ul style="list-style-type: none"> • Video conferences will support group conversations with partners, board members and regional offices. It will also facilitate meetings with key stakeholders in the industry.

Proposed Outcomes

By 2020:

- Team members will be well trained and actively utilize the electronic portfolios
- All internal documents of NASC can be accessed electronically
- Team members would have fully adopted use of smart digital tools for internal communication.

3.2: Streamline the functions of NASC's departments to avoid redundancy and overlapping of activities

NASC should review the operational objective of its departments and streamline their activities to maximize its human and financial resources. This will reduce duplication of efforts and operational costs, and lead to efficient service delivery by each department.

Review and clarify NASC's departmental roles: NASC will review its departmental functions in line with its strategic goals to deliver its mandate (See section IX). The Board of directors will review the current roles and responsibilities of each department and allocate emerging responsibilities from the five-year strategic plan to each department. *Table 2* highlights the improved functions of NASC's department from 2020 to 2024.

Table 12: Proposed Improvements for each Department

Departments	Current Functions	Improved Functions and Strategic Focus
Human Resource (HR)	<ul style="list-style-type: none"> Coordinates recruitment and talent management Oversee the internal capacity building efforts in NASC 	<ul style="list-style-type: none"> Develop JDs for the recruitment focus of NASC including JDs for seed analysts, stakeholders' relationship manager, crop specific seed certification officers, IT team Develop partnership with reputable Nigeria Universities to organize career fairs Develop partnership with international seed council, development partners and private sector for NASC's internal training activities Plan and schedule annual mandatory training for director and managers, staff and technical staff Create welcome packs for new staff Revise the staff conditions of service handbook Complete and launch NASC's performance evaluation structure
Finance and accounts	<ul style="list-style-type: none"> Coordinates the management and disbursement of funds in NASC for the execution of its activities 	<ul style="list-style-type: none"> Maximize income generation by supporting relevant departments with pricing for service offerings Develop financial plans for proposed specific donor funded activities Coordinate funds disbursement and manage costs across NASC operational activities
Seed inspectorate	<ul style="list-style-type: none"> Inspects the activities of unscrupulous seed dealers, sensitizes seed marketers Enforces seed standards to deliver quality seed standard to Nigeria farmers 	<ul style="list-style-type: none"> Develop and publish sensitization materials on seed production, certification and storage best practices Conduct monthly sensitization and surveillance to ensure limited marketing and availability of adulterated seeds in local markets

Departments	Current Functions	Improved Functions and Strategic Focus
		<ul style="list-style-type: none"> • Prosecute, name and shame offenders through media platforms • Incentivize whistle blowing to encourage the reporting of illegal activities in the industry
Seed industry development and technical services	<ul style="list-style-type: none"> • Conducts demonstration trials and farmers field days • Partners with private sector to build the capacity of seed entrepreneurs • Organizes seed fairs to promote high-quality seed varieties 	<ul style="list-style-type: none"> • Expand the reach of its demonstration trials by establishing demo plots on fields owned by NASC as well as seed companies and smallholder farmers • Maintain records of established demo fields • Assess, analyse and publish data obtained from the demo fields • Organize annual national seed fairs providing platforms for collaboration among stakeholders
Seed certification and quality control	<ul style="list-style-type: none"> • Registers and licenses seed companies and community-based seed entrepreneurs • Facilitates field inspection, seed testing and seed certification • Issues import clearance to seed importers 	<ul style="list-style-type: none"> • Identify PSCEs across the six (6) geopolitical zones in Nigeria • Optimize electronic registration and payment to license seed companies and PSCEs and retrieve outgrowers' list • Conduct induction for seed companies and PSCEs • Leverage its partnership with mPedigree to introduce SEEDCODEX Smart Seed Labelling for seed quality control • Leverage the seed tracker technology to monitor the activities of the PSCEs • Conduct monitoring and evaluation of third-party seed certification entities
Seed coordination and management services	<ul style="list-style-type: none"> • Coordinates the national seed production program across the seed value chain 	<ul style="list-style-type: none"> • Organize National Seed Surveys to gather data on the trends, demand and supply of seed • Support the development of new varieties across priority value chains • Drive the adoption of improved open pollinated and hybrid seeds by farmers • Conduct grow out tests for newly released varieties

Departments	Current Functions	Improved Functions and Strategic Focus
Seed information, data management and capacity building	<ul style="list-style-type: none"> • Develops program and seed policies • Manages and analyses data • Monitors and evaluates the national seed programs • Supports information communication technology • Provides library services and builds the capacity of stakeholders in the seed industry 	<ul style="list-style-type: none"> • Oversee and improve the management of NASC processing facilities • Digitalize key services and operations of NASC including <ul style="list-style-type: none"> ◦ Electronic portal for seed company registration and licensing ◦ Online payment interface • Deploy an electronic Knowledge Management System (KMS) for NASC internal documents • Create an electronic seed data bank and a one-stop-shop for seed information • Conduct short surveys to gather data on the knowledge gaps in the industry • Design and publish training curricula for seed industry stakeholders • Develop manuals and coordinate tailored trainings for stakeholders of the seed industry

Proposed Outcomes

By 2024:

- NASC would have received at least two (2) international recognitions/awards for its efforts in transforming and strengthening the Nigeria seed ecosystem and its influence on other seed councils in Africa

3.3: Strengthen NASC team’s internal capability

In line with NASC’s 5-year plan, the Human Resource team will focus on addressing some fundamental technical capacity gaps in NASC by strategically recruiting and organizing trainings for NASC’s team members.

Revise the human resource policy: NASC’s Human Resource (HR) strategy is designed to recruit and retain talent with the requisite skills to improve the standard of service delivery by the organization, regulate the seed industry and enhance the credibility of the seed ecosystem in Nigeria. The Human Resource (HR) department coordinates the recruitment, talent management, and the internal capacity building efforts in NASC. As a critical pre-requisite for this strategic plan, NASC will need to review and update its recruitment policy in line with the revised goal of the HR department.

Current recruitment policy

- Carry out recruitment of suitably qualified candidates whenever necessary in such a manner as to reflect the Federal character. It is the sole prerogative of NASC to determine whether candidates have the requisite qualification for a position.
Proposed Recruitment Policy
- Leverage technology and industry partnerships to attract, recruit, and retain a pool of professional talent and utilize innovative strategies to build the capacity of the employees to effectively regulate the seed industry.

Define recruitment focus for the next five years: Based on the activities and responsibilities emerging from NASC's 5-year strategic objectives, the HR will focus on identifying the following key personnel:

- **Competent HR team:** NASC must ensure that its HR team has the technical skill to implement the updated recruitment strategy and identify the best talent in the sector, as well as to coordinate the internal training strategy. This will require a thorough review of the strengths of the current HR team, refresher trainings for the HR team and hiring of additional HR personnel to join the team.
- **Information Technology Team:** HR will hire an IT administrative support staff to manage technical ICT issues within NASC IT infrastructures, a backend developer to manage setup, configuration and programming issues relating to NASC's servers and databases, a full-stack software developer to create full end-to-end web and mobile solutions for NASC, a communications' associate that will be trained to manage content on the data bank, the website and all communication platforms and a graphics designer to manage content creation for the NASC's website and social media pages. The IT team will be structured to work in shifts to provide 24-hour responsiveness to industry stakeholders.
- **Stakeholder Relations Managers:** The HR will engage liaison managers who will manage engagements with potential partners including development partners, international seed councils, and research institutes. These managers will oversee NASC's stakeholder outreach activities, participate in the stakeholders' meetings, share insights about NASC mandate, services and activities in the seed industry.
- **Survey & Study Coordinators:** The HR will hire survey and study coordinators who will be responsible for the bi-annual surveys. They will require data analysis and management skills to develop the reports.
- **Crop specific seed certification officers:** The HR will recruit crop specific certification officers who have in-depth knowledge of specific crop varieties and their unique attributes. The crop specific certification officers will monitor and evaluate the certification reports of the PSCs online and on the-field.

Strengthen NASC's recruitment strategy: NASC will need to adopt new strategies to strengthen its recruitment process and hire the required talents for its operations.

Table 13: Proposed NASC Recruitment Strategy

Current recruitment approach	<ul style="list-style-type: none"> • Transfer of service from FMARD to NASC that occur when: <ul style="list-style-type: none"> ○ NASC requests for talent from FMARD ○ The staff of FMARD request to be posted to NASC ○ FMARD selects and posts staff to NASC • Direct recruitment by NASC: The talent needs are identified and recommended by the heads of department, regional directors and
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	<p>senior staff committee. Selection committees consisting of departmental heads participate in the screening and scoring of candidates during the interviews.</p>
<p>Proposed recruitment and engagement strategies</p>	<ul style="list-style-type: none"> • Develop 'Job Descriptions (JDs)' for direct recruitment: HR will develop JDs for each role, detailing: <ul style="list-style-type: none"> ○ Minimum required skills and degrees for each role -senior management, mid-level management and junior staff. ○ Key professional requirements for technical staff – seed and crop specific certification officers ○ Key responsibilities for each role ○ Application, examination, and screening processes for each role • Review the JDs: The head of departments will review and finalize the JDs with the HR before publication.
	<ul style="list-style-type: none"> • Engage with key stakeholders such as the Faculties/Colleges of Agriculture in Nigerian and international Universities, with research institutes and the National Youth Service Corps (NYSC) to access candidates with the requisite skill to work at NASC: <ul style="list-style-type: none"> ○ Organize career fairs in reputable Nigeria Universities ○ Organize fellowship programs for Professors and Doctorate degree holders in reputable Nigeria and international Universities ○ Facilitate exchange programs for students, lecturers, and professors in reputable international Universities.
	<ul style="list-style-type: none"> • Create a welcome pack for new staff: NASC will give new staff welcome packs containing staff conditions of service handbook, performance evaluation structure, past annual reports and published materials, documentation and reporting structure.
	<ul style="list-style-type: none"> • Revise Staff Conditions of Service handbook: NASC will review, update and enforce its conditions of service outlined in the HR handbook, to increase the accountability of staff across its departments. The HR team will enforce the terms of probation ensuring that all new employees comply the required probational period.
	<ul style="list-style-type: none"> • Update performance evaluation structure: NASC will finalize the development of its staff performance evaluation template and adopt its reward and recognition policy for high performing staff. These two documents are currently under development by the NASC team.

Recruitment will be conducted in two stages: screening and engagement stage. In the screening stage, the HR team will assess the candidate's knowledge, skills, capability and personal values to ensure each recruit is a strong fit for NASC. Screening will include:

- Thorough Resume and cover letter reviews
- Written general assessments

- Written technical assessments
- General phone interviews
- Departmental face-to-face interviews
- Director level face-to-face interviews

At the engagement stage the selected candidates will be formally engaged through an official email and employment letter highlighting their engagement conditions, responsibilities, salary and bonuses. The Director of HR and Director of the candidates' department will sign the official letters. The fresh staff will also receive NASC's welcome pack which will include NASC's staff conditions of service, reporting and documentation process and performance evaluation structure. They will also go through an induction and will be given copies of NASC's past annual reports and published materials to learn more about the operations and activities of NASC.

Strengthen NASC's internal training program: NASC will broaden the scope and approach of its staff training program to include knowledge acquisition on emerging techniques capable of catalysing change in the seed sector. This program will include trainings for existing and new staff. NASC will leverage partnerships with international seed councils, development partners and private sector actors to facilitate its internal training programs. The internal training program will consist of the following:

- Annual mandatory general trainings for staff
- Annual managerial trainings for Directors and Deputy Directors
- Annual mandatory Specific Skill Trainings (SST) for technical staff
- Mandatory practical trainings for select departments, such as the seed information, data management and capacity building department, seed inspectorate department, and seed industry development, technical support & commercial services department
- Exchange programmes with other international seed bodies and regulators, targeting key technical and administrative staff and cascaded to the broader internal NASC team through knowledge sharing.

In line with its strategic plan for the next five years, some of the departments that will be targeted for trainings are:

Table 14: Proposed Trainings for each Department

Department	Specific Activity	Proposed Training
Seed coordination and management services	Stakeholder outreaches, stakeholders' meeting, and conferences	Stakeholder relationship management training
	Bi-annual surveys and diagnostic study	Surveying, data analysis and reporting training
Seed Inspectorate Department	Surveillance and sensitization outing	Seed quality monitoring training

Department	Specific Activity	Proposed Training
Seed information, data management and capacity building	Support the deployment of technology solutions across NASC departments including automated registration and licensing, electronic seed quality verification, online recruitment system	Digital technology training
Seed certification and quality control	Monitoring and evaluation of PSCEs	Crop specific quality training and SEEDCODEX training

Proposed Outcomes

By 2020:

- The team would have hired and inducted at least one (1) stakeholder relationship manager, three (3) IT team members, and six (6) crop specific seed certification officers
- NASC would have established partnerships with three (3) reputable Nigeria Universities for career fairs, and with three (3) international seed councils for capacity building activities.

By 2024:

- The HR team would have organised and implemented at least three (3) career fairs
- The HR team would have organized at least two (2) trainings for each department.

Key Performance Indicators for Enhancing NASC's Operational Effectiveness

Table 15: Key Performance Indicator for Strategic Objective 3

Short term KPIs		
Objectives	Indicators	2020 Targets
1: Increase the Efficiency and Effectiveness of NASC's Internal Operations	Purchase and installation of required broadband internet facility	All departments and regional offices have access to high-speed internet by 2020
	Number of staffs using smart digital tools to communicate with team members	All communication between regional team members are held through smart digital tools adopted by 2020
	Fully deployed electronic documentation process	All documents generated in NASC are stored electronically
3: Strengthen NASC Internal Capability	Categories and number of staff hired by NASC	Hired at least two (1) IT personnel, one (1) stakeholder relationship partner, one (1) crop

		specification certification officers across its offices
	Number of partnerships with Nigeria Universities	Established partnership with a minimum of three (3) Nigerian Universities
	Number of partnerships with international seed council	Members of at least three (3) international seed council
Long-Term Targets		
Objectives	Indicators	2024 Targets
2: Streamline the functions of NASC's departments to avoid redundancy and overlapping of activities	Number international recognitions awarded to NASC	At least two (2) international recognitions or awards are received by NASC
3: Strengthen NASC Internal Capability	Number of career fairs held in Nigeria Universities	Completed at least three (3) career fairs
	Categories and number of staff hired by NASC	Hired up to three (3) IT personnel and six (6) crop specification certification officers across its offices.
	Number of trainings organized for NASC staff	Completed at least two (2) trainings for each departmental staff

XI. Risks and Mitigation Strategy

The team has developed strategies to mitigate some potential risks that may arise during the implementation of NASC's five-year strategic plan. As shown in Table 16 below, the occurrence probability and severity are measured using the keys – low (L), medium (M) and high (H).

Table 16: NASC Potential Risks and Mitigation Strategies

Risks	Occurrence probability	Severity	Mitigation Strategies
Strategic Objective 1: Enhancing NASC's Services to Enable Sustainable Demand			
Ineffective certification by Private Seed Certification Entities (PSCs)	H	H	NASC will leverage technology such as the seed tracker to remotely monitor the activities of Private Seed Certification Entities (PSCs) and ensure effective seed certification
Exposure of the seed sector to inferior seeds due to the passage of the African Continental Free Trade Agreement	M	H	NASC will secure its membership with international seed bodies like ISTA, ISF and UPOV to curtail the likelihood of the importation of low-quality seeds by industry stakeholders.
Strategic Objective 2: Increasing Financial Sustainability			
Delayed disbursement of statutory allocation from the federal government to NASC	H	H	NASC will strengthen its partnerships with development organizations and donors. NASC will structure its use of funds to focus on the implementation of short-term seed project activities prior to investments in capital projects
Difficulty in raising funds for the Seed Fund	M	M	NASC will engage seed companies on the need for a Seed Fund and obtain buy-in from relevant government parastatals and support from development organizations and institutions.
Strategic Objective 3: Increasing Operational Effectiveness			
External interference in NASC's recruitment process	M	M	The HR team will ensure a transparent recruitment system with clear job descriptions and qualifications. All potential recruits including nominated candidates will be subjected to thorough interviews and only the top performers will be recruited.
Duplicated reporting system across departments at NASC	M	M	NASC will continuously train all staff at the headquarters and regional offices on appropriate reporting procedures using the smart reporting tools.

XII. Financial Strategy

From Sahel Consulting's preliminary analysis, a total capital injection of **₦1,826,068,150** will be required to implement the strategic activities detailed in the plan between 2020 and 2024. The major elements driving this capital requirement include projects and initiatives such as the development of the centre of excellence at NASC headquarters, establishment of the seed bank, internal training and capacity building, and other direct costs of implementing the key activities in this strategic plan.

This financial projection is developed based on key assumptions and information from research, field interviews, and guidance from NASC. NASC is expected to source the projected funding requirement through partnerships with development organizations, improvement of inflows to the seed fund and efficient management of government allocations as discussed under the second strategic objective which focus on increasing NASC's financial sustainability.

Summary of Funding Requirement	2020	2021	2022	2023	2024	Total
Strategic Objective 1: Enable Sustainable Demand through Enhanced Services						
Certification System	27,661,903	29,694,605	28,331,091	30,436,212	22,361,904	138,485,714
Quality seed & Adequate training System	17,784,284	17,069,639	17,264,260	17,468,613	17,683,184	87,269,981
Strengthening Industry Stakeholders' Capacity	32,866,000	32,866,000	32,866,000	32,866,000	32,866,000	164,330,000
Build the Confidence of Industry Stakeholders	16,752,000	17,914,700	19,624,920	21,031,787	23,075,278	98,398,685
Construction of a Seed Bank	112,725,000	-	-	-	-	112,725,000
Establish a Center of Excellence	200,000,000	200,000,000	-	-	-	400,000,000
	407,789,187	297,544,943	98,086,271	101,802,612	95,986,367	1,001,209,380
Strategic Objective 2: Increase Financial Sustainability						
Monitoring and Evaluation of Regional Accounting Records	2,500,000	2,625,000	2,756,250	2,894,063	3,038,766	13,814,078
Outsourcing the development of bid-winning proposals	5,040,000	5,040,000	5,040,000	5,040,000	5,040,000	25,200,000
	7,540,000	7,665,000	7,796,250	7,934,063	8,078,766	39,014,078
Strategic Objective 3: Increase Operational Effectiveness						
Technology deployment for operation	14,450,000	10,150,000	10,150,000	10,150,000	10,150,000	55,050,000
Strengthening NASC Internal capabilities	85,450,000	85,050,000	85,450,000	85,050,000	85,450,000	426,450,000
	99,900,000	95,200,000	95,600,000	95,200,000	95,600,000	481,500,000
Total	515,229,187	400,409,943	201,482,521	204,936,675	199,665,132	1,521,723,458
General & Administrative Expenses @ 20%	103,045,837	80,081,989	40,296,504	40,987,335	39,933,026	304,344,692
Grand Total	618,275,024	480,491,932	241,779,025	245,924,009	239,598,159	1,826,068,150

XIII. 2-year Implementation Plan

The implementation plan articulates a clear roadmap for implementing the first two years of the five-year strategic plan.

Table 17: The 2-year Implementation Plan

Objectives and Activities	2020				2021			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Implement revised mission & vision statements and core values. (Led by the Office of the Director General)								
- Adopt and include the mission and vision statements in key brand materials like the service charter, brochures, newsletters and other publications, wall frames etc.								
Objective 1: Enhancing NASC's Services to Enable Sustainable Demand								
Establish an efficient seed certification system (Led by Seed Certification and Quality Control Department)								
Model 1								
- Publicize expression of interest for PSCEs								
- Contract and license PSCEs to undertake seed certification processes								
- Train selected PSCEs and pilot the scheme in 2-3 major seed producing states								
- Extend third party certification scheme to more seed producing states								

Objectives and Activities	2020				2021			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
- Conduct detailed monitoring and develop an evaluation report of the pilot third-party scheme.								
Model 2								
- Introduce and grant approval to 2-3 large seed companies to engage internal seed certification officers.								
- Grant licenses to internal seed certification officers								
- Carry out over M&E for checks on the activities of internal seed certification officers								
- Conduct re-validation tests and renew licences of internal seed certification officers based on performance								
Register and license seed companies leveraging technology								
Integrate an online portal on the website for the registration and licensing of seed companies								
Strengthen NASC's role in the seed importation process (Led by the Office of the Director General)								
- Engage the supervising ministry (FMARD) to facilitate an inter-agency deliberation on seed importation.								
- Integrate the import clearance request process into the online portal								

Objectives and Activities	2020				2021			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Establish a Seed Bank (Led by Seed Coordination and Management Services)								
- Assign an officer to coordinate seed bank establishment								
- Develop a costing for the seed bank								
- Develop an operational plan for the seed bank								
- Establish the seed bank at the headquarters by 2021								
Conduct field demonstration trials and farmers' field days (Led by Seed Industry Development, Technical Support and Commercial Services)								
- Map out NASC owned demonstration plots and identify potential partners plots across regions.								
- Establish demonstration trials across the identified regions and locations								
- Map out to key stakeholders to participate in field days – including farmers, research institutes, seed companies, state ADPs and other relevant stakeholders								
- Develop and share a robust schedule for the demo trials with industry stakeholders.								
- Conduct field days for at least two priority crops per location								

Objectives and Activities	2020				2021			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Improve the management of NASC processing facility (Led by Seed Coordination and Management Services)								
- Conduct diagnostics of NASC's existing seed processing facilities								
- Implement recommendations for the facilities with support of industry stakeholders.								
Implement an incentive-based whistle blowing policy (Led by Seed Inspectorate)								
- Design a whistle blowing policy driven by an incentive structure								
- Publicize the whistle blowing policy through all available communication channels to all relevant stakeholders.								
Develop a structured training programme (Led by Seed Industry Development, Technical Support and Commercial Services)								
- Map industry stakeholders interested in the trainings to identify the gaps								
- Develop tailored mandatory and voluntary training curricula								
- Communicate available training programmes to stakeholders								
- Conduct training programs across the regions								

Objectives and Activities	2020				2021			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Establish a centre of excellence for seed industry development in West Africa (Led by the Office of the Director General)								
- Call for quotation for the construction of the centre of excellence facility								
- Review submissions and select contractors to renovate existing facilities and build new facilities for the centre of excellence								
- Contact and engage donor and development organizations for financial and technical support								
- Commence the renovation of existing facilities of the centre of excellence (seed testing laboratory, green house, seed processing plant and administrative block)								
- Commence the construction of new facilities of the centre of excellence such as IT centre, training centre, model seed market, hostels and conference hall								
- Monitor activities of selected contractors for the centre of excellence facilities.								
- Launch the centre of excellence								
Establish a data bank for seed information availability and dissemination (Led by Seed Information, Data Management & Capacity Building)								

Objectives and Activities	2020				2021			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
- Develop a work plan to guide the data bank establishment process								
- Contract external consultants for the design and development of the data bank								
- Oversee design and development process								
- Test developed data bank and ensure suitability and effectiveness.								
Organise national seed survey (Led by Seed Information, Data Management and Capacity Building)								
- Plan out timeline, key deliverables and resource requirements for the national survey exercise								
- Request for resources to conduct survey exercise								
- Conduct survey exercise across the country								
- Develop and submit report on survey conducted								
Organise national seed fairs and conference (Led by Seed Industry Development)								
- Setup an ad-hoc team to manage the conference and/or fair planning process.								
- Release resources to support the planning process								

Objectives and Activities	2020				2021			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
- Provide approval and feedback on the planning team's implementation approach and plan								
- Implement plans for the national seed fair and/or conference								
- Develop reports for the seed fair and/or conference								
Objective 2: Increasing Financial Sustainability								
Improve IGR from income generating services (Led by the different departments under which each service offering falls)								
- Benchmark the cost of service offerings								
- Set and review price of service offerings								
Setup NASC Seed Fund (Led by the Office of the Director General and Finance and Accounts Department)								
- Benchmark other Seed Funds to understand the appropriate structure to adopt								
- Engage public, private and seed industry actors to share the vision of the Seed Fund and enlist their support								
Objective 3: Increasing Operational Effectiveness								

Objectives and Activities	2020				2021			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Improve the efficiency of data collection and publishing (Led by Seed Information, Data Management and Capacity Building)								
- Deploy electronic data collection tools such as ODK, Fulcrum etc. for industry surveys								
- Conduct seed sector wide survey leveraging the regional presence								
- Publish seed industry survey report								
Improve Communication among industry stakeholders (Led by Human Resource Department & Seed Industry Development)								
- Engage a communications associate								
- Review the Seed Connect event to include upstream actors								
- Plan and execute events such as seminars, press conference and interviews								
- Develop newsletters to communicate activities to external audience								
- Engage radio and television stations with rural outreach and facilitate seed sector related programs								
- Develop a social media engagement plan and post key activities, documentaries and trends								

Objectives and Activities	2020				2021			
	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Develop and Strengthen Partnerships (Led by the Office of the Director General)								
- Complete the partnership development process with OECD, ISTA, ISF and UPOV								
- Map out development organisation to support NASC's activities over the next 5 years								
- Identify private sector partners to drive partnerships with development organisations for funding interventions								
- Reach out to private sector partners to develop program proposals for development organisation and follow through								
Improve staff recruitment process (Led by Human Resource Department)								
- Develop job descriptions for each role								
- Establish partnerships with universities of agriculture to hunt talents								
- Develop a robust staff on boarding programme								
- Develop a system to evaluate staff performance to identify knowledge gaps								
- Conduct staff performance evaluation								

XIV. Conclusion

NASC has a critical mandate to regulate and propel the Nigerian seed industry. The Seed Act signed by the government in 2019 fully empowers NASC to fulfil its role, in partnership with key stakeholders in the public and private sectors, as well as in the international community.

This strategic plan, implemented between 2019 and 2024 will position NASC as the key convener of the seed industry, lead to dramatically improved adoption and crop yields for Nigerian farmers, and support the development of Nigeria's seed sector into one that is internationally competitive.

NASC will rely on the continued support of FMARD, other related ministries, departments and agencies, SEEDAN and other international development partners to deliver impact and achieve the milestones outlined in this strategic plan.

XV. Appendices

Appendix I: External Communications Strategy

NASC will implement the proposed communication plan outlined in the table below:

Table 18: Proposed External Communication Plan

Communication Channel	Communication tools/medium	Target Audience	What to communicate	When to communicate
Events	<ul style="list-style-type: none"> Seminars Trainings 	Seed industry actors	<ul style="list-style-type: none"> Knowledge and skills sharing about specific seed subject matter. 	Quarterly
	<ul style="list-style-type: none"> Media interview Press conference 	General Public	<ul style="list-style-type: none"> Responses to national reports that are relevant to its functions in the seed industry. Availability and adoption of new and improved seed varieties. Promotion of investments for the seed industry. 	Quarterly
Print Media	<ul style="list-style-type: none"> Newspapers 	Ecosystem stakeholders	<ul style="list-style-type: none"> Special upcoming events and activities of NASC. Adverts for recruitments, trainings and key events. Press releases on impact Information on fraudsters and penalties for offenders. 	Quarterly
	<ul style="list-style-type: none"> Annual Report 		Highlights the activities of NASC in a calendar year and its impact	Annually

Communication Channel	Communication tools/medium	Target Audience	What to communicate	When to communicate
Social Media	• Facebook	• Global Community	• Connect and communicate its key activities to potential and existing partners.	Daily
	• Twitter		• Interface with local and international seed ecosystem to build professional networks. Knowledge base and share information about its activities	
	• Instagram		• NASC will share picture and video content on its activities and impact in the seed industry. •	
	• YouTube		• Video documentaries of key field activities, trainings and research innovations in the seed industry.	
	• RSS Feeds	• Subscriber	• Seed industry news and digests aggregated from various platforms and deliver to subscribers.	Daily/Weekly

Appendix II: Analysis of International Seed Regulatory Bodies.

Table 19: Analysis of International Seed Regulatory Bodies

International Seed Regulators.	Organizational Structure and staff strength.	Service Delivery (Field inspection, service offerings, charges & payment system.	Funding & financing sources	Partnerships, collaborations & memberships of international seed regulatory bodies (OECD and ISTA)	Key Lessons for NASC
<p>CHINA – Ministry of Agriculture and Rural Affairs.</p> <p>Bureau of Seed Management.</p>	N/A	<p>Production Functions</p> <ul style="list-style-type: none"> Seed Importation and export permit Regulate production, business and quality in the industry. <p>Regulatory Functions</p> <ul style="list-style-type: none"> Develops and enforces seed laws Seed Variety Registration and Certification. Crop variety protection 	<ul style="list-style-type: none"> MoARA - Ministry of Agriculture and Rural Affairs. SINOCHEM Group 	<p>International Partners:</p> <ul style="list-style-type: none"> OECD <p>Local Partners:</p> <ul style="list-style-type: none"> CNSTA – China National Seed Trade Association SINOCHEM Group <p>Membership of World Seed Partnerships:</p> <p>APSA and ISF⁶.</p>	<ul style="list-style-type: none"> Established and imposes punishments and fine on seed companies that flout the law. Strengthened various departments to be independent entities in discharging their functions and objectives.

⁶ <http://www.sinochem.com/s/1570-4813-11907.html>

		<ul style="list-style-type: none"> Seed sampling and analysis Field Inspection 			
<p>INDIA – National Seed Corporation (NSC)⁷.</p>	<p>India's NSC has a board of directors constituted to provide strategic leadership to the institution. Its operational affairs are managed by a Chairman and Managing Director (CMD). The activities of NSC are grouped under commerce and finance led by Directors; with some support responsibilities headed by General Managers. Administrative activities are driven by the finance division while services are delivered through the commerce division.</p>	<p>Production Functions</p> <ul style="list-style-type: none"> Seed Production Seed Processing Handling and Packaging Seed Marketing <p>Regulatory Functions</p> <ul style="list-style-type: none"> Seed Certification. Quality control. Training and Extension. Sales promotion and advertising. Process quality complaints by Customers. 	<ul style="list-style-type: none"> Capital Grants Loan Fund Equity shares capital Reserves and Surpluses. 	<p>International Partners:</p> <ul style="list-style-type: none"> ICRISAT. OECD <p>Local Partners:</p> <ul style="list-style-type: none"> Indian Council for Agricultural research (ICAR) Universities of Agriculture. NGO's Seed Cooperatives Private companies Individual Entrepreneurs <p>Member of World Seed Partnerships:</p> <ul style="list-style-type: none"> APSA 	<ul style="list-style-type: none"> Decentralization of Seed certification and licensing processes and activities to the state level. Establishment of seed testing laboratories at state level. Establishment of sub-committees to oversee Crop standards and release of varieties. Adequate and skilled manpower deployed across regional and area offices. Established four quality control laboratories across the major regions in India to carry out seed testing and check seed quality.

⁷ <https://www.indiaseeds.com/organisationalchart.html>

	The staff strength of the NSC currently stands at 1,471.	<ul style="list-style-type: none"> Seed distribution channels. 		<ul style="list-style-type: none"> ISTA ISF 	<ul style="list-style-type: none"> Established seed marketing and sales channels for local seed companies, dealers and distributors via an NSC owned sales counter in strategic cities. 43% of sales turnover is achieved via 2500 dealers.
<p>BRAZIL – Ministry of Agriculture, Livestock and Food Supply (MAPA).</p> <p>Department of Surveillance of Agricultural Inputs – DFIA.</p>	DFIA is a department under the ministry of agriculture which is headed by a Minister. The Minister is the head of the government in the ministry for policy direction and implementation.	<ul style="list-style-type: none"> Seeds and seedling production Seed certification Marketing and sale of seeds Field Inspection 	<ul style="list-style-type: none"> MAPA – Ministry of Agriculture, Livestock and Food Supply. Fund Grants. 	<p>International Partners:</p> <ul style="list-style-type: none"> Lemann Foundation⁸ MIT WTO <p>Local Partners:</p> <ul style="list-style-type: none"> EMBRAPA Universities <p>Member of World Seed Partnerships:</p> <p>ISF, ISTA, UPOV and OECD.</p>	<ul style="list-style-type: none"> Established seed grant support fund for research and university scientists by collaborating with partners. Conducts collaborative research with foreign institutions for the development of new varieties.
AFGHANISTAN- Seed and Planting	SPCD is a directorate under the	Regulatory Functions	<ul style="list-style-type: none"> MAIL – Ministry of Agriculture, 	International Partners:	<ul style="list-style-type: none"> Third party seed certification was

⁸ <https://misti.mit.edu/mit-brazil-seed-funds>

<p>Material Certification Directorate (SPCD)</p>	<p>Afghanistan ministry of agriculture, irrigation and livestock. It is headed by a Director General and reports to the Minister of Agriculture.</p>	<ul style="list-style-type: none"> • Seed Certification. • Field Inspection • Seed testing and analysis • Quality control. • Technical advisory support • Trainings • Seed distribution channels 	<p>Irrigation and Livestock.</p> <ul style="list-style-type: none"> • Fund Grants 	<ul style="list-style-type: none"> • EU • ICARDA • FAO • CIMMYT <p>Local Partners:</p> <ul style="list-style-type: none"> • ARIA • Panjab Agriculture University <p>Member of World Seed Partnership:</p> <p>ISF and APSA.</p>	<p>captured in the Seed law for authorized officers or bodies to carry out several activities of seed certification.</p> <ul style="list-style-type: none"> • Practical involvement of fresh graduates of agriculture as interns in field inspection and seed certification practices across the country. • Trained selected graduates at home and abroad for three months to build their technical capacity and knowledge. • Formal seed sector focuses primarily on wheat seed production because it's the main staple crop of consumption.
<p>GHANA – Plant Protection and Regulatory Services</p>	<p>The Ghanaian seed council has a constituted board of directors headed by</p>	<p>Production Functions</p> <ul style="list-style-type: none"> • Certified Seed Production 	<ul style="list-style-type: none"> • MoFA – Ministry of 	<p>International Partners:</p> <ul style="list-style-type: none"> • USAID 	<ul style="list-style-type: none"> • Private companies are actively involved in seed

<p>Directorate (PPRSD)⁹</p>	<p>a chairman. The board and the chairman are appointed by the government through the minister and reports directly to the minister.</p>	<ul style="list-style-type: none"> Plant Breeding Distribution of improved planting Materials. Seed Processing <p>Regulatory Functions</p> <ul style="list-style-type: none"> Seed Variety Registration and Certification. Plant protection Service. Crop and Diseases Management. Field Inspection. Training and Advisory Services 	<p>Food and Agriculture.</p> <ul style="list-style-type: none"> Capital Grants 	<ul style="list-style-type: none"> FEEDTHEFUTURE AGRA <p>Local Partners:</p> <ul style="list-style-type: none"> Crop Research Institute (CRI) Intl Research Institutes. NGO's/ Private companies. SEEDPAG - (Seed Producers Association of Ghana). <p>Member of World Seed Partnerships:</p> <p>n/a</p>	<p>multiplication and sale.</p> <ul style="list-style-type: none"> On-farm trials are conducted by a combined team of staffs of Crop Research Institutes, agricultural research institutes and extension agents. Established a policy dialogue platform for engaging the government and development partners.
<p>KENYA – Kenya Plant Health Inspectorate Service (KEPHIS)¹⁰.</p>	<p>KEPHIS operates an organizational structure that is governed by a board of directors,</p>	<p>Regulatory Functions</p> <ul style="list-style-type: none"> Seed Certification. Seed Testing / Laboratory Analysis 	<ul style="list-style-type: none"> Government of Kenya 	<p>International Partners:</p> <ul style="list-style-type: none"> WTO 	<ul style="list-style-type: none"> Provided a Platform that recommends seed varieties that are adaptable to

⁹ https://www.syngentaoundation.org/sites/g/files/zhg576/f/seeds_policy_ghana_seed_case_study_jan16_0.pdf

¹⁰ <https://www.kephis.org/>

	and operationally headed by a Managing Director. Its activities are spread across different departmental areas headed by departmental heads who report to General Managers and the Managing Director. Please see appendix X for the detailed organogram.	<ul style="list-style-type: none"> • Phytosanitary Services. • Food Safety Services. • National Performance Trials • Registration of seed merchants • Licensing of seed sellers • Registration of seed growers • Seed field inspections • Seed sampling and testing • Post certification surveys 	<ul style="list-style-type: none"> • Revenues from services provided • International organizations 	<ul style="list-style-type: none"> • COPE – Centre of Phytosanitary Excellence • IPPC – International Plant Protection Convention <p>Local Partners:</p> <ul style="list-style-type: none"> • University of Nairobi <p>Member of World Seed Partnerships:</p> <p>ISF and OECD.</p>	<p>farmers region via SMS.¹¹</p> <ul style="list-style-type: none"> • Established an Electronic seed certification system (ECS). • E-Human Resources Management System (HRMS) Portal. • Created an automated platform that regulates importation of plant products.
ZAMBIA – Seed control and certification Institute - SCCI	N/A	<ul style="list-style-type: none"> • Seed variety testing and registration • Grow out tests 	MoA – Ministry of Agriculture	<p>International Partners:</p> <ul style="list-style-type: none"> • World Bank • CIAT & ICRISAT 	<ul style="list-style-type: none"> • Established a DNA fingerprint center to track supply of seeds.

¹¹ <https://www.kephis.org/index.php/2014-03-25-12-07-54/2014-04-14-06-15-42>

		<ul style="list-style-type: none"> • Seed variety protection. • Seed certification and quality assurance. • Seed Sampling and research test. • Issuance of Seed testing and processors license. • Licensing seed Seller's 		<p>Local Partners:</p> <ul style="list-style-type: none"> • ZARI – Zambia Agricultural Research Institute • ZASTA – Zambia Seed Trade Association <p>Membership of Seed Bodies:</p> <p>ISTA¹² and OECD.</p>	<ul style="list-style-type: none"> • Duly established ISTA accredited laboratories. • Contacted UPOV for membership and participates in OECD Seed Schemes. • Minimum qualification for field Inspector is a Diploma while seed analyst is bachelor's in agriculture/seed technology.
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¹² http://www.syngentafoundation.org/sites/g/files/zhg576/f/zambia_case_study_final_edit_8_march_2019_clean.pdf (page 13)

Appendix III: Profiling Some African Countries and their Seed Regulatory Industry

KENYA

In Kenya, agriculture contributes 24% and 60% to the country's GDP and total exports, respectively, with key production of crops like maize and tea.

In 2010, its national seed policy birthed and gave a sustainable regulatory and development direction to the seed sub-sector. The policy also named KEPHIS as the country's seed regulator.

To efficiently deliver on its regulatory roles in the seed industry, KEPHIS has been equipped with:

- An automated e-commerce platform that regulates the importation of plant and plant products.
- Several types of laboratories to carry out and improve seed testing and analysis functions.
- Exposure to best practices through Kenya's membership with the ISTA.

In 2016, Kenya already had 492 varieties in the national varieties catalogue, 140 registered seed merchants and a seed trade association. Prominent amongst seed companies present in Kenya are;

- Monsanto
- Bayer
- Syngenta

SOUTH AFRICA

In 2015, the South-African agricultural sector contributed 2.5% to GDP, with 144billion Rands worth of export across its key crops like maize, wheat and sorghum.

The South African National Seed Organization (SANSOR) was established in 1989 to control and regulate the activities and protect the interest of seed trade members in the South African seed industry.

SANSOR is ensuring that seed regulatory activities in the country are done with competent workforce and standards by:

- Organizing a seed certification training and examination programme for individuals seeking authorization to be certification officers.
- Partnering with ISTA to organize seed science courses on seed sampling and quality assurance, which is compulsory for seed analysts in the country.

SANSOR, in 2014-2015, made a 60% and 30% increase in the fees paid for Seed registration and certification tags respectively for the purpose of sustainably meeting its increasing running costs.

Figure 3: Profiling Some African Countries Seed Regulatory Industries

SANSOR Annual Report 2014/2015 – <http://sansor.org/wp-content/uploads/2012/08/SANSOR-web-entire-doc-small-z.pdf>

Appendix IV: Knowledge Management Tools

NASC will adopt some knowledge management tools to aid the development of a robust knowledge management system to drive operational excellence. These tools will be

Table 20: Proposed Knowledge Management Tools

Knowledge Management tools	Description	Implementing Guiding Principles
After Action Reviews (AARs)	This tool will be used to elicit knowledge from NASC's staff to capture lessons learnt both during and after an activity/project within and across departments.	<ul style="list-style-type: none"> • Call a for meeting and invite the right people and create the right climate of trust, openness and commitment to learning – eliminating hierarchical statuses. • Appoint a facilitator to help the team learn by drawing out insights and knowledge on previously unspoken issues. The facilitator should be an external person disassociated from the project/team. • Find out what went well, what could be done better and share learning advise for the future. • Take down key points and insights from the discussion.
Knowledge Harvesting	This tool will be used to gather knowledge from different seed industry stakeholders with in-depth knowledge about the sector and make information gathered available to the public in a very organized and comprehensive format.	<ul style="list-style-type: none"> • Decide on the focus of discussion. • Select your experts based on the focus of discussion/subject of interest. • Develop questions to drive the discussion with the experts • Select the right harvester (interviewer). Consider people with the right skills such as strong communication, interpersonal and interviewing skills etc. • Draft responses, structure in a report format, and upload to the central knowledge repository.
Peer Assist	This tool will be used to draw knowledge from technical staff at NASC	<ul style="list-style-type: none"> • Clarify your purpose and the objective of the discussion.

	<p>before embarking on seed projects.</p>	<ul style="list-style-type: none"> • Check if the problem has been solved before • Appoint a facilitator to guide the conversation and select the right time to have the discussion. • Select relevant team members to participate in the discussion. • Share experiences and document insights. • Share document with team members present and save in the central knowledge repository.
<p>Identifying and Sharing Best Practices</p>	<p>This tool will help NASC leverage on existing knowledge that are tested and adaptable, avoid reinventing the wheel and save costs</p>	<ul style="list-style-type: none"> • Identify the specific requirements as it aligns to the seed project or activity requiring broader knowledge scope. • Discover good practice through research and thorough findings. • Document good practices using a standard template that lays out information for complete comprehension (template should include a title, profile, context, resourced required for implementation, description of processes, improvement measures, lessons learnt from past implementations and links to resources) • Validate best practices • Disseminate and apply • Develop a supporting infrastructure
<p>Event documentation</p>	<p>This tool will be used to capture information and knowledge gained through seed project activities like demonstration trials, grow out test and other field related activities.</p>	<ul style="list-style-type: none"> • Collect all information pertaining to the field activity like location, date, list of participants, learning areas, insights, questions from participants and recommendations. • Structure data collected into a report format and upload to the central knowledge repository