



NIGERIAN STORED PRODUCTS RESEARCH INSTITUTE (NSPRI)
(FEDERAL MINISTRY OF AGRICULTURE AND FOOD SECURITY)

Km 3 Asa Dam Road, PMB 1489, Ilorin

2023 – 2028 **STRATEGIC PLAN**



Postharvest Research Excellence

— 1948-2023 —



Table of Contents

FOREWORD	vi
-----------------	-----------

CHAPTER ONE

Introduction	1
1. Introduction	2
1.1 Brief History of the Institute	2
1.2 Current Status of the Institute (Where We Are)	3
1.2.1 Administrative Structure	3
1.2.2 Current Staff Strength	3
1.2.3 Research Activities and Achievements	5
1.2.4 Infrastructure	7
1.2.5 ISO Certification	7
1.2.6 Existing Partners, Linkages and Collaborators	8
1.3 SWOT Analysis	9

CHAPTER TWO

2. Vision, Mission, Mandate and Core Values	13
2.1 Vision	13
2.2 Mission	14
2.3 The Pledge of the Institute	14
2.4 The Mandate	15
2.5 Core Values of NSPRI	16

CHAPTER THREE

3. Strategic Issues	18
3.1 Strategic Issue 1 – Governance and Administration	18
3.2 Strategic Issue 2 – Human Resource Management	19
3.3 Strategic Issue 3 – Financial Resource Management	20
3.4 Strategic Issue 4 – Research Mandate	21
3.5 Strategic Issue 5 – Extension and Outreach	24
3.6. Strategic Issue 6 – Partnerships And Collaborations	25

3.7 Strategic Issue 7 – Agribusiness and Technology Commercialization	26
3.8 Strategic Issue 8 – Infrastructure and Equipment	27
3.9 Strategic Issue 9 – ICT and Information Documentation	28

CHAPTER FOUR

4. Monitoring and Evaluation	30
4.1 Monitoring and Evaluation Framework	30
4.2 Establishment and Functions of the PME Unit	30
4.3 Review of the Strategic Plan	30

Figures

Figure 1: Map of Nigeria showing NSPRI locations	3
Figure 2: Nigerian Stored products Research Institute (NSPRI) Organogram	4

Tables

Table 1. Current Staff Profile	4
Table 2: Research Achievements and Current Activities of the Institute	5
Table 3: List of National and International Partners	8



FOREWORD

The success of any organization is hinged on its commitment to its vision, mission, core values and goals, which serve as guide for its operations and development. On assumption of office on 23rd April, 2023, the key thoughts on my mind were how to consolidate NSPRI's postharvest research and outreach activities, commercialize its proven postharvest technologies and promote its global visibility. Therefore, the need to have a Strategic Plan as a blueprint which will serve as flood light to illuminate the Institute's pathways for the next eight years became imperative. This was further underscored considering that this year is the 75th anniversary of the Institute, thus, it is high time it transformed from a 'local best' to one of 'global best'.

Therefore, on the 19th of May, 2023, an 18-Man Central Working Committee (CWC) was inaugurated and charged with the task of developing NSPRI Strategic Plan (2023 – 2030). The CWC was mandated to consult relevant documents and stakeholders within the Institute; and to align its goals with National Agricultural Technology and Innovation Policy (NATIP) of the Federal Ministry of Agriculture and Rural Development (now Federal Ministry of Agriculture and Food Security) in conjunction with Agricultural Research Council of Nigeria (ARCN) policies.

The templates deployment process was decentralized and conducted simultaneously across the Departments, Zonal offices and Outstations spread across five geopolitical zones of Nigeria. The goals and projections of all sectors of the institute were captured and imbued into the strategic issues covered in this document. Thus, this Strategic Plan document reflects the wishes and aspirations of management and staff. The document has also linked planning to budget and provided a transparent mechanism for monitoring and evaluation of the various activities and the expected outputs.

I appreciate all the efforts put in place to produce this important document, especially the support of members of management staff, the tireless efforts of the CWC and the loyalty and participation of the entire staff in the whole process. Our dedication and commitment to the successful implementation of this Strategic Plan will without doubt project NSPRI as a foremost research and outreach Centre of excellence for reduction of postharvest losses in Nigeria and the West African sub-region.

Prof. Lateef Oladimeji SANNI

Executive Director/Chief Executive Officer

CHAPTER ONE



Introduction

- Brief History of the Institute
- Current Status of the Institute (**Where We Are**)
- SWOT Analysis



1. Introduction

1.1 Brief History of the Institute

Stored products research started in Nigeria by a research survey team in 1948, known as the West African Pest Infestation Survey (WAPIS) led by G. S. Cotterell. The survey team was financed by the Colonial Development and Welfare Fund of the British government. The survey team was constituted for two reasons; firstly, to facilitate quality agricultural produce from West Africa for export to Britain as feedstock for its agro-industrial needs, and secondly, to discover the origin of pest infestations of agro-shipments to the United Kingdom and proffer solutions from the source. Findings at the end of the survey in 1950 indicated the need for continuation of research into stored products and methods of quality improvement. Consequently, WAPIS became the West African Pest Infestation Research Unit (WAPIRU) and was attached to the Nigerian Department of Marketing and Export. In 1954 the unit was established permanently and was known as the West African Stored Products Research Unit (WASPRU).

On attainment of independence in 1960, WASPRU transformed into the Nigerian Stored Products Research Institute (NSPRI), under the Federal Ministry of Commerce and Industry, which later became the Federal Ministry of Trade. The mandate of the Institute was then expanded to include postharvest handling of all Nigerian food crops.

The Institute, by Decree No. 5 of 1977 became a semi-autonomous research Institute under the National Science and Technology Development Agency (NSTDA). In 1980, the Institute's supervising ministry became the Federal Ministry of Science and Technology. Although, the Federal Ministry of Science and Technology and the Federal Ministry of Education were merged between 1981 and 1985, the Ministry of Science and Technology was later restored to a separate Ministry in August 1985. In January, 1992 the Institute became a parastatal under the Federal Ministry of Agriculture where it was supervised by the Director of Agricultural Services (DAS). Since 2006, the Institute has been under the supervision of the Agricultural Research Council of Nigeria (ARCN), under the Federal Ministry of Agriculture and Rural Development (FMARD).

The Institute headquarters was at the inception located in Lagos with sub-stations at Kano, Ibadan, Port Harcourt, and Sapele. The sub-stations spread across the agro-ecological zones of Nigeria to cater for the export need of the British Colonial administration. However, in 1988, the Federal government moved the Institute headquarters to Ilorin, Kwara State, and Lagos became a sub-station like others. The Institute's activities in other parts of the country are carried out through four (4) zonal offices located in Lagos, Kano, Ibadan and Port-Harcourt and two (2) outstations – Sapele and Maiduguri which are headed by Zonal Coordinators and Officers-in-Charge, respectively. The zonal offices were created to carry out research and extension activities related to the zone, while the outstations are mainly to carry out outreach activities. The Abuja Liaison Office was established in 2018 and is located within the ARMTI Guest House at 4 Ejoor Street, Apo-Gudu, behind Adiza Plaza, Abuja. The Liaison office acts as an intermediary between the headquarters and the FMARD, ARCN and other agencies in Abuja and its environs.

Figure 1 presents the map of Nigeria showing the various locations of the Institute’s offices and facilities.

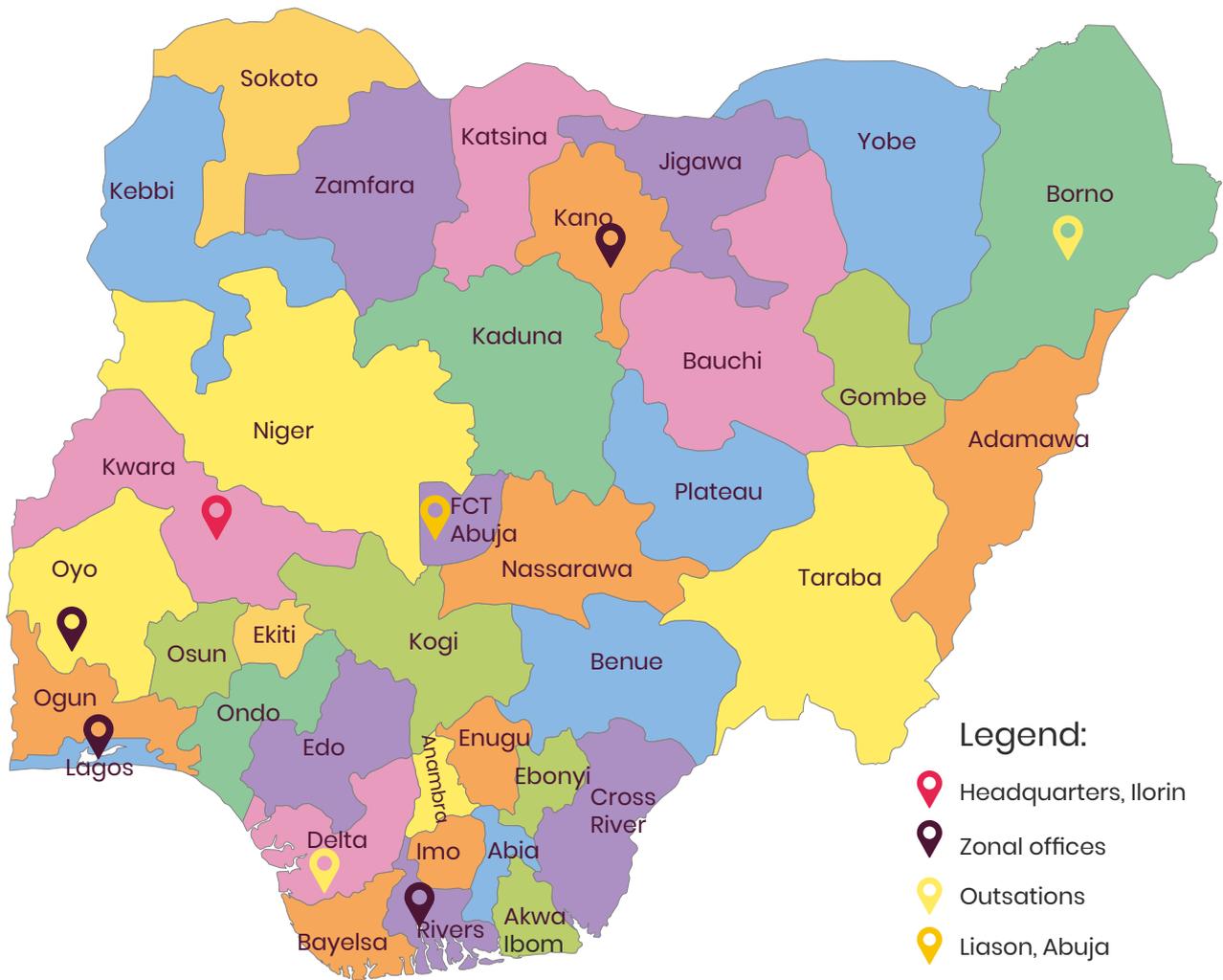


Figure 1: Map of Nigeria showing NSPRI locations

1.2 Current Status of the Institute (Where We Are)

1.2.1 Administrative Structure

The Institute’s Management Committee (IMC) comprise of the Executive Director as the chairman with Heads of Departments and Director, Internal Audit Unit as members. The Head of Administration serves as the Secretary of the IMC. The Executive Director oversees the day-to-day activities of the Institute. The Executive Director’s office comprises Internal Audit, Procurement, Public Relations, Information and Communication Technology (ICT), Legal and Property Unit and Consultancy Services. It also coordinates the activities of the Zonal offices/Outstations and the Abuja Liaison office. The Institute has eight (8) departments, namely; Research Operations, Perishable Crops Research, Durable Crops Research, Post-Harvest Engineering Research, Research Outreach, Information and Documentation, Administration and Finance and Accounts. The organogram of the Institute is presented in Figure 2.

1.2.2 Current Staff Strength

The Institute currently have 536 staff spread across the head office, zonal offices, and outstations. The staff comprised 311 males and 225 females. Table 1 indicates the current staff profile across the various departments.

NIGERIAN STORED PRODUCTS RESEARCH INSTITUTE (NSPRI) ORGANOGRAM

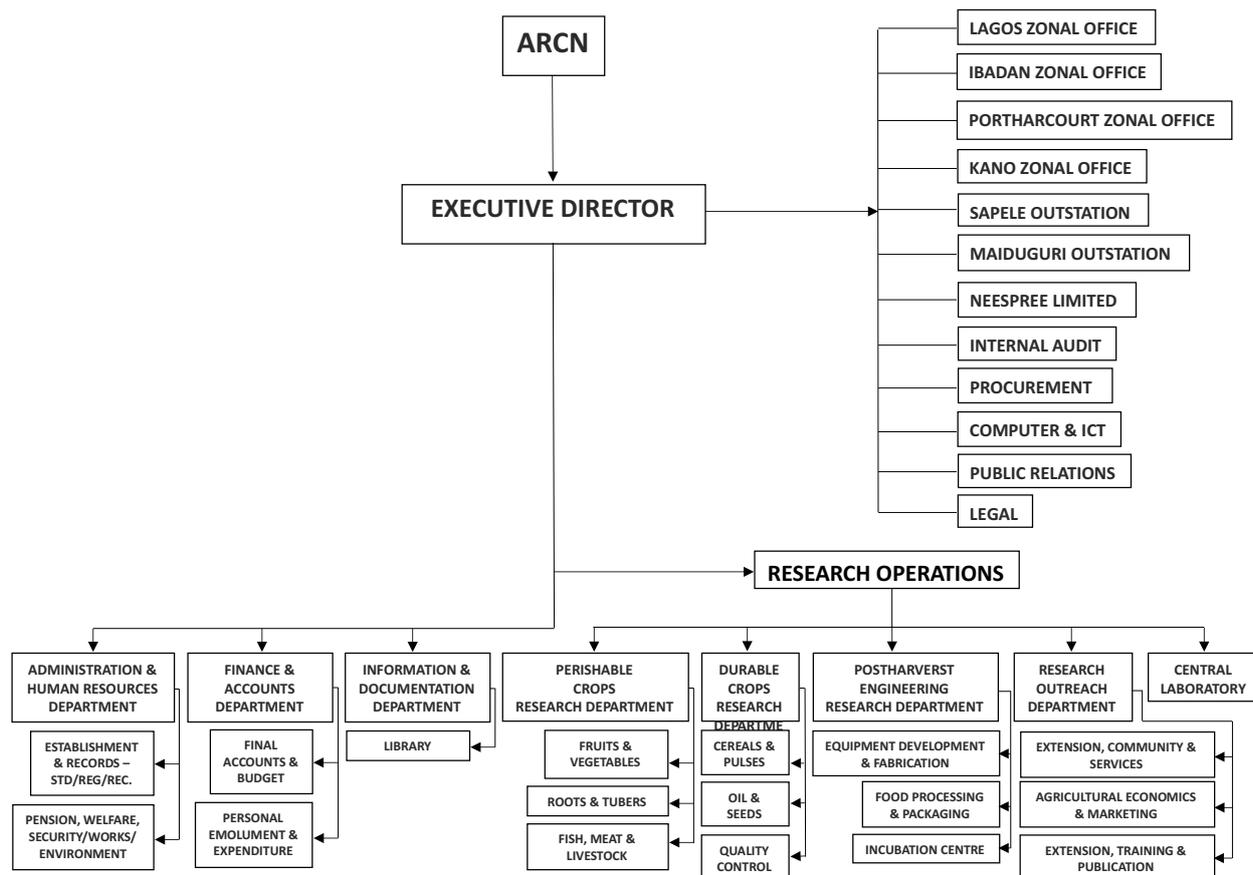


Figure 2: Nigerian Stored products Research Institute (NSPRI) Organogram

Table 1. Current Staff Profile

S/N	Department/ Unit	Number of Staff		
		Total	Male	Female
1	Research Operations	52	21	31
2	Durable Crops Research	54	30	24
3	Perishable Crops Research	79	42	37
4	Research Outreach	62	38	24
5	Post-Harvest Engineering Research	32	29	3
6	Information and Documentation	7	5	2
7	Administration	163	88	75
8	Finance and Accounts	39	27	12
9	Internal Audit	13	10	3
10	Procurement	6	5	1
11	Information and Communication Technology	19	9	10
	Total	526	304	222

1.2.3 Research Activities and Achievements

The research focus of the institute has consistently been in accordance with its mandate and coverage. The research activities and significant achievements of NSPRI from 2015 to date are enumerated in Table 2.

Table 2: Research Achievements and Current Activities of the Institute

S/N	Achievements (2015 – 2022)	Remarks
1.	Accreditation of NSPRI central laboratory as ISO 17205 2017 certified laboratory	NSPRI now have a laboratory where analysis can be done with quality assurance (credible, reproducible and robust) and globally accepted results.
2.	Development of improved vegetable baskets for storage of leafy vegetables	The improved vegetable basket is a suitable retail technology for reducing postharvest losses in leafy vegetables at the market level. Its increased use will stem the tide of chemical use in preservation of leafy vegetables.
3.	Development of NSPRIDUST® for safe storage of grains	NSPRIDUST® has been proven to be effective for safe storage of grains. Its commercialization will bring the challenges of food poisoning under control.
4.	Establishment of postharvest incubation centre (in Kano, Ilorin, and Port Harcourt) for training of SMEs on Agro-processing.	The project has stimulated economic growth among the beneficiaries. Products registration with NAFDAC has also been facilitated.
5.	Development of Solar Cooling Storage System (SCSS) for shelf-life extension of fruits and vegetables.	The solar cooling facility is an off-grid cooling facility suitable for preservation of fruits and vegetables especially at the rural areas. The Institute has constructed 2 units in Ilorin and 1 unit in Kano. The utilization of the system will ensure reduction of postharvest losses and improved marketing of fruits and vegetables.
6.	Development and installation of Two tonnes capacity Parabolic Solar Dryers commodities in 37 communities spread across 30 states in Nigeria.	The parabolic shaped dryer is now available in almost every state in the country. This has led to improved and hygienic drying of crops, increased farmers' income, and reduction in postharvest losses.
7.	Development and installation of Tent dryers for improve and hygienic drying of agricultural commodities in Kwara State	This design has been discontinued due to low performance and problem of moisture absorption during the night.
8.	Fabrication and distribution of 275 units of Fish smoking kilns for improved fish processing among women and youths across the country.	The Smoking Kiln is the most sold NSPRI's technology. Various capacities have been sold to fish processors across the country. This technology has improved the processing of smoked fish in the country.
9.	Assessment of aflatoxin, Polycyclic Aromatic Hydrocarbons (PAHs) and Hydrocyanide content of some dried products sold in supermarkets in Nigeria	The project established that "gari" sold in supermarket across the country are safe for consumption. However, there's a need to improve the processing of other dried products to safeguard the health of the consumers.
10.	Establishment of Biogas station at Ago-Oja farming community, Kwara State in collaboration with WAAPP.	This enabled farmers to access biofuel for rural electrification and domestic use.

S/N	Achievements (2015 – 2022)	Remarks
11.	Establishment of 17 Agricultural Research Outreach Centres (AROCs)	Two of the centres were recently established at Rivers State University, Port Harcourt and Michael Opara University of Agriculture, Umudike. The AROCs serves as the Institute's postharvest hubs to showcase and demonstrate her technologies for better popularization.
12.	Empowerment of 1,842 NYSC members, farmers, and vulnerable women and youths with NSPRI technologies across the country	These empowerment projects help to increase the proportion, shelf life and export potentials of hygienic food products in Nigeria. These beneficiaries also serve as NSPRI Ambassadors for safe and hygienic food value-addition across the nation, thereby reducing unemployment rate in the country.
13.	Capacity building for 2160 ADPs, farmers, and commodity handlers on postharvest management, business opportunities and pesticides handling in storage and cottage production of processed agricultural products across the country.	These trainings have impacted the farmers to transport fresh and processed products with less risk of spoilage. Also, knowledge of appropriate pesticides handling is essential to prevent health hazards associated with pesticide residue and direct health risk during application of agrochemicals. The ADP extension agents aid the popularization of postharvest technologies and their usage among the end users through her Technological Review Meetings.
14.	Production of documentary on processing of hygienic yam chip, drying of agricultural commodities and utilization of inert atmosphere silo.	The documentaries (video clips) are available at free of charge for farmers, processors, and other stakeholders. This will improve the quality of yam chips, dried commodities and grains.
15.	Provision of Advisory and technical services to 119 agribusinesses across the country	This service aids the effectiveness and sustainability of each agribusiness to blend their vision with global standards.
16.	Expansion of the library complex	This expansion aids the accommodation of more library equipment and users.
17.	Establishments of NSPRI E-library and serial section	The E-Library house some online database and assisted users in accessing articles from AGORA
18.	Deployment of wireless local area network and provision of internet services to headquarters and Lagos zonal office	This has made it possible for staff members to source for information on the web with ease
19.	Creation and update of NSPRI social media platforms	The creation of the social media platforms has given NSPRI a wider reach and global visibility of its activities.
20.	Establishment of library in Sapele outstation	The establishment of library has helped in making scholarly information accessible to users

S/N	Achievements (2015 – 2022)	Remarks
	ONGOING ACTIVITIES	REMARKS
1.	Development of a Standard Operating Procedure (SOP) for processing of value-added tomato products to empower start-ups in agri-processing	The SOPs will provide a standard recipe to produce value-added products from tomatoes and other fruits and vegetables.
2.	Development of Bio-Polymeric-Nanoparticles Composite edible Coatings for Post-Harvest Management of Perishable Commodities.	The technology will improve handling and storability of fresh fruits and vegetables.
3.	Establishment of appropriate dosage of NSPRIDUST for the control of storage insects in North-West, North-Central, and South-South.	The project will establish appropriate application rate for effective utilization of NSPRIDUST. This will provide needed data for the registration of the product and consequent commercialization of NSPRIDUST as a grain protectant in Nigeria.
4.	Formulation of biopesticides from plant materials as substitute for synthetic pesticides in the control of stored products pests	The formulated biopesticide is expected to be a sustainable alternative to synthetic pesticide.
5.	Production of Aflatoxin standards for control of mycotoxin in grains	The project is expected to provide a cost effective and efficient means of aflatoxin testing in Nigeria.
6.	Modification of solar cold storage system for seeds storage	The project when completed will reduce operating cost of seed companies and boost seed storage in the country.
7.	Development and installation of Solar cold storage system for preservation of fruits and vegetables in Kano and for fresh fish, meat and milk in Ilorin	The systems have been installed and they are under evaluation.
8.	Development of solar cold storage system for preservation of fresh fish, meat, and milk	Materials for construction have been procured, the base has been constructed and the unit will be completed in September, 2023.
9.	Development of zero energy cool barn for storage of sweet potatoes	The zero-energy cool barn works on the principle of ECS. A one (1) tonne capacity structure has been constructed and its evaluation is ongoing.

1.2.4 Infrastructure

The Institute presently has office buildings, laboratory complexes, libraries, conference halls, and incubation centres (located at the headquarter, Kano and Port Harcourt). Maiduguri is currently being accommodated in Lake Chad Research Institute (LCRI) complex, while Abuja Liaison Office is currently accommodated in ARMTI's Guest House, Abuja. The Institute has a 150-seat capacity conference hall at the headquarter which is used to hold training workshops, seminars and exhibitions.

1.2.5 ISO Certification

The institute laboratory in Ilorin is ISO certified. Up to date renewal of ISO certification for Ilorin laboratory will be sustained while ISO accreditation and certification for Kano, Port Harcourt and Lagos laboratories is being pursued with vigour to position NSPRI as a centre of excellence in mycotoxin analysis, pesticides residue and pesticide formulations.

1.2.6 Existing Partners, Linkages and Collaborators

The Institute enjoys good partnership with corporate bodies nationally and internationally. Some of these partners are: The World Bank-assisted Agro-Processing, Productivity Enhancement and Livelihood Improvement Support (APPEALS) CEFTER (Benue State University), NAFDAC, NGOs, CBOs, CSOs, USDA-FAS, University of Wageningen, Netherlands. These partnerships will be sustained while efforts will be intensified to create avenues for more partnerships.

At the National level, the Institute have good linkages with NARIs, ADPs, most Nigerian Universities, Polytechnics, Colleges of Agriculture and Education; State governments, Agro-industries and NDE. Specifically, the Institute has existing MoU with University of Ilorin, Michael Okpara University of Agriculture, Umudike, Summit University, Offa and Rivers State University of Science and Technology, Port Harcourt. At the International level the Institute is linked with WAAPP, ITOCA, UNDP, FAO, WECARD/CORAF, UKAID, USAID, FARA, IFAD and has also signed MoU with IITA, and Mycotox Centre, Belgium.



Table 3: List of National and International Partners

NATIONAL PARTNERS	INTERNATIONAL PARTNERS
University of Ilorin	WAAPP
Michael Okpara University of Agriculture (MOUA), Umudike	ITOCA
Summit University, Offa	UNDP
Rivers State University of Science and Technology, Port Harcourt	IITA
National Root Crops Research Institute, (NRCRI), Umudike	FAO
NDE	WECARD/CORAF
ADPs	UKAID
	USAID
	FARA
	IFAD
	Mycotox Centre, Belgium

1.3 SWOT Analysis

The Strengths, Weakness, Opportunities and Threats (SWOT) of the Institute were evaluated using the following questions:

- i. What are the areas of strength of the Institute which can be enhanced and/or harnessed?
- ii. What are the specific weaknesses of the institute and how can such be improved upon?
- iii. What are existing or future opportunities that the institute can leverage upon to reduce its vulnerability and weaknesses?
- iv. What are the existing and potential threats to which the institute is vulnerable and how can such be surmounted?



- » **Unique National Mandate** – The Institute is strategically positioned as the only research Institute with a mandate in postharvest research management in Nigeria and sub-Saharan Africa
- » **Geographical Location Spread** – The spread of the zonal and outstation offices of the institute across the agroecological zones positioned it to do postharvest research and extension services adaptable anywhere in the country.
- » **Availability of Internationally Certified Laboratory** – The Institute has an ISO-certified laboratory (ISO 17025:2017) hence, the integrity of research output of the Institute is top-notch.
- » **Experienced and versatile staff:** The Institute boast of experienced staff with unrivaled expertise in postharvest management which gives credence to the quality of its research output. This provides a platform for mentoring young officers for a seamless succession plan and sustainable growth.
- » **Proven Postharvest Technologies** – that could be explored by households, smallholder farmers, and other stakeholders for effective postharvest loss reduction.
- » **Multidisciplinary R & D** – The Institute is endowed with experts in various disciplines e.g. Entomologists, Microbiologists, Biochemists, Food Scientists, Agricultural Engineers, Rural Sociologists, Agricultural Extensions, and Bio-Statisticians among others.



WEAKNESSES

- » **Slow rate of adoption of Institute's Technologies** - The slowness in adopting the Institute's proven postharvest technologies by the host communities due to poor feedback mechanism, popularization and commercialization are major drawbacks. This affects the image and societal relevance of the Institute.
- » **Low Publicity of Institute's Postharvest Achievements** - Low awareness in informing the public about the Institute's postharvest achievements has been a factor in mitigating publicity or popularization of the Institute's postharvest achievements.
- » **Limited Intellectual Property Rights on some Developed Technologies:** This is preventing the Institute from reaping maximum benefits of its research outcomes/inventions.
- » **Inadequate Postharvest Data Collection and Management System** - This has limited the visibility and dissemination of the Institute postharvest publications and breakthroughs.
- » **Poor Work Ethics and Commitment** - lack of reward system, opportunities, and motivation reduce staff commitment to work.
- » **Inadequate Staff Training** - Capacity building of the Institute's staff has been grossly inadequate.
- » **Poor digitalization of the Institute's operations** - Record keeping of personnel information and other operations are still manually done which hinders easy and timely access to information



OPPORTUNITIES

- » **Opportunity to Reduce Postharvest Wastages** - The huge postharvest losses in Nigeria are opportunities for the Institute to investigate the causes and proffer solutions.
- » **Awareness of the Importance of Food Quality and Safety** - An increased awareness among the public on the importance of food quality and safety positions the Institute for relevance and to get more funding from government and donor agencies.
- » **Funding Agencies and Collaborations** - Availability of many funding agencies that the Institute can approach for research funding, as well as research linkages, partnerships and knowledge transfer and/or sharing.
- » **Public-Private-Partnership:** - The Institute has training facilities, processing equipment, proven postharvest facilities, and Incubation Centres at the headquarters and Zonal Offices. Therefore, this is a huge opportunity for Small and Medium Enterprises (SMEs) and a fertile ground for public-private partnership (PPP)
- » **Information and Communication Technology (ICT)** - The advancement that has been made in ICT is a great opportunity for the Institute to make itself accessible to the global community for recognition.



THREATS

- » **Policy Instability** - Inconsistencies in National agricultural policies and programs coupled with frequent leadership changes that cause abandonment of projects and lack of sustained efforts in solving postharvest problems.
- » **Overlap of mandates and lack of synergy** - Overlapping of the Institute's mandates with other research Institutes leads to duplication of research efforts and lack of specialization; this gives room for competition instead of collaboration, thus hampering synergy.
- » **Poor Funding** - Paucity of funds as well as delayed budget disbursement from the government negatively affects research output.
- » **Brain Drain** - The negligence of the research sector by the government, unfavorable condition of service, poor reward system of civil service, and the wide margin between the remuneration of research institutes and some government agencies or parastatals, have led to the migration of competent and resourceful officers out of the Institute.
- » **Frequent Industrial action** - Incessant industrial actions by the Labour Unions as a result of the government's failure to honor agreement with the unions result in unplanned downtime which hampers work plan execution in the Institute, thus disrupting planned research activities.
- » **Insecurity** - The insecurity in the country and youth restiveness in some rural communities have curtailed outreach activities of the Institute, even in project monitoring exercises.

CHAPTER TWO



Vision, Mission, Mandate and Core Values

- » Vision
- » Mission
- » Pledge
- » Mandate
- » Core Values

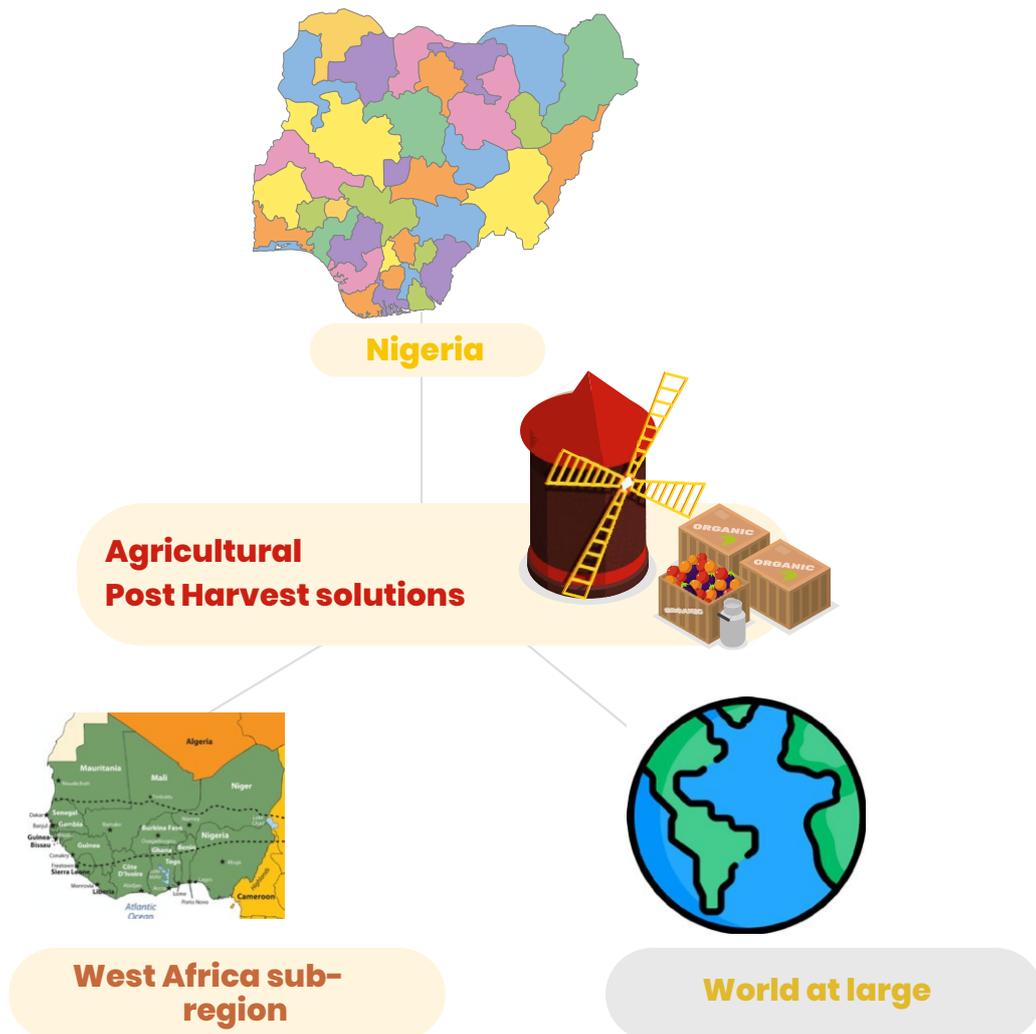




2. Vision, Mission, Mandate and Core Values

2.1 Vision

To be a world class provider of agricultural postharvest solutions in Nigeria, the West African sub-region and the world at large.



2.2 Mission

Reducing postharvest losses by improving the quality, safety, and availability of agricultural produce.



2.3 The Pledge of the Institute

NSPRI is poised:



To be regarded as a formidable institution

To deliver effective and affordable postharvest technologies

To reduce postharvest losses in Nigeria leveraging on our core values and the strength of our experts.

2.4 The Mandate

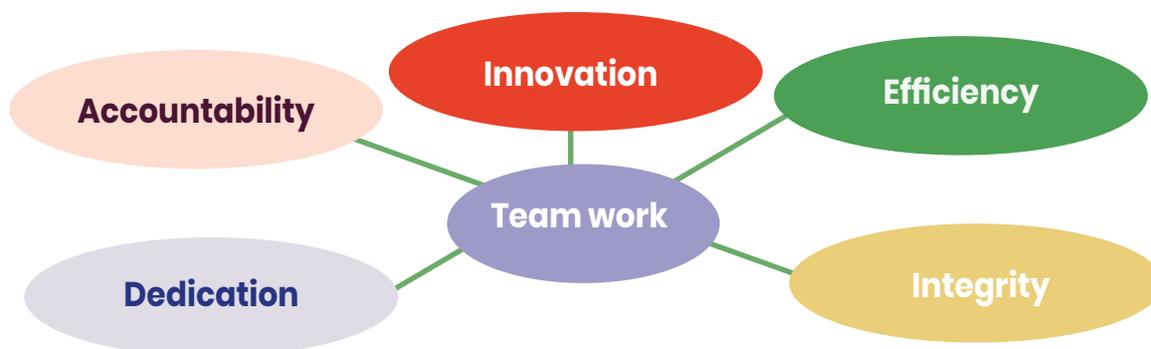


The Institute shall, in particular, conduct research into:

- a. Improvement and maintenance of quality of perishable crops including all roots and tuber crops, fruits and vegetables and other such crops.
- b. Improvement and maintenance of the quality of durable crops including cereal grains, pulses, and oil seeds from the farm level to the commercial level including export.
- c. Improvement and maintenance of the quality of tree crops including cocoa, kola, palm produce, coffee, cashew, and shea nut.
- d. Designing, fabricating, and developing postharvest equipment to the pilot plant stage. Specifically, conduct studies into the improvement of food storage structures, primary processing equipment, and food packaging technologies.
- e. Improvement in the primary processing methods of livestock products including milk, meat, fish, and related products and conduct research into packaging and proper storage of dried meat and fish, and related products to maintain quality.
- f. Provision of methods to improve the skill and build capacity in post-harvest technology through formal training of farmers, industrialists, food handlers, inspectors, and extension workers in food preservation techniques.
- g. Develop food standards to improve the quality of food commodities after harvest which will aid in the marketing of produce in both local and export markets.
- h. Conduct studies on the impact assessment of technologies and processes developed by the Institute.
- i. Provide advisory services on postharvest food handling and preservation.
- j. Conduct special studies on stored product pests, pesticide formulation, and mycotoxin surveys.
- k. Create a database for published research findings and a human resources directory in post-harvest science.

2.5 Core Values of NSPRI

Our core values define who we are and what we believe in – they represent the heart of the Institute



These values shall be the guiding principles that will set standards for the attitude and operations of staff in performing their duties.

CHAPTER THREE

Where We Want To Be – Strategic Issues

- » Governance and Administration
- » Human Resource Management
- » Financial Resource Management
- » Research Mandate
- » Extension and Outreach
- » Agribusiness and Technology Commercialization
- » Partnership and Collaboration
- » Infrastructure and Equipment Management
- » Information and Communication Technology





3. Strategic Issues

3.1 Strategic Issue 1 – Governance and Administration

3.1.1 Strategic goal:

To foster a transparent and focused leadership of the Institute and build an enabling environment for fulfilling its vision and mission.

3.1.2 Framework for action:

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Ensure a disciplined and motivated workforce	Improved manpower management	Systematic and transparent appointments/ application of Pyramidal structure	Appropriate staff mix ratio	IMC through the Director of Administration	2023-2030	Phased funding
		Build leadership capacity through training and retraining	Number of Staff undergone training			
	Boost Staff Morale and productivity through enhanced welfare	Provision of operational Vehicles	Number of additional official vehicles Level of Patronage			
		Establish good reward system for serving and retiring staff	Number of staff, recognized or rewarded for exceptional performance			
Strengthen Security system	Engage competent Security firm	Provision/ installation of digital security equipment	Number of digital security installations			

3.2 Strategic Issue 2 – Human Resource Management

3.2.1 Strategic Goal:

To employ and retain a crop of well trained and highly motivated staff and provide welfare packages for enhanced productivity.

3.2.2 Framework for Action

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Employ and retain qualified staff	Adopt systematic and transparent mechanisms for positions across Departments and Units	Staff recruitment based on approved guidelines of the Federal Government and ARCN	Proportion of additional Staff employed across departments	Management	2023–2030	Phased funding
Ensure adequately motivated workforce	Support staff development and Capacity building	Provision for scientific conference and training	Number of Staff sponsored for Conferences and training	Heads of Departments		
		Ensure regular promotion of deserving staff	Adherence to yearly promotion calendar	Staff Appointment, Promotion and Discipline Committee		
		Provision and upgrade of working facilities and offices	Adequate and standard furnished offices for all categories of staff	Management		
	Support training of researchers for higher degrees	Provision of training fund /scholarship	Proportion of staff trained	Heads of departments/ management		

3.3 Strategic Issue 3 – Financial Resource Management

3.3.1 Strategic Goal:

To adopt an efficient, secured and responsible financial management system that will allow the Institute to deliver on its core mandate.

3.3.2 Framework for Action:

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Asset management	Adherence to Federal Government accounting standards	Keeping accounting records on asset and store	Availability of updated records	Finance and accounts	2023–2030	Phased Funding
	Budget planning and implementation	Budget preparation	Timely budget preparation for each financial year	Departments and Management		
Provision of standard financial report	Records keeping in line with FGN regulations and standards	Preparation of Financial report	Availability of annual financial statements and records	Accounting Officers		
Ensure adequate Internal control	Strengthen the Audit Unit to implement control measures	Regular Audits of books of accounts, stores and inventory	Absence of fraud	Audit Unit		
		Ensure compliance with regulations in financial transactions	Reduction of financial wastes. Timely project execution	Procurement Unit		

3.4 Strategic Issue 4 – Research Mandate

3.4.1 Strategic Goal

To advance multidisciplinary research to generate solutions for improved storage, quality and safety of agricultural commodities and reduction of postharvest losses.

3.4.2 Framework for Action

3.4.2.1 Durable Crops Research Department (DCRD)

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Reduction of losses, wastage and quality preservation of durable crops	Develop low risk postharvest technologies	Formulation of biopesticides from locally sourced materials	Number of products and validation data on effectiveness. Number of published scholarly outputs	Researchers in DRC D	2023-2030	Phased funding
		Develop Hermetic bags for grain storage				
	Field monitoring of mycotoxin contamination of pulses, cereals and oilseed	Development of Biosensors	Validation data for effectiveness			
	Monitoring quality of durable crops in markets	Periodic sampling of selected crops for mycotoxin contamination and pesticide residue	Published data of survey on NSPRI website			
	Develop value added products	Utilization of Agricultural wastes	Number of products			
		Develop nutrient dense products from underutilized crops	NAFDAC registration of products			
	Application of Biotechnology in Insect pest control	Evaluate population density of specific insect pests	Published survey data			

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
		Genetic modification of specific insect pests	Field trials and data on effectiveness			
		Establish NSPRI insect collection museum	Number of Insect collected			

3.4.2.2 Perishable Crops Research Department (PRCD)

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Reduction of losses, wastage and quality preservation of perishable crops	Development of postharvest technologies for extended shelf life	Formulation of edible coating for mandate crops	Data and validation of effectiveness. Scholarly publications	Researchers in PRCD	2023-2030	Phased Funding
		Formulation of biodegradable active packaging	Data and validation of effectiveness			
		Evaluate controlled atmosphere storage technologies (CAS) and modified atmosphere packaging (MAP)	Data on established conditions for specific crops			
	Application of Nanotechnology	Develop nano-films and packaging for preservation of fruits and vegetable	Data on validation for effectiveness			
		Develop nano-biosensors for pathogen detection in packaged produce				
		Develop ice flake system for extending shelf life of fishery and livestock products				
	Quality assessment and monitoring of perishable crops in markets	Periodic sampling and evaluation Aflatoxin M1, M2 in dairy products	Published data of survey on NSPRI website			
		Evaluation of smoked fish and meat products for PAHs				
	Value addition	Development of value added products from underutilized perishable crops	Number of products and NAFDAC registration			

3.4.2.3 Postharvest Engineering Research Department (PHERD)

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Improve performance of existing technologies	Optimization studies	Collection of data on performance of existing technologies; PSSD, smoking Kiln, Inert Atmosphere silo, etc.	Data on performance of existing Technologies and level of improvement	Researchers in PHERD	2023-2030	Phased funding
Advance storage and quality of commodities via application of emerging technologies	Develop new structures and system	Develop digital solutions, computer vision	Number of new structures and system successfully developed			
		Develop active storage for yam				
		Develop inert atmosphere storage system				
Enhance storage facilities in communities	Promotion of Modular storage facilities	Fabrication and construction of 50 tons Inert Atmosphere silos in 3 states in each geopolitical zone	Successful delivery and installation of storage silos			
		Construction of solar cold storage system in communities across six geopolitical zone	Number of solar cold storage system			

3.5 Strategic Issue 5 – Extension and Outreach

3.5.1 Strategic Goal:

To develop capacity for dissemination of research findings and promote adoption of postharvest technologies by end users.

3.5.2 Framework for Action:

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Promote wider dissemination and sensitization on NSPRI technologies	Increase Coverage of NSPRI technologies and innovations	Establish Postharvest Hubs across zones in Nigeria	Number of Hubs established and relevant technologies promoted	Outreach department	2023-2030	Phased funding
	Sensitization and Training	Mass media (Radio and TV) and Social media communication	Number of TV and Radio Programmes and Contents on social media			
		Postharvest field training for farmers, women and Youth in Agriculture	Number of trained farmers			
	Increase the number of out-station in the country	Establish South east outstation	Establishment and take off of outstation in the South east	Management		
Improve NSPRI technologies	Establish platforms for feedback from end users	Stakeholders interactions and meetings	Rate of Technologies adoption	Outreach department		
	Economic assessment and marketing of NSPRI proven Technologies	Organization of research fair, open days, etc.	Numbers of proven technologies developed	Outreach department		
Appraisal of NSPRI incubation Centre in Ilorin, Kano, Port-Harcourt	Monitoring and Evaluation	Collection of quantitative and qualitative data, FGDs/KII/daily activity profile	Effectiveness of incubation Centres	Staff of M&E Unit		
Postharvest loss assessment and price profile of agricultural commodities	Survey on selected crops across six geopolitical zones	Price collation data collation on Postharvest practices	Quarterly data base published	Outreach department		

3.6. Strategic Issue 6 – Partnerships And Collaborations

3.6.1 Strategic Goal:

To foster interactions and engagement with relevant Institutions within and outside Nigeria towards fulfilment of our mandate

3.6.2 Framework for Action:

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Promote continuous interactions with relevant entities	Creating linkages for partnerships and collaboration	Signing of MOUs with new linkages Strengthen old linkages	Number of active MOUs	Management	2023-2030	Phased funding
Encourage and support research collaboration	Build capacity of researchers to engage in collaborative research	Reposition the grants management office	Number research collaborations obtained,	The Executive Director		
		Conduct staff training in grantsmanship	Increase in IGR from grants and collaborative projects	Staff training and development committee		
		Development of proposals for donor agencies	Number of proposals accepted for funding by donor agencies	Researchers		

3.7 Strategic Issue 7 – Agribusiness and Technology Commercialization

3.7.1 Strategic Goal:

To adopt a business approach in promoting commercialization of NSPRI's proven technologies.

3.7.2 Framework for Action:

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Promote visibility and commercialization of NSPRI's research findings and technologies.	Catalogue of products and proven technologies on various platforms	Organize research and technology exhibition	Number of exhibition and spread	Management	2023-2030	Phased funding
		Develop database of products and Technologies	Database of products	ICT and relevant staff of technical departments		
		Patent registration for products and technologies	Number of patents registered	Staff of DRCD, PRCD, PHERD,		
	Engage private investors and industry participation	Develop business proposals	Number of technologies scaled up to commercial levels	Finance and accounts department and staff of relevant technical departments		

3.8 Strategic Issue 8 – Infrastructure and Equipment

3.8.1 Strategic Goal:

To develop infrastructure and ensure provision of equipment and facilities that will make the Institute a conducive environment for optimum performance and productivity.

3.8.2 Framework for Action:

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Provide adequate space for all departments	Construction of new buildings and rehabilitation of existing facilities	construction of office complex for PHERD, PCRD, DCRD, ICT	Number of new office complex Number of rehabilitated facilities	Management, Finance and Accounts Department Procurement unit	2023-2030	Phased funding
		Acquisition of office building for the Institute's liaison Office in Abuja	Functional office in Abuja	Management, Works and Maintenance		
Provision of laboratory equipment	Ensure adequate investment in laboratory facilities	Procurement of Laboratory equipment	Number of Laboratories adequately equipped	Management		
Ensure an effective maintenance and facility management system	Policy formulation to enhance maintenance	Conduct regular maintenance of equipment and facility	reduction in number of unserviceable equipment, State of buildings and complexes	Works and maintenance unit		

3.9 Strategic Issue 9 – ICT and Information Documentation

3.9.1 Strategic Goal:

To establish a robust capacity in deploying ICT and digital transformation in all activities of the Institute.

3.9.2 Framework for Action:

Objectives	Strategies	Activities	Performance Indicators	Responsible Officer	Time Frame	Cost
Achieve digital transformation	Develop ICT infrastructure	Digitalization of Departments across zones and stations	Internet services in all Departments	Management ICT unit	2023–2030	Phased funding
		Regular update of website and social media platforms	Active website and updated platforms	ICT Unit		
		Provision adequate Computer systems	Number of departments with digitalized operations	ICT Unit		
Improved access to Information	Digitalization of Library services	Establish e-library	Number of subscription to databases	ICT Unit		
		Provision of computers and internet facilities	Number of additional computers	Management ICT unit		
	Build capacity of staff in ICT	Conduct Training for different categories of staff	Number of staff with ICT proficiency	Management ICT unit		

CHAPTER FOUR

Monitoring and Evaluation

- Monitoring and Evaluation Framework
- Project Monitoring and Evaluation (PME) Unit
- Review of the Strategic Plan



4. Monitoring and Evaluation

4.1 Monitoring and Evaluation Framework

A Strategic Plan is only as good as the execution of its goals. The success of this Strategic Plan (2023–2028) depends on the existence of a precise and realistic framework for monitoring and Evaluation (M&E). This will allow the institute to track her development in real time and make any required adjustments.

The goals of the M&E framework are to:

- i. Ensure that every action is taken to implement the strategic plan.
- ii. Collect and collate data of activities and outcomes
- iii. Provide data to assess performance of the strategic plan.
- iv. Ensure prompt, evidence-based decision-making.

4.2 Establishment and Functions of the PME Unit

The approach to the M&E framework is to constitute a Project Monitoring and Evaluation (PME) Unit. The PME Unit shall coordinate M&E functions in collaboration with different departments and Units through the following:

- i. Key Performance Indicators (KPI) – Already included in the framework for action under the strategic issues
- ii. Assessment Instruments – to be developed by the PME Unit and relevant responsible departments/ units and executed yearly
- iii. Evaluation audits – to be done biannually
- iv. Achievement records – to be updated from time to time
- v. Challenges records – to be updated from time to time

4.2.1 Key Questions for M&E

The PME Unit shall obtain data for M&E by seeking answers to the following questions:

1. Is the Institute moving in the direction of achieving the strategic goals? If yes, at what rate? If no, what is the corresponding action?
2. Are the strategic objectives being achieved? If yes detail progress. If no, detail challenges.
3. Are the goals and objectives still realizable under the prevailing conditions? Do they need to be reviewed or the priorities adjusted in line with realities?
4. Is the mobilization of resources sufficient to achieve the goals?

4.3 Review of the Strategic Plan

The report of the progress and level of implementation of the Strategic Plan as well as identified challenges would be studied with a view to strengthening the weakness and improve on the strengths. This will involve the following:

- a. Quarterly Assessment and Report by the PME Unit
- b. Monitoring and Evaluation Committee review meetings
- c. Feedback mechanisms



Postharvest Research Excellence
— 1948-2023 —