



KADUNA STATE POLICY ON AGRICULTURE



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FEBRUARY 2021



KADUNA STATE POLICY ON AGRICULTURE



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Policy Statement

To ensure sustained growth in the agricultural Sector of Kaduna State through multi-Stakeholders' approach for attainment of food and nutrition security, meet industrial demand and stimulate employment

Vision

To make agri-business the leading contributor to the Kaduna State Economy

Mission Statement

To provide an enabling environment for agri-business development through the efficient management of abundant human and natural resources, deployment of improved technologies and market facilitation for an inclusive, sustainable and profitable agricultural enterprise.

FOREWORD

The Kaduna State Government seeks to build human capital by promoting equality of opportunity and empowering people to use their initiative and hard work. We seek to expand economic opportunities and deliver prosperity and social inclusion.

Kaduna State has a competitive advantage in agriculture, based on its vast arable and well-watered land. The government's vision is to improve agricultural productivity, investment, value addition, transfer of capital to rural communities and promote competitive markets.

The Kaduna State Agriculture Policy has been developed to provide guidance for holistically scaling up the agricultural sector to meet the global challenges in the agri-food and value chain systems by moving the State to most outstanding position in agricultural productivity, agribusiness, women and youth inclusion, financial and social inclusion, and employment generation.

The State Agriculture Policy is an all-inclusive document that aligns the existing policies and the State Development Plan, primarily designed through a consultative process by major stakeholders, to guide our agricultural programs for economic prosperity and wealth creation, among all actors. Besides, the plan has provided the guiding principles, priority areas, target beneficiaries and geographic focus among value chains of competitive advantage across the State.

The largest active foreign direct investment in Kaduna is in agriculture: the \$150m Olam poultry project. The N15bn Damau Milk project is being developed in partnership with Arla, to sedentarise herders in a commercially driven, modern dairy project.

This business led approach agriculture provides our farmers a steady pathway to higher productivity and a market for their produce.

It is therefore our hope that the Kaduna State Agricultural Policy provides the requisite direction towards remedying the challenges of food insecurity, malnutrition, post-harvest losses and joblessness. Furthermore, we aim to have a food secure, environmentally friendly and agriculturally driven economy using measurable indicators and fostering partnerships among stakeholders.

Nasir Ahmad El-Rufai, OFR
Governor of Kaduna State

ACKNOWLEDGEMENTS

In our effort to develop this Agricultural policy document, some notable organizations that are key players in Agriculture in Kaduna State need to be appreciated for their contributions. We therefore affirm the commitment of the State Government to execute the Agriculture policy with adequate Budgets, timely cash release and effective Monitoring & Evaluation.

These include several Ministries, Departments and Agencies (MDAs) in Kaduna state, Federal Ministry of Agriculture and Rural Development (FMARD), Institute for Agricultural Research (IAR) ABU Zaria, National Animal Production Research Institute (NAPRI), National Agricultural Extension and Research Liaison Services (NAERLS), Development Partners such as Alliance for Green Revolution in African (AGRA) and their implementation partners –Synergos Development Innovation, USAID, CNFA, the private sectors operators in crops, livestock and farmer organizations, Community Based Organizations (CBOs).

Also special thanks to the consultants, Prof. P. I. Bolorunduro of NAERLS/ABU, Zaria, and Dr. A. A. Kassim for their contributions and effort in making available there levant data and commitment in putting to get her this document .Wether for ere affirm the commitment of the State Government to execute the Agriculture policy with adequate Budgets, timely cash release and effective Monitoring & Evaluation.

I am confident that this policy document will guide in the pursuit of progressive, sustainable, and inclusive profitable agribusiness in the state. I hope investors, lenders, and farmer associations and private operators will find it useful as a guide in understanding where we need to be and how to get there in the business of agriculture in Kaduna State. We recognize and appreciate the support of Kaduna State Executive Council under the able leadership of Mal. Nasiru Ahmed El-Rufai for their support, contribution to insights and approval of this policy.



Hajiya Halima Lawal
Hon. Commissioner
Ministry of Agriculture, Kaduna State.

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FACT SHEET

SN	Issue	Situation
1.	State Population (2020 Projection)	9,476,053 million
2.	Agriculture Contribution to State GDP	38.09%
3.	Agriculture as Employer of Labour	42.4% of State workforce
4.	Total Land Area	5.2 million ha (46,053 km ²)
5.	Total Arable Land (million ha)	4.5 million ha
6.	Total Cultivated Land (million ha)	2.935 million ha – (upland-2.045; lowland, 0.89)
7.	Major Crops	Maize, Ginger, Rice, Sorghum, Soybean, Cowpea, Tomato
8.	*Major Crops Yield (metric tons/ha)	Maize - 2.57; Ginger - 10.44; Rice - 2.2; Sorghum - 1.04; Soybean - 0.97; Cowpea - 0.83; Tomato 8.02
9.	Use of Improved Seeds by Farmers	30.6%
10	Use of Irrigation Facilities by Farmers	0.3%
11	Use of Animal Traction for Tilling	56.7%
12	Use of Machinery for Threshing	22.8%
13	Fertilizer Usage by Farmers	97.3% (Organic - 56.9; Organic & Inorganic - 40.4)
14	Agrochemical Usage by Farmers	85.2%
15	Farm Holdings	81.3% of Farmers - 0.1 to 5.99 ha
16	Average Farm Holding	3.84 ha
17	Number of Farm Households	1,322,226
18	Farming Households on Rain-Fed Agriculture	1,316,937
19	Farming Households on Dry Season Farming	136,189
20	Annual Rainfall	1015mm-1530mm
21	Farming Families in Livestock Production	30%
22	Major Livestock Reared (%)	Chicken - 31.2; Goat - 28.5; Cattle - 13.8; Sheep - 11.6; Pig - 10.5
23	Farming Families in Fisheries Production	0.8%
24	Major Fish Species Cultured	Catfish - 85%; Tilapia - 15%
25	Farming Families in Bee keeping	1.2%
26	Farming Families Planting Economic Trees	18% (Mango, Palm tree; Guava; Shea butter, Cashew, Citrus)
27	Membership of Farmers' Cooperatives	10.6%
28	Access to Finance by Farming Families (%)	2.5% - (Banks-0.9; Informal sources-0.9; Government Projects- 0.5; NGOs-0.2)
29	Number of EAs	200
30	*Extension Agent: Farmer Ratio	1:7,650
31	Access to Extension Services	General Ext -18%; Agric. Technologies – 8.1%
32	Avenue for Marketing Farm Produce (%)	Farm Gate - 46; Village Market - 77.9; Urban Market - 58.6; Regional Market - 12.9
33	Total Capacity of Warehouses (Silos)	300,00 MT

LIST OF ABBREVIATIONS AND ACRONYMS

ABP	Anchor Borrowers' Programme
ABU	Ahmadu Bello University
ADPs	Agricultural Development Projects
AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
AIF	Agricultural Innovation Fund
AI	Artificial Insemination
APCs	Agro-Processing Clusters
APP	Agricultural Promotion Policy
APPEALS	Agro-Processing Productivity Enhancement and Livelihood Support
ARCN	Agricultural Research Council of Nigeria
ASMC	Agricultural Service Management Committee
ATCs	Agricultural Training Centres
AVC	Adopted Village Concept
Bo	Boron
BOA	Bank of Agriculture
BOI	Bank of Industry
BMPs	Best Management Practices
CAADP	Comprehensive Africa Agricultural Development Programme
CAAS	College of Agriculture and Animal Science
CAC	Corporate Affairs Commission
CAP	Common Agricultural Policy
CBA	Community Based Advisor
CBN	Central Bank of Nigeria
CBOs	Community Based Organizations
CMPA	Cooperative Milk Producers Associations
CSA	Climate Smart Agriculture
CSC	Civil Service Commission
CSDA	Community and Social Development Agency
CSOs	Civil Society Organizations
Cu	Copper
DAP	Development Action Plan
DFRRI	Directorate of Foods, Roads and Rural Infrastructure
EA	Extension Agent
EC	Electrical Conductivity
ECOWAS	Economic Community of West African States
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FBOs	Farmer Based Organizations
FCFM	Federal College of Forestry Mechanization
FCT	Federal Capital Territory
FDAE	Federal Department of Agricultural Extension
FDFA	Federal Department of Fisheries and Aquaculture

FDI	Foreign Direct Investment
Fe	Iron
FGN	Federal Government of Nigeria
FISON	Fisheries Society of Nigeria
FKCs	Farm Knowledge Centres
FMARD	Federal Ministry of Agriculture and Rural Development
FMD	Foot and Mouth Disease
FMWR	Federal Ministry of Water Resources
FSPF	Farm Sector Promotion Fund
GAG	Good Agriculture Governance
GAP	Good Agricultural Practices
GCA	Gross Cropped Area
GDP	Gross Domestic Product
GES	Graduate Engagement Scheme
GIS	Geographical Information System
GM	Genetic Material
IAR	Institute for Agricultural Research
ICT	Information and Communication Technology
ICT4Ag	ICT for Agriculture
IFAD	International Fund for Agricultural Development
IFMS	Integrated Fertilizer Management System
IFPRI	International Food Policy Research Institute
I K S	Indigenous Knowledge System
K S I M M B	Kaduna State Industrialization and Micro Credit Management Board
I M P	Innovative Market Product
IPM	Integrated Pests Management
IPMS	Integrated Pest Management System
IT	Information Technology
KADA	Kaduna State Agricultural Development Agency
KADCCIMA	Kaduna Chamber of Commerce, Industry, Mines and Agriculture
KADFAMA	Kaduna State Facilities Management Agency
KADGIS	Kaduna Geographic Information Service
KADIPA	Kaduna Investment Promotion Agency
KADLRA	Kaduna State Livestock Regulatory Authority
KADPPA	Kaduna State Public Procurement Authority
KADPHCDA	Kaduna State Primary Health Care Development Agency
KADPOLY	Kaduna Polytechnic
KADRA	Kaduna State Roads Agency
KASU	Kaduna State University
KEPA	Kaduna State Environmental Protection Agency
KDBS	Kaduna State Bureau of Statistics
KDLGSC	Kaduna Local Government Service Commission
KDMDMC	Kaduna State Market Development and Management Company
KADPMC	Kaduna State Produce Management Company
KPI	Key Performance Indicator

KSTA	Kaduna State Transport Authority
KSFMP	Kaduna State Forest Management Project
KSMC	Kaduna State Media Corporation
LGA	Local Government Area
LGCA	Local Government Committee on Agriculture
LRC	Law Reform Commission
MOA	Ministry of Agriculture
MBIT	Ministry of Business, Innovation and Technology
MENR	Ministry of Environment and Natural Resources
MOF	Ministry of Finance
MHSSD	Ministry of Human Services and Social Development
MISHA	Ministry of Internal Security and Home Affairs
MOLGCA	Ministry of Local Government Affairs
MOPWI	Ministry of Public Works and Infrastructure
MOSD	Ministry of Sports Development
MILCOPAL	Milk Cooperative Producers Association Limited
Mn	Manganese
MFIs	Micro Finance Institutions
MSMEs	Micro, Small and Medium Enterprises
MTSS	Medium-Term Sector Strategy
NACGRAB	National Centre for Genetic Resources and Biotechnology
NACCIMA	Nigerian Association of Chambers of Commerce, Industry Mines and Agriculture
NAERLS	National Agricultural Extension and Research Liaison Services
NAIC	Nigerian Agricultural Insurance Corporation
NAPRI	National Animal Production Research Institute
NARS	National Agricultural Research System
N-AMIS	National Agricultural Management Information System
NASC	Nigeria Agricultural Seed Council
NARICT	National Research Institute for Chemical Technology
NBS	National Bureau of Statistics
NBPZ	Nuhu Bamalli Polytechnic Zaria
NCAM	National Centre for Agricultural Mechanization
NCX	Nigerian Commodity Exchange
NEEDS	National Economic Empowerment and Development Strategy
NEPAD	New Partnership for African Development
NESRA	National Environmental Standard and Regulatory Agency
NGOs	Non-Governmental Organizations
NIFFR	National Institute for Freshwater Fisheries Research
NILEST	Nigerian Institute of Leather and Science Technology
NiMET	Nigerian Meteorological Agency
NIRSAL	Nigerian Incentive-Based Risk Sharing System for Agricultural lending
NLTC	National Livestock Training Centre
NLTP	National Livestock Transformation Plan

NITR	National Institute for Trypanosomiasis Research
NMSPAN	Nigeria Multi-Sectoral Strategic Plan of Action for Nutrition
NPC	National Population Commission
NPK	Nitrogen, Phosphorous, Potassium
NPMSMEs	National Policy on Micro, Small and Medium Enterprises
OC	Organic Carbon
OFN	Operation Feed the Nation
PBC	Planning and Budget Commission
PPP	Public Private Partnership
pH	Power of Hydrogen
PSS	Pest Surveillance System
RUWASSA	Rural Water Supply and Sanitation Agency
REFILS	Research-Extension-Farmers-Input-Linkages-System
S	Sulphur
SEMA	State Emergency Management Agency
SEEDAN	Seed Entrepreneurs Association of Nigeria
SCA	State Council on Agriculture
SDGs	Sustainable Development Goals
SG 2000	Sasakawa Global 2000
SHCs	Soil Health Cards
SMEs	Small and Medium Enterprises
SON	Standards Organization of Nigeria
SOP	Standard Operating Procedure
TRIMING	Transforming Irrigation Management in Nigeria
TV	Television
UNRBDA	Upper Niger River Basin Development Authority
USDA	United States Department of Agriculture
WAAPP	West African Agriculture Productivity Programme
WCA	Ward Committee on Agriculture
WIA	Women in Agriculture
WTO	World Trade Organization
Zn	Zinc
SIP	Sector Implementation Plan

EXECUTIVE SUMMARY

Kaduna State has a total land area of 4.605 million hectares (46,052km²), with about 4.5 million hectares (97%) arable land, out of which 2.9 million hectares (65%) is under cultivation (KDBS, 2017) signifying opportunity to access land for production expansion. The expansive arable land, fertile soil, and favourable climate offer opportunities for growing several crops for food and commercial purposes. Some key drivers to increase agricultural production such as quality inputs, youthful population, accessibility, and favourable policies are in place in the State.

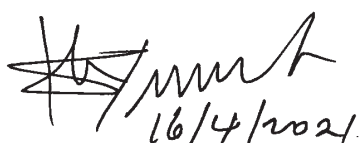
The expansive arable land, fertile soil, and favorable climate offer opportunities for growing several crops for food and commercial purposes. Some key drivers to increase agricultural production such as quality inputs, youthful population, accessibility, and favorable policies are in place in the State.

Farmers in Kaduna State practice wet season farming, the Kaduna, Galma & Karama rivers, and their tributaries along with the 41 dams in the state are leveraged for irrigation activities. Agriculture is diversified, crops, livestock, and tree crops dominant in production. Kaduna State is the leading producer of Maize, Ginger and Tomato in Nigeria and a major producer of Rice, Soybean and Sorghum and hold significant Cattle, Sheep, Goat and Chicken population. The State hosts 47 (14.7%) out of all 320 Seed companies in Nigeria, and a dozen fertilizer plants thereby making improved seeds and quality fertilizers accessible to farmers for increased productivity.

This policy document provides the insights, into what are required in the state to achieve increased productivity sustainable, facilitate economic diversification and attract credits and investments flows into the sector for economic growth. It captures the state's vision on agricultural development as enshrined in its main strategic documents as it aligns with relevant national, regional, and continental agricultural policy documents and directions.

The policy document will prove helpful in addressing the in here challenges limiting agricultural productivity for improved livelihoods sustainable, the general well being and recognizes desirable legal frame work in land access for increased confidence in the agricultural sector in the state.

The guiding principles include practicing agriculture as a business, a partner to long-term economic growth and recognizes food as key to human survival. It supports value chain approach in the sector and prioritize inclusivity of youth and women. It also factors climate change, environmental sustainability, nutrition-sensitive and inter-governmental co-operation in support of the vulnerable groups and compliance to quality and in contributing to government revenues.



16/4/2021

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CHAPTER ONE

1.0. INTRODUCTION

1.1. Background

Agriculture is a significant contributor to the Kaduna State economy, accounting for 38.09% of the State's GDP, with 42.4% of the population actively engaged in agricultural-related activities (KDBS, 2018). The State is the leading producer of Maize (7.4%) and Ginger (76.4%) in Nigeria; second largest producer of Soybean (9.4%); third largest producer of Tomato (6.1%) and a significant producer of Sorghum, Cowpea and Rice constituting 6.4%, 3.7% and 4.1% of national productions respectively in 2019 (NAERLS and FMARD, 2019; KADA, 2019). Other staples and high-value crops grown in the State include Groundnut, Sugar Cane, Sweet Potato, Cotton, Millet, Cassava and Yam. The State has a total land area of 5.2million hectares (52,00km²), with about 4.5 million hectares (87%) as arable land (KDBS, 2017). The wide array of arable land, soil texture, and beneficial climate offer opportunities for growing several crops both for food and commercial purposes. Farmers in the State engage in both wet and dry season farming leveraging on River Kaduna and its tributaries and dams for irrigation. Agriculture is diversified, with both crops and livestock produced and sometimes integrated into forestry systems.

Livestock production consists mainly of cattle, sheep, goats, and pigs, while aquaculture and apiary have potentials the State. Processed products range from dairy products to soft drinks, flour, and groundnut oil. To make agri-business the leading contributor to the State's economy, a Policy document that encourages investments in the Sector, which improves the State's revenue base and livelihoods is justified.

1.2. State Profile

Kaduna State is located in the Northwestern region of Nigeria with Kaduna as the administrative capital. The State lies between latitude 6 45'45"E to 8 26'15"E and longitude 8 49'30"N to 11 15'20"N (Figure 1.1). The State was created in 1975 as the successor of the North Central State and the old Northern Region of Nigeria and is one of the leading economies in Northern Nigeria with abundant natural resources. Kaduna State is a regional engine of growth. The State shares boundaries with Niger State to the west, Zamfara, Katsina, and the Kano States to the north, Bauchi and Plateau States to the east and the Federal Capital Territory and Nasarawa State to the south.

National Population Commission (NPC) census figures of 6.1million of 2006 place Kaduna State in 3rd position next to Kano and Lagos States. Based on an estimated growth rate of 3.18%, the State's population estimate for the year 2020 is 8.9million and projected to rise to 13 million by 2050 (KDSG, 2018c; <http://kdbs.ng>).

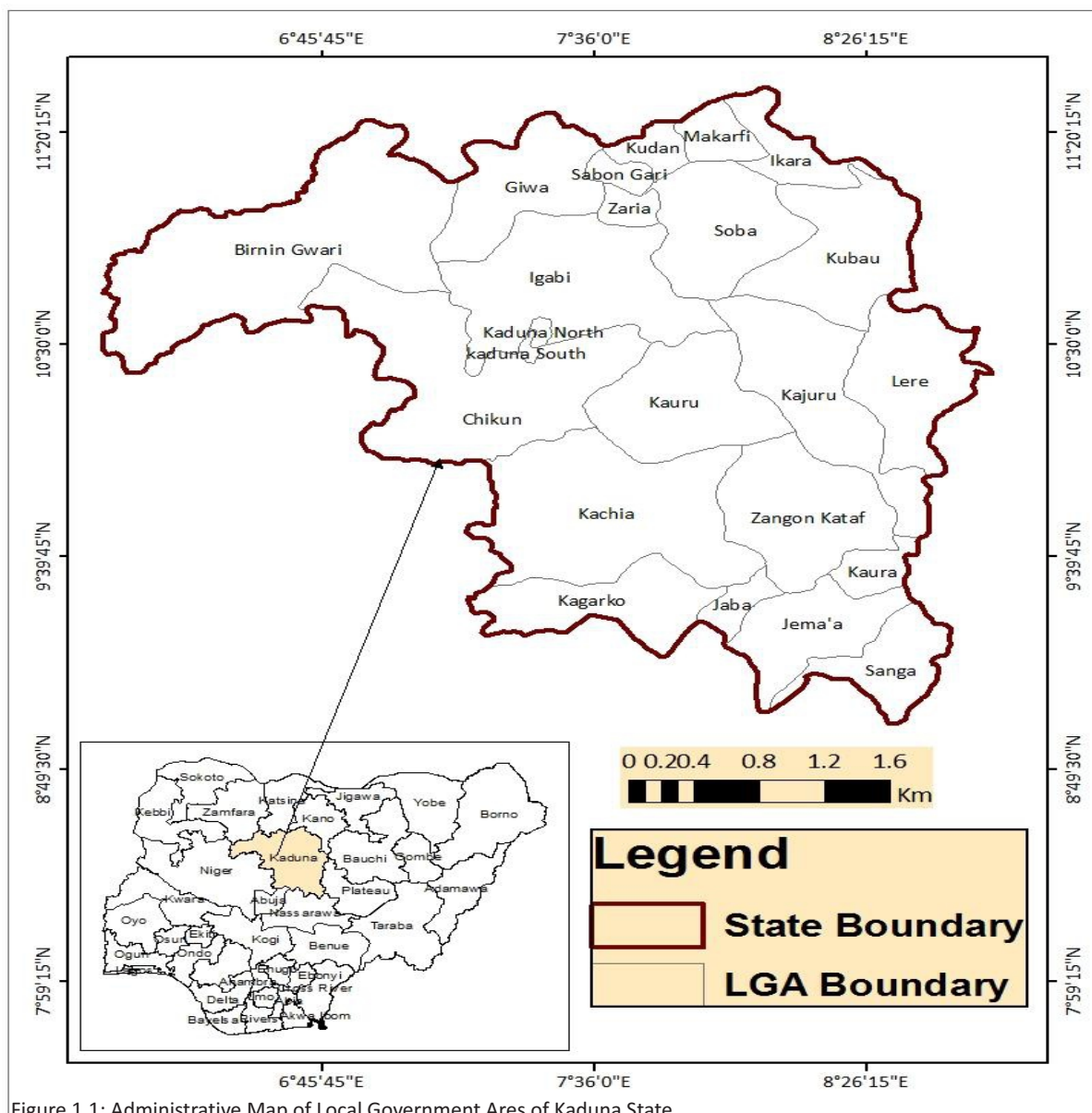


Figure 1.1: Administrative Map of Local Government Areas of Kaduna State

About 43% of the population is below 15 years old, while 54.1% of the population falls within the age range of 15-64 years, and 3% are 65 years old or above (KDSG, 2016). The State, therefore, has a large youthful population that can be leveraged on agri-business development.

According to the Kaduna Gross Domestic Product (GDP) report, the State's GDP was estimated at N2.89 trillion in 2018 compared with N2.66 trillion in 2017 with services, agriculture, and industry representing 51.5%, 38.09% and 10.74% of the GDP, respectively (KDBS, 2018). Although Kaduna State is ranked the 10th wealthiest State in Nigeria with GDP of \$10.334 billion and per capita of \$1,666; 75% of the population are poor of which 32.8% are in extreme poverty (way above the national poverty profile of 53.3% for Nigeria (OPHI, 2017).

The State has a high potential for value addition to the diverse agricultural commodities it produces. Recent investments in agriculture, agro-processing, and manufacturing include global brands such as Dangote Group, Olam, Notore, Campina, and Friesland. The presence of these companies attests to the viability of the State as an agricultural investment destination in Nigeria. Policy incentives coupled with increase infrastructure development are intended to the competitiveness of the State agricultural sector and the broader economy.

Kaduna State has several dams for irrigation agriculture and fisheries. Some of the infrastructure according to NASRDA (2008) include Kangimi dam (567 ha area command), Zaria dam (484 ha), Kubani dam (474 ha); Shika dam (110 ha); Kachia dam (100 ha); Kagoro dam (100ha); Bagoma dam (97ha) and Kudan dam (31 ha). Perennial rivers that drain the State include Rivers Kaduna, Gurara, Iri, Sarkin Pawa, Baban Kogi, Gazara, Gadani, and Araga. Other seasonal rivers also exist. All these water bodies ensure all year-round agricultural activities.

Improved infrastructure, especially in the rural access and storage facilities, are driving the productivity of crops and livestock in the State. The activity of investment promotion agency and the favorable disposition of the administration towards driving demand for commodities has increased market prospects for farmers' The State consists of twenty-three (23) Local Government Areas as indicated in Figure 1.1

1.3. Climate and Vegetation

The climate is tropical with different seasonal regimes that oscillate between cool to hot dry and from humid to wet, with an average annual temperature of 25.2°C. The climatic seasonality shows the cold to the hot dry season that is longer than the rainy season. The spatial and temporal distribution of annual rainfall shows a, decreasing average of 1,530mm in Kafanchan-Kagoro area in the southeast to 1,015mm in Ikara and Makarfi districts of the northeastern region of the State (KDSG, 2017). High evaporation during the dry season, however, creates water shortage problems, especially in Igabi, Giwa, Soba, Makarfi, and Ikara LGAs. The vegetation cover is Sudan Savannah type, characterized by scattered short trees, shrubs, and grasses. Soil type is mostly loamy to sandy type, and a substantial amount of clay is also found.

1.4. Agricultural Production in Kaduna State

1.4.1 Current Situation and Challenges

Agriculture is the primary source of livelihood in the State, and the Sector remains the largest employer of labour, which is a crucial contributor to wealth, income, and poverty alleviation. For this reason, the economic prosperity of the State intrinsically connects to the growth of the agriculture sector. The Sector offers enormous potential for investments in agro-allied industries, supportive infrastructure, and robust financial instruments. The Agric. sector vision for the State conceptualizes investments in system intensification, value addition, transfer of capital to rural communities and competitive markets. Table 1.1 shows priority crops of which Kaduna State has un-parallel output advantages on a national scale.

Table 1.1: Selected Crops Production (mt) in Kaduna State as a Percentage of National

Crop	Nigeria 2019	Kaduna 2019	% Kaduna	Ranking
Ginger	679,040	518,920	76.4	1
Maize	12,598,950	927,160	7.4	1
Soybean	1,048,510	98,980	9.4	2
Tomato	3,102,960	189,170	6.1	3
Sorghum	6,668,240	429,190	6.4	4
Rice Paddy	8,435,610	349,490	4.1	10
Cowpea	4,007,830	147,550	4	10

Although the volume of crops and livestock production in the State is enormous, small-holder farmers are predominant and opportunities for large scale commercial farming mostly untapped owing to lack of access to structured finance. Kaduna State has a sizeable livestock population with high potentials for dairy and leather production that remained undeveloped. **Table 1.2** indicates the population estimates of some livestock in the State as a relative proportion of the national total.

Table 1.2: Estimates of livestock Population in Nigeria and Kaduna State

Animal	Nigeria, 2019	Kaduna, 2019	Kaduna%	Ranking
Cattle	20,407,607	708,521	3.5	12
Sheep	46,757,458	1,716,178	3.7	7
Goat	81,989,420	2,065,453	2.5	16
Chicken	208,069,870	8,248,279	4.0	10
Pig	8,597,969	722,205	8.4	4

Source: NAERLS and FMARD (2019), KADA (2019)

Capture fisheries (fishing) is prevalent and farmers are exploring the potentials for aquaculture development in wetlands and the numerous dams and rivers across the State. According to FDF (2015), Kaduna State has fish production output of 7,938 metric tons (1.1% of national productions) which ranks 20th in the country.

The critical challenges in the agriculture sector in the State are:

- I. The approved annual budget for the State, the agriculture sector budget accounted for 3.72% in 2017 and 3.66% in 2018.
- ii. Inadequate access to modern production inputs (such as credit, mechanization and improved seeds/breeds/feeds, storage facilities), structured markets, and low productivity (due to weak extension services).
- iii. Poverty, low productivity, and over-dependence on rain-fed/low input agriculture. Only about 2% of cultivated land is under irrigation despite erratic seasonal rainfalls and a growing shortage of arable land due to the rising population.
- iv. Huge farm level and off-farm post-harvest losses of up to 30-50% occur annually caused by pests and diseases and poor handling.

- v. Herdsmen-farmers' conflicts/other civil crises that have caused the abandonment of many farmlands in the crisis-prone areas and forced internal migration to safer communities.
- vi. Low mechanization and high labor-intensive production processes: Shrinking landholding sizes and low levels of fixed incomes restrict the investment capability of a farmer; consequently, the dominant role of labor in the cultivation process in the State for most crops has continued over the years.
- vii. High dependence on weather and climate: During the last five years, variability in production (mainly of paddy) points to the need for more effective climate resilient strategies. For example, the productivity of large areas under paddy cultivation is low, resulting in meager returns to the farmers.
- viii. Low cost–low-value trap: The State is a low-cost producer of most crops, but due to market problems (aggregation, accessibility, and supply adequacy) the value realized by farmers is low. Due to a sharp rise in costs of production, driven mainly by rising labor and input costs, and slower growth in the market value of produce, farmer's profitability in most crops has been shrinking.
- ix. There is a perennial paucity of data on Livestock and Fisheries coupled with low budgetary allocation and inadequate infrastructural development of these sub-sectors despite their potentials as prime movers of agricultural diversification and job creation potentials in the State. Besides, there are problems with meager milk yields and deficient levels of organized milk processing in the State.
- x. The high Farmer: EA ratio (7,650:1) makes it difficult for farmers to receive information on agricultural innovations from extension agents.
- xi. Farmers sell most agricultural produce in the State unprocessed, devoid of value addition that could make products varieties to be available to consumers. Value addition increases the marketability of products and increases the income of value chain actors.
- xii. Inadequate access to finance has been a recurring problem for small-scale farmers in financing their farm operations. Difficulties in securing credit facilities limit their potentials for expansion enhance productivity, and income

1.4.2. Trends in the Sector

In an attempt to strengthen extension delivery and develop agricultural value chains, in 2016, Kaduna Agricultural Development Project (KADP) transformed into Kaduna State Agricultural Development Agency (KADA) through an enabling law. The role of the agency expanded to provide extension services to rural communities, and to support agricultural value chains development. The other vital components of KADA's mandates are to facilitate access to markets and financial services build capacity for control emerging pests and the adoption of improved technologies. KADA also, has a catalytic responsibility to foster linkages research institutes, development partners fight rural poverty reduction, and to facilitate job creation in rural communities.

In 2018, the State established the Kaduna State Livestock Regulatory Authority (KADLRA) with a mandate to formulate and implement standard operating procedures, policies, and strategies relating to livestock and livestock product processing for food safety in the State. Other developments recorded in the Sector, as outlined in the Sector Implementation Plan

(SIP)The State Government has reiterated a vision to improve agricultural productivity, include:

- a. Successful handling of the challenges of high cost and scarcity of quality fertilizer to farmers by making it available timely and at affordable prices.
- b. Increased storage and grain handling capacity by 225,000 metric tons through construction of three zonal aggregation centers in Giwa, Lere and Kachia.
- c. Rehabilitation of irrigation facilities and piloting wheat cultivation under dry season farming.
- d. Attraction of the largest foreign direct investment in the State through:
 - i. \$150m Olam poultry project, effectively making Kaduna the poultry nucleus of Northern Nigeria.
 - ii. European dairy giant Arla is investing more than N15bn in Damau, Kubau Local Government Area in the dairy value chain.

The State Government has reiterated a vision to improve agricultural productivity, improve storage and expand the enterprise value of the agricultural Sector in Kaduna State by developing markets, commodity value chains to improve farm outputs and quality. In pursuit of this vision, the State published its State Development Plan (SDP) for 2016-2020 and Agriculture Sector Implementation Plan (SIP). Agricultural Sector Fact Sheet is available while a draft State Agriculture Investment Plan (AIP) is under review.

1.4.3. Crops of Competitive Advantage by Local Government Areas

Major crops produced across LGAs in the State include Maize, Rice, Ginger, Sorghum and Soybean (Tables 1.1 and 1.3). Several agricultural intervention Projects by Government, donor agencies, and NGOs in the State served to prioritize viable agricultural enterprises and commodity value chains. Some of the Projects in the State include National Programme for Food Security (NPFS), FADAMAs II & III and Agricultural Transformation Agenda (ATA). Others are West African Agricultural Productivity Programme (WAAPP), and the business-oriented Commercial Agriculture Development Project (CADP).

Table 1.3: Major Crops by LGAs in Kaduna State

S/N	LGA	Five Major Crops in order of Production
1	Birnin- Gwari	1. Maize, 2. Rice, 3.G/Nut, 4.Soybean, 5.Sorghum
2	Chikun	1.Maize, 2.Rice, 3.Sorghum, 4.Cowpea, 5.Ginger
3	Giwa	1.Maize, 2.Rice, 3.Sorghum, 4.Soybean, 5.Groundnut
4	Igabi	1.Maize, 2.Rice, 3.Sweet Potato, 4.Millet, 5.Cassava
5	Ikara	1.Maize, 2.Rice, 3.Sorghum, 4.Cowpea, 5.Pepper
6	Jaba	1. Ginger, 2.Mango, 3.Rice, 4.Sorghum, 5.Soybean
7	Jema'a	1.Maize, 2.Sorghum, 3.Yam, 4.Cassava, 5.Ginger
8	Kachia	1.Ginger, 2.Maize, 3.Rice, 4.Sugar cane, 5. Groundnut
9	Kaduna North	1.Vegetables, 2. Sweet Potatoes, 3. Rice, 4. Sugar cane, 5. Maize
10	Kaduna South	1.Vegetables, 2. Sweet Potatoes, 3. Rice, 4. Sugar cane, 5. Maize
11	Kagarko	1.Ginger, 2. Maize, 3. Rice, 4. Tomatoes, 5. Tumeric
12	Kajuru	1.Maize, 2. Rice, 3. Sorghum, 4. Soybean, 5.Groundnut
13	Kaura	1.Maize, 2. Sorghum, 3. Yam, 4. Cowpea, 5. Sweet/Irish Potatoes
14	Kauru	1.Maize, 2. Rice, 3. Sorghum, 4. Soybean, 5. Groundnut
15	Kubau	1.Maize, 2. Rice, 3. Sorghum, 4. Soybean, 5. Pepper and Tomato
16	Kudan	1.Maize, 2. Rice, 3. Sorghum, 4. Soybean, 5. Pepper and Tomato
17	Lere	1.Maize, 2. Rice, 3. Soybean, 4. Cowpea, 5.G/Nut and Tomato
18	Makarfi	1.Maize, 2. Rice, 3. Sorghum, 4. Sugar Cane, 5. Pepper and Tomato
19	Sabon-Gari	1.Maize, 2. Rice, 3. Sorghum, 4. Soybean, 5. Sweet Potatoes
20	Sanga	1.Yam, 2. Soybean, 3. Rice, 4. Ground Nut, 5. Cassava
21	Soba	1.Maize, 2. Rice, 3. Sorghum, 4. Soybean, 5. Sweet Potatoes
22	Zangon Kataf	1.Maize, 2. Yam, 3. Sorghum, 4. Soybean, 5. Rice
23	Zaria	1.Maize, 2. Rice, 3. Sorghum, 4. Soybean, 5. Sweet Potatoes

Table 1.4: Matrix of Major Crops Produced in LGAs across Kaduna State

S/N	LGA	Maize	Ginger	Rice	Soybean	Cowpea	Sorghum	G/Nut	Potatoes	Tomato	Others
1	Birnin- Gwari	*		*	*		*	*			
2	Chikun	*	*	*	*	*	*	*			
3	Giwa	*		*	*		*	*			
4	Igabi	*		*	*			*	*		Millet, Cassava Pepper Mango
5	Ikara	*		*	*		*	*		*	Yam, Cassava
6	Jaba	*	*	*	*		*	*			S/Cane
7	Jema'a	*	*	*	*		*	*		*	Vegetable, S/Cane
8	Kachia	*	*	*	*		*	*		*	Vegetable, S/Cane
9	Kaduna North	*		*	*		*	*		*	Vegetable, S/Cane
10	Kaduna South	*		*	*					*	Turmeric
11	Kagarko	*	*	*	*		*	*		*	
12	Kajuru	*		*	*		*	*			Yam
13	Kaura	*	*	*	*	*	*	*			
14	Kauru	*	*	*	*	*	*	*			Pepper
15	Kubau	*		*	*		*	*		*	Pepper
16	Kudan	*		*	*		*	*		*	
17	Lere	*		*	*	*	*	*		*	Pepper, S/Cane
18	Makarfi	*		*	*		*	*		*	
19	Sabon-Gari	*		*	*		*	*	*	*	
20	Sanga	*	*	*	*		*	*			Cassava
21	Soba	*		*	*		*	*	*		
22	Zangon Kataf	*	*	*	*		*	*			Yam
23	Zaria	*		*	*		*	*	*	*	
	TOTAL	23	9	23	23	4	19	21	7	10	

Source: KDBS (2015) and KADA (2017)

Note - Spread of major crops across LGAs: Maize -23, Rice-23, Soybean- 23, Ground Nut – 21 Sorghum - 19, Tomato- 10, Ginger -9



1.5 Rationale for the Policy

Kaduna State operates without a stand-alone Policy on agriculture. With the current efforts and drive by the State Government to tap into her agricultural potentials, the starting point is to address the challenges in the sector, by putting in place a responsive Policy. The Policy guides all stakeholders including the private Sector) as partners in promote rapid agricultural development, which has a pivotal role to play, especially in the Public-Private Partnership (PPP).

The Policy offer motivation to investors to scale investments in the agricultural sector as well as encourages Government (State and Local) to comply with the Maputo Declaration of 2001, Comprehensive Africa Agricultural Development Programme (CAADP) of the Malabo Declaration of June 2014. The document underpins the focus, direction, and delineates responsibilities of all stakeholders. Strengthen institutional capacity to broker Programme continuity, accountability, stability, and equity in line with the aspirations of the State.

The Policy of the State aligns with the Policy initiatives of the Federal Government to build synergy that addresses critical socio-economic challenges, and to harness investment opportunities. It builds congruence for agricultural development road map and institutionalizes strategic platform for shared motivation to activate agro-Industrial evolution in the State.

1.6. Goal and Objectives of the Policy

The overall goal of the Policy is to stimulate growth through demand-driven approaches and facilitation of access to credit and technology to optimize yield and quality of crops, livestock, and fisheries products to enable our farmers to compete favorably with peers across the continent.

To achieve the goal of the rapid transformation of agriculture and acceleration of economic expansion in Kaduna State, this Policy has the following specific objectives:

- i. Improve agricultural productivity; generate employment in the Sector, and encourage the transition of a significant proportion of farmers from subsistence farming to commercial agriculture.
- ii. Revitalization of the rural economy and promotion of agricultural investment to ensure food and nutrition security.
- iii. Improve storage and transport by expanding the capacity of storage and refrigeration facilities for key crops (e.g. grain silos, dairy, vegetables cold chain equipment and development of meat value chain)
- iv. Attract private sector investment in agro-processing, agricultural inputs production and services (mechanization, extension, aggregation, credits flow) on crops where the State has competitive advantages (e.g. meat processing, dairy processing, tomato paste production, vegetable oils milling, feed and flour milling, poultry products and ginger-based products)..

This Policy document imbibes the features of the Common Agricultural Policy (CAP) similar to that of the European Union (Figure 3.2) and has the following focuses:

- I To increase productivity, by promoting technical progress and ensuring the optimum use of the factors of production, in particular labour;
- ii. To ensure a fair standard of living for the agricultural value chain actors;

- iii. To stabilize markets, secure availability of supplies and to provide consumers with food at reasonable prices.

1.7. Guiding Principles of the Policy

Government interest in driving agricultural transformation is economic growth and poverty reduction. This Policy is intended to help rejuvenate the agriculture sector of Kaduna State and bringing lasting improvement in the economic condition of the farmers, and prosperity of the State. An integrated implementation of the intentions of the Government would achieve the targeted annual growth rate and ensure food and nutritional security to all the citizens of the State. For this reason, the Comprehensive Africa Agriculture Development Programme (CAADP) champions reform in the agricultural Sector, setting broad targets including a 6% annual growth in agricultural GDP and an allocation of at least 10% of public expenditures to the agricultural Sector. Nigeria has a National Agriculture, food and nutrition security investment plan that aligns with the CAADP frameworks and encouraging its federating units to adopt the same. The Agriculture Transformation Agenda (ATA), and the Agricultural Promotion Policy (APP) of the federal Government draws contextual frame from the CAADP framework.

1.8. The State Agriculture Policy builds on the guiding principles of the national documents in the following thrusts:

- I. Agriculture as a Business – focusing the Policy instruments on a Government-enabled, private sector-led engagement as the main growth driver of the Sector. This essential principle remains a cardinal design in moving the Kaduna State agriculture Policy.
- ii. Agriculture as Key to Long-Term Economic Growth and Security-focusing Policy instruments to ensure that the commercialization of agriculture in the State includes technologies, financial services and inputs supply chains, and market linkages that directly engage poor rural farmers because rural economic growth will play a critical role in the country's successful job creation, economic diversity, improved security and sustainable economic growth.
- iii. Food as a Human Right – focusing the Policy instruments for agricultural development on the social responsibility of Government to enhancing equitable access, and adequacy of nutritious food in Kaduna State. The Policy encourages the State Government to recognize, protect its citizens from hunger and malnutrition.
- iv. Value Chain Approach – focusing the Policy instruments for enterprise development across commodity value chains of priority commodities. Processing and post-harvest management are encouraged to enhance value addition and product development. Building complex linkages between value chain stages will be an important part of the ecosystem that will drive sustained prosperity for all citizens of the State.
- v. Prioritizing Crops – focusing Policy on achieving improved domestic food and nutrition security and boosting export earnings requires a measure of prioritization. Therefore, for domestic crops, the initial focus in the Policy will be expanding the production of priority crops for domestic and export market. Investments in closing infrastructure gaps to accelerate productivity and investment in these crops will also be sequenced to reflect capital availability and management attention.
- vi. Market Orientation – focusing the Policy instruments on stimulating agricultural production in the State on a sustainable basis, and stimulating supply and demand for agricultural produce by facilitating linkages between producers and off takers, while

- stabilizing prices or reducing price volatility for agricultural produce through market-led price stabilization mechanisms (commodity exchanges, negotiated off-take agreements, extended farm-gate price under value chains coordination mechanisms, agricultural insurance, etc.)
- vii. Factoring Climate change and Environmental sustainability – focusing Policy instruments on the sustainability of the use of natural resources, building resilience and promoting preparedness, prevention, mitigation, and recovery as well as coping strategies to lessen impacts of magnification of climate change events. Fostering partnerships that improve early warning information sharing focusing on reducing human and agricultural activities that contribute to the events.
 - viii. Participation and Inclusiveness – focusing instruments on measures to optimize the full participation of stakeholders, including farmer's associations, cooperatives, and other groups, as well as NGOs, CBOs, CSOs, development partners and the private Sector. This places a premium on the role of these organizations or groups as agents of economic change in general and agricultural economy in particular, thereby drawing benefits from their Policy advocacy roles as partners to and watchdog of Government.
 - ix. Policy Integrity – focusing Policy instruments on measures that enhances governance accountability, transparency and due process ensuring efficient allocation and use of public funding and eliminating corruption and upholding equity in agriculture Programmes. This also applies to compliance with international commitments, protocols/conventions to which Nigeria is a signatory.
 - x. Nutrition Sensitive Agriculture – focusing Policy instruments on addressing the issues of stunting, wasting, underweight and other manifestations of hunger and malnutrition with particular reference to the vulnerable groups, which include children under 5, nursing mothers and persons with chronic illness and disabilities
 - xi. Agriculture's Linkages with Other Sectors – focusing Policy instruments on the connected relationship between agriculture and other sectors of the State, particularly industry, environment, power, energy, works and water sectors. Applying these principles, the Policy focuses on providing an enabling environment for stakeholders in the State to carry on with their businesses. Collaborative governance regime involving the legislature, security apparatus and other public officials are committed to enhancing physical infrastructure and institutional mechanisms that are supportive of Policy implementation.

CHAPTER TWO

2.0. AGRICULTURAL SECTOR GOVERNANCE IN KADUNA STATE

2.1. Governance in Agricultural Development

Governance at all levels is defined by the processes through which public and private actors articulate their interests; frame and prioritize issues; and make, implement, monitor, and enforce decisions. Kaduna State Government has committed to strengthening its institutions and mechanisms that encourage compliance to standards, and data-driven performance operations and cooperation.

The Government will:

- I. Create a supportive enabling environment for investment-driven agricultural sector growth.
- II. Ensure its regulations and mediations are enshrined with equity to minimize inequalities.
- III. Ensure that the agriculture sector policy of the State recognizes the dynamic interplay between the public Sector, organized private Sector, civil society, and the farmers.
- IV. Commit to nurturing the relationships among stakeholders to enhance wealth creation in the State.

2.2. Kaduna State Ministry of Agriculture (MOA)

The State Ministry of Agriculture (MOA) coordinates all Policy issues on agriculture in the State and supervises the operations of her agencies in collaboration with several other agencies, parastatals and stakeholders for development of the agricultural Sector. The core agencies of the Ministry are - Kaduna Agricultural Development Agency (KADA) and Kaduna State Livestock Regulatory Authority (KADLRA).

Headed by the Honourable Commissioner, assisted by the Permanent Secretary, two (2) Executives of Parastatals and three (3) Departmental Directors, the Ministry has two technical and one administrative department. The Departments are:

- I. Agricultural Services (Horticulture, Produce, Mechanization, Irrigation Services and Women in Agriculture)
- ii. Veterinary & Livestock Services (Veterinary Public Health, Clinical Services, Livestock and Fisheries)
- iii. Administration and Finance.

In addition to inter-ministerial engagement, some of the institutions the Ministry collaborates with in the implementation of its mandate include:

- i. Institute for Agricultural Research (IAR), Samaru, Zaria
- ii. National Animal Production Research Institute (NAPRI), Shika, Zaria
- iii. National Agricultural Extension and Research Liaison Services (NAERLS), Zaria
- iv. National Research Institute for Chemical Technology (NARICT), Zaria
- v. National Institute for Trypanosomiasis Research (NITR), Kaduna
- vi. International Institute for Tropical Agriculture (IITA), Ibadan
- vii. College of Agriculture and Animal Science (CAAS), Mando, Kaduna
- viii. Federal College of Forestry Mechanization (FCFM), Afaka
- ix. Federal Ministry of Agriculture and Rural Development, State Office (FMARD)

- x. National Agricultural Seed Council, Regional Office, Samaru, Zaria (NASC)
- xi. Nigerian Meteorological Agency (NiMET)
- xii. National Centre for Agricultural Mechanization

2.3. Kaduna Agricultural Development Agency (KADA)

Established by Law No 15 of 2016, the primary functions of KADA are:

- i. Liaise with relevant agencies such as Local Government Councils and other relevant Agencies, to deliver extension service to rural communities.
- ii. Carry out training of extension staff and farmers, including demonstration of new technology on production, processing, and marketing in all agricultural value chain.
- iii. Implement Programmes to increase the production of crops, livestock, fisheries, beekeeping through the introduction of improved farming practices in the State and strengthening extension services
- iv. Carry out applied research Programmes involving the production and testing of seed varieties, agronomic practices, farm machinery, and implements, monitoring weather elements to generating data for Agricultural purposes; and
- v. Promote and encourage local entrepreneurship in farm mechanization activities, agro-process, and value addition activities.

2.4. Kaduna State Livestock Regulatory Authority (KADLRA)

The Kaduna State Livestock Regulatory Authority, Law 2018, stipulates the main functions of the Authority as:

- I. Formulate and implement Standard Operating Procedures policies and strategies relating to livestock and livestock products processing for food safety in the State;
- ii. Bring together, services, expertise, and scientific capability to develop livestock and livestock food products safety;
- iii. Establish quality control laboratories to regulate livestock and livestock products safety;
- iv. Examine and review all practices and operations relating to the supply of human food derived from livestock; and
- v. Undertake livestock products market surveys that would facilitate the implementation of fair practices in the industry.

CHAPTER THREE

3.0 THE POLICY DEVELOPMENT AND ALIGNMENT WITH STRATEGIC DOCUMENTS

3.1 Sub-Sector Policies and Enabling Laws

The sector Policy, as outlined in the Agricultural Sector MTSS 2017-2019 and Agricultural Sector Implementation Plan (SIP, rolled over 2021-2025*), is the synthesis of the framework and action plans of the State designed to achieve overall agricultural growth and development.

The Government will:

- i. Aim to attain self-sustaining growth in all the sub-sectors of agriculture and the structural improvement necessary for the overall socio-economic development of the State.
- ii. Improve the well-being of citizens and provide infrastructures for increased agricultural productivity.
- iii. Sustain improvements that are critical for agro-allied investments and credit flow, rural economic vitality, job creation, economic growth, and improved livelihood.

Towards the achievement of the overall objectives of the agriculture sector, key sub-sector policies are integrated into the Policy Document. The State has developed several legislation and policy documents shaping reform of all economic sectors which serve as legal and regulatory frameworks for operations and reforms in the agricultural Sector. Amongst such laws are:

- i. Kaduna Agricultural Development Agency (KADA) Law No 15 of 2016
- ii. Kaduna State Livestock Regulatory Authority Law 2018
- iii. Land Use Act (amended for the establishment of KADGIS).
- iv. Kaduna Investment Promotion Agency (KADIPA) Law of 2015
- v. Kaduna State Infrastructure Master Plan (2018 -2050)
- vi. Kaduna State Industrial Plan

3.2 The Policy Development Process

The State Agricultural Policy focuses on agri-business as a critical pivot for economic development aiming to optimize the use of resources, advances in science, and technologies to anchor citizens' prosperity and environmental sustainability. The process of the development of the Kaduna State Policy on Agriculture is anchored on two approaches - review of literature (desktop and libraries) and consultations with stakeholders (State and non-State actors). The State's Ministry of Agriculture, its parastatals (KADA and KADLRA), and other MDAs made available relevant documents. National, regional and continental policy documents on agriculture were also consulted in order to align the content of the policy. Stakeholders in agriculture were engaged in inception and validation meetings to improve on the document before legislating it for implementation.

3.3 Policy Alignment with National and Continental Strategy Documents

In earlier strategic documents developed, the State Government acknowledged the centrality of farmers' welfare in its vision for agriculture. In the Agricultural Sector Development Plan (SDP)

2019, the Government pledged adequate budgetary allocation- a philosophy infused into this policy document.

The document aligns with national, regional, and continental policies and cascades to Local Government Areas and communities. The operational plans of the policy take cognizance of the inclusiveness of all stakeholders and the roles of agricultural value chain actors. Figure 3.1 illustrates the interplay between the continental/regional, national, and state policies on agriculture.

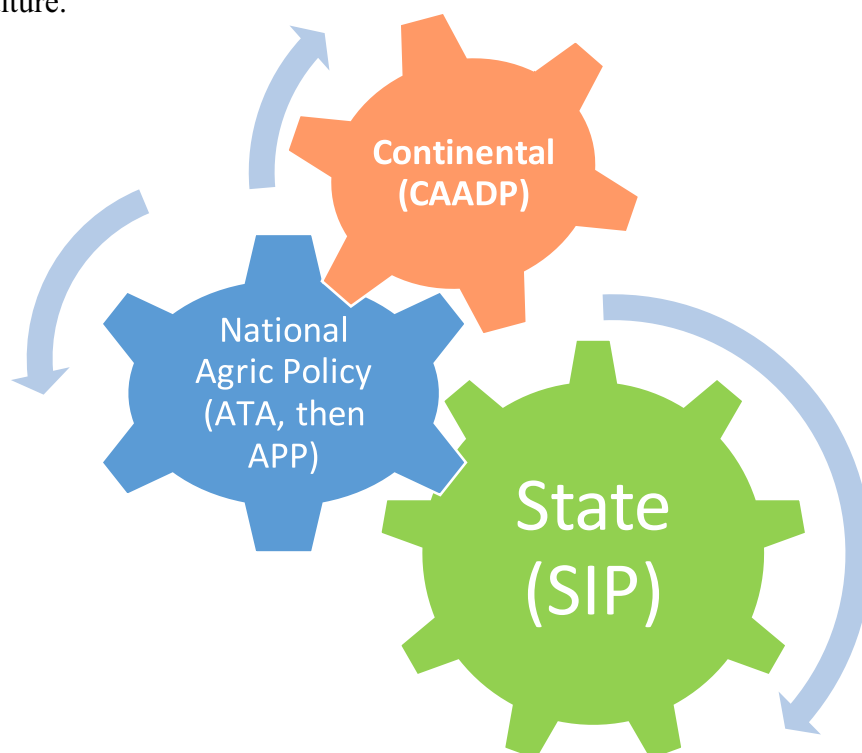


Figure 1.2: Interplay between Continental/Regional, National and State Policies on Agriculture
Source: CSIS (2019)

The policy is a framework that enunciates the guidelines, objectives, structures, standards, and strategies for achieving the much-desired agricultural development in the State. It builds on the Federal Government's Agricultural Promotion Policy (APP), which is aligned with the continental agenda to drive agricultural transformation in support of the Comprehensive Africa Agriculture Development Programme (CAADP). Relevant documents consulted for alignment of the policy include.

- a). Kaduna State Strategic Documents.
 - i. Kaduna State Development Plan (Ministry of Economic Planning 2014-2018).
 - ii. Kaduna State Development Plan: Delivering on Jobs, Social Justice, and Prosperity (Planning & Budget Commission; 2016-2020).
 - iii. Guidelines for Gender and Social Inclusion in Policy and Strategy Formulation and Implementation in Kaduna State (SPARC, 2014).
 - iv. State Partnership for Accountability, Responsiveness, and Capability (SPARC, 2013), which detail the level of consideration of gender and social inclusion in Policy and strategy formulation and implementation in Kaduna State.
 - v. State Policy on Results-Based Monitoring and Evaluation (SPARC, 2014).
 - vi. Development Cooperation Framework II (DCF) between Kaduna State Government and International Development Partners (KDSG, 2014)

- vii. Kaduna State Agriculture and Forestry Sector Implementation Plan – SIP; (2017-2019, rolled over 2021-2025)
- viii. State Action Plan 2018-2020. Kaduna Open Government Partnership.
- ix. Kaduna State Livestock Regulatory Authority, Law 2018.
- x. Kaduna State Government Approved Budget (2019).
- xi. Kaduna State Government. Approved Budget, (2020).
- xii. Kaduna State Infrastructure Master Plan (2018-2050)
- xiii. Policy and Strategy. Guide No.1: How to Prepare a Policy. State Partnership for Accountability, Responsiveness, and Capability, SPARC (2015).
- xiv. Review of 2014–2016 Medium Term Sector Strategy for Pilot Sectors in Kaduna State. (SPARC, 2014).

b). National, Continental and Development Partners Documents

- I. Agricultural Promotion Policy (Green Alternative) 2016-FGN
- ii. Draft Agricultural Technology and Innovation Plan (NATIP), 2021-2024-FGN
- iii. National Livestock Transformation Plan 2019-2028 -FGN
- iv. The Nigeria Economic Recovery and Growth Plan 2017 -FGN
- v. National Agricultural Resilience Framework 2014-FGN
- vi. Agricultural Transformation Agenda 2010-FGN
- vii. Nigeria Agricultural Policy 2008 –FGN
- viii. Nigerian Vision 20:2020 – National Implementation Plan Vol. I, 2009
- ix. National Transformation Agenda (2011 – 2015)
- x. National Economic Empowerment and Development Strategy (NEEDS), 2004
- xi. New Partnership for African Development (NEPAD) CADDP Document, 2002
- xii. Sustainable Development Goals (SDGs), 2015
- xiii. Feed Africa: Strategies for Agricultural Transformation in Africa 2016-2025: AfDB
- xiv. Agricultural Transformation Agenda Support Programme (ATASP-1) 2013 – AfDB xv. Food and Agriculture Policy Decision, 2014: FAO
- xvi. Value Chain Development Document 2012 - IFAD xvii. Agricultural Policy Documents 2015-2018 - FPRI

c). Other Multi-Sector Documents

- i. National Gender Policy in Agriculture (NGPA) - 2016
- ii. National Policy on Education (NPE) - 2013
- iii. National Policy on Science, Technology and Innovation (NPSTI) - 2012
- iv. National Industrial Revolution Plan (NIRP) - 2014
- v. National Policy on Food Safety and its Implementation Strategy (NPFS) - 2014
- vi. National Gender Policy Strategic Framework 2008-2013
- vii. National Security Strategy Document (NSSD)- 2018
- viii. National Population Policy (NPP) - 2004
- ix. National Health Policy (NHP) - 2016
- x. National Policy on MSMEs (NPMSME) – 2007 Draft National Fertilizer Policy for Nigeria – 2012

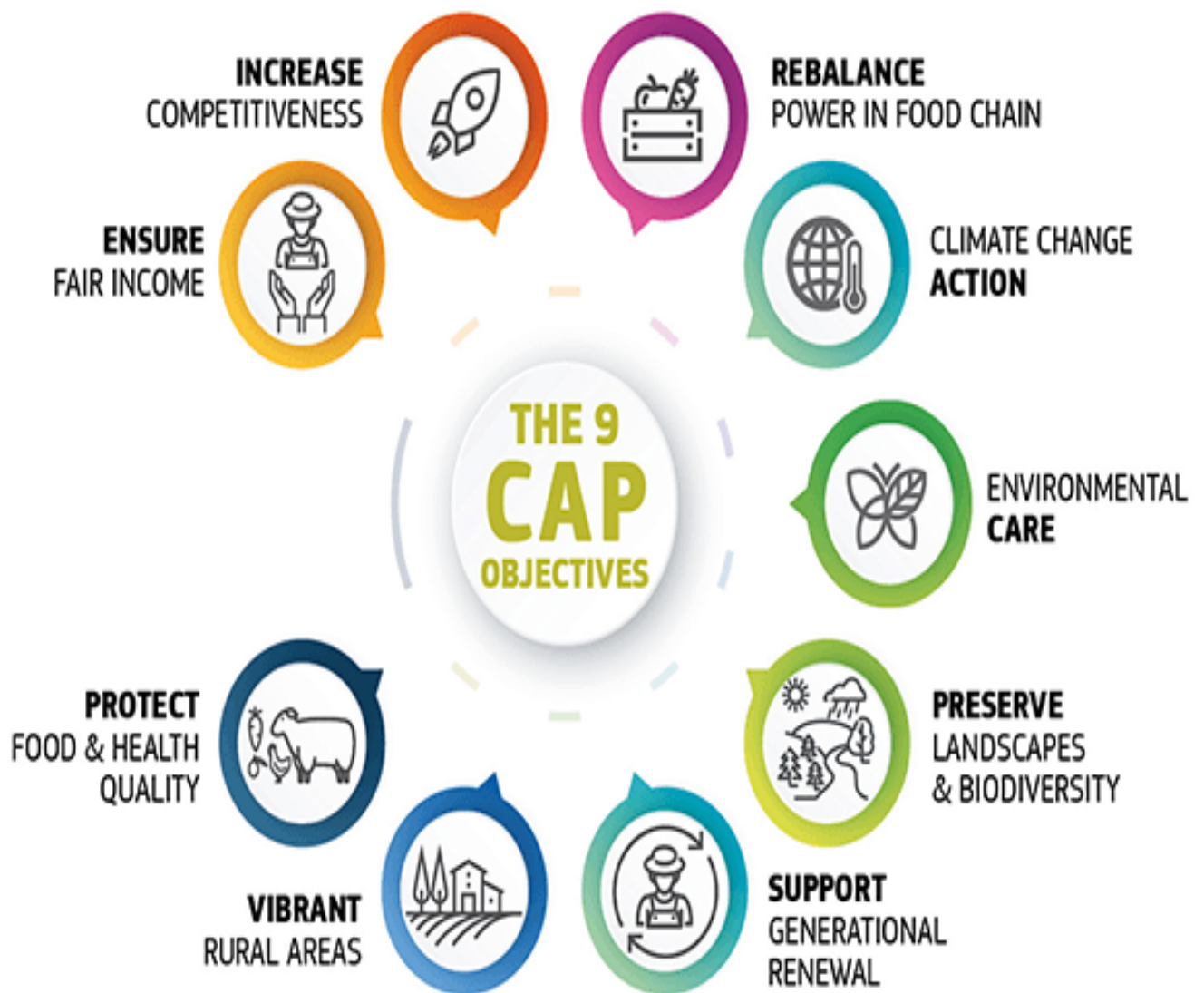


Figure 1.3: Features of Common Agricultural Policy (CAP) Objectives
 Source: EU (2008)

CHAPTER FOUR

4.0. INPUTS MANAGEMENT

Putting in place good agronomic practices is central to the attainment of ideal output. Inputs form the basis of agricultural productivity the quality and availability of which are integral to the attainment of increased productivity.

4.1. Seeds

Low productivity is intertwined with the use of poor-quality seed varieties occasionally recycled with limited application of seed dressing agents. The availability and affordability of improved seeds remain a major concern to smallholder farmers in Kaduna State who are also sceptical about seed testing to determine germination and vigour for optimal yields. The use of appropriate seed requirement can minimize losses.

The State will:

- i. Domesticate the provisions of the Nigeria Seed Council Policy.
- ii. Raise awareness on seed dressing and testing.
- iii. Promote last mile seeds supply.
- iv. Promote community seed production.
- v. Build farmers capacity in seed testing.
- vi. Establish framework for monitoring the seed quality for out-growers.
- vii. Conduct farmer field days on seed requirements.
- viii. Collaborate with NASC and research institutes to acquire new seed varieties.
- ix. Seek support of NASC for certification and licensing.

4.2. Genetic Improvement

There is low level awareness of genetically improved plant and animal resources. In the face of hunger, malnutrition and population growth, there is growing pressure on food demand. As the use of improved genetic resources is being promoted on the other hand, adequate regulatory compliance must be adhered to.

The State will.

- I. Raise awareness on the significance of genetically improved resources.
- ii. Promote the use of genetically improved plant and animal stock.
- iii. Support the development of new varieties in line with guidelines for Registration and Release of New Crop Varieties in Nigeria, 2016.
- iv. Rehabilitate and equip seed testing laboratories in the State.
- v. Enforce all regulations guiding the use of genetically improved materials in Nigeria.

4.3. Fertilizers

Organic and inorganic fertilizers are among the critical production inputs that the quality, availability, and requirement are key to increased productivity. Farmers in Kaduna State have adopted the widespread use of chemical fertilizers in crop production and the State is a huge and growing market for the product and is equally a supply hub to entire northern part of the Country. Although organic fertilizers were popular before the adoption of chemical fertilizers, commercial production and supply have not taken off. The seasonality of fertilizer supply increased demand has been a recurring challenge during the peak production period and to last mile farming clusters.

The State will:

- I. Promote private sector investment in fertilizer production.
- ii. Promote increase in the use of organic fertilizers.
- iii. Set standards in collaboration with research institutes.
- iv. Collaborate with the State Ministry of Environment to harvest waste for use as fertilizer.
- v. Leverage on extension and research institutes to review and recommend soil specific fertilizer requirements.
- vi. Cooperate with stakeholders to close the demand and supply gap.
- vii. Monitor use of chemical fertilizers to reduce soil degradation and water pollution.
- viii. Conduct field days on fertilizer use.

4.4. Agro-Chemicals, Drugs and Vaccines

Pests are an integral part of every ecosystem, the population and action of which affect agricultural productivity. Smallholder farmers in Kaduna State suffer losses from pests, diseases and weeds occasionally through direct pest invasion, weeds infestation, internal or external parasites or via a vector medium. These are usually contained using broad spectrum or specific agro-chemicals, drugs and vaccines. The indiscriminate use of chemicals, inappropriate protective measures, incorrect dosage requirement and disregard for environmental safety have culminated in health and environmental concerns.

The State will:

- i. Promote safe handling and use of agro-chemicals.
- ii. Mainstream integrated pest management in the extension delivery plan.
- iii. Demonstrate the best practices in the application and use of agro-chemicals to limit health hazards and residual effects.
- iv. Collaborate with KEPA to ensure sustainable management of agro-chemicals.
- v. Domesticate all regulations for the safe use of agro-chemicals, drugs and vaccines and its waste.
- vi. Collaborate with product certification bodies to check residual effect.
- vii. Encourage the private sector in the manufacture, distribution and storage of agrochemicals in the State.
- viii. Put in place and enforce pest and disease surveillance mechanism.
- ix. Enforce strict regulation on veterinary drugs and vaccines in compliance with the State and National regulations.
- x. Strictly regulate the supply and quality of agro-chemicals, veterinary drugs and vaccines in the State.

4.5. Livestock Breeds/Fish Broodstock

For increased productivity, the quality of Livestock breeds, and fish broodstock are essential. Land races available to farmers in Kaduna State require improvement in their genetic constitution to adapt better disease resistance, extent weather elements, high vigour and prolificacy.

The State will:

- i. Design breed and brood stock improvement programmes.
- ii. Enhance the capacity of livestock and fish farmers on best practices for breed improvement and management.
- ii. Collaborate with national and international research institutes for breed improvement.
- iii. Encourage private investors to venture into breed and brood stock development.
- iv. Domesticate national and international regulations in breed and brood stock development.
- v. Enforce all animal welfare regulations

4.6. Access to Agricultural Finance

Access to long-term sustainable finance is key to economic growth and development. The provision of agricultural finance is a viable tool that entrench services and products to actors. These services and products can be extended to our farmers to stimulate growth in the agricultural sector.

The State will.

- i. Generate farmers database.
- ii. Design responsible financing models across the value chains of competitive advantage.
- iii. Build the capacity of farmers in Agricultural financing
- iv. Promote private sector funding and investments.
- v. Collaborate with public and private financial institutions for credit, insurance and other viable instruments.
- vi. Support credit recovery
- vii. Promote linkages among players in the value chain.

CHAPTER FIVE

5.0. STRATEGIES FOR DELIVERY OF INTERVENTIONS

The Government of Kaduna State recognizes its strategic economic/market potentials, the opportunities for investments and how these are integrated to drive job creation and agriculture sector growth. The State will remain focus on farmer's well-being while deepening State revenue base in the following areas.

5.1. Land Tenure System

The State Government and stakeholders shall continue to safeguard the legislation that provides for ease of acquiring agricultural land by investors in the State as stipulated in the KADIPA Law of 2015.

Policy reviews that enhance equity and addresses the needs of women, youth, individuals, and vulnerable groups will be accorded rapid accommodation.

5.2. Land Use and Planning

Kaduna Master Plan Law (KMPL) of 2016 has improved governance oversight in land administration and driving reform of Physical Planning and encouraging community participation in planning processes. The KMPL is also enhancing sustainable use of natural resources, solid waste management, pollution abatement, and reducing ground water quality and depletion crisis.

5.3. Land/Soil Management

Soil health improvement and conservation and management is fundamental to raising farm productivity. Sustainable enhancement of soil health and fertility will be the focus of Government and its instruments of governance.

Challenges of low soil fertility and continuous production without necessarily replenishing soil elements among major unfriendly practices exacerbates soil degradation and have a resultant effect to agricultural productivity.

The Government will

- i. Collaborate with National and International stakeholders on soil testing and mapping.
- ii. Create awareness on sustainable soil management practices.
- iii. Demonstrate technologies and best practices in soil conservation and management.
- iv. Domesticated all international, continental and regional accord on Soil conservation and climate resilient practices.
- v. Collaborate with relevant to promote the adoption of organic fertilizers and organic farming.
- vi. Develop the capacity to use Soil Health Card (SHC)/test labs to monitor the quality of water being used for irrigation and groundwater.
- vii. Promote Soil test-based fertilizer use: Particularly for the areas with high salinity, fertilization will be mapped with the soil requirements (identified using the soil health card results).
- viii. Collaborate with accredited laboratories and Regulatory Agencies to monitor and ensure the safe use/trade of agrochemical in the State.
- ix. Collaborate with relevant institutions to structure and implement climate smart agricultural practices.

5.4. Water Management

Timely access to adequate quantities of water is crucial for agriculture. Irrigation resources in the State are under utilized - there is a large gap between its irrigation potential and utilization. This presents a unique low-hanging opportunity for productivity enhancement in the State without having to invest heavily in new projects. The aim is two-fold: increase the irrigation potential and ensure its optimum utilization.

The Government will:

- i. Increase irrigation coverage of Gross Cropped Area (GCA) by at least 5% per annum from 2020-2025.
- ii. Develop the technical capacity for use of renewable energy: Solar-powered irrigation pumps will be encouraged to meet farm energy requirements.
- iii. Promote the use of water resources through Government and private canals, public and private tanks, ponds, other village-level water harvesting structures, and public and private tube wells.
- iv. Encourage water-use efficiency through various measures and types.
- v. Propagate water conservation schemes, and techniques of retaining residual moisture will be promoted.
- vi. Promote the adjustments of cropping patterns where necessary to enhance optimum utilization of available water resources.
- vii. Disseminate knowledge on the appropriate use of water, and build skills for communities and encourage their participation in water/irrigation project management.
- viii. Facilitate the development and rehabilitation of irrigation infrastructures and facilities for enhanced productivity.

5.5. Climate-Smart Agriculture

Climate change as a global new normal requires a definite attention as identified by the APP 2016 the constraints to climate-smart agriculture. Being in the savannah, the State is vulnerable to climate volatility as:

- I. Limited awareness of climate issues usually causes degradation of resources, food shortage, extreme weather associated by inconsistency of the governance regimes, policies, legislation and financial mechanisms with the requirements for climate friendly agricultural practices.
- ii. Inefficient and unsustainable management of agriculture and natural resources e.g. soil, water.
- iii. Lack of awareness of soil management practices and limited availability of drought resistant variety of crops.
- iv. Poor infrastructure to support climate smart agriculture and lack of access and framework to alternative energy use.

Adaptation and mitigation strategies to address climate change challenges are part of the Policy agenda of the State.

The Government will:

- i. Create awareness on climate change and effects to human and social wellbeing.
- ii. Promote the adoption of improved climate smart agricultural systems.
- iii. Implement strategic options for improved resource management.
- v. Promote weather tolerant production practices.
- vi. Strengthen resilience and adaptative capacities of vulnerable communities/ persons exposed to climate variability and change in the agricultural sector, using project planning and implementation, resource mobilization/deployment, and institutionalized monitoring and evaluation systems.
- vii. Improve the dissemination of seasonal and real-time weather forecasts, insurance-based risk mitigation options etc.
- viii. Demonstrate productivity through training on land and water management strategies for farmers (e.g., irrigation farming, water harvesting, soil fertility enhancement, and erosion control etc.)
- ix. Collaborate with relevant institutions to structure and implement climate smart agricultural practices.
- x. Develop capacities of agricultural value chain actors on climate smart agricultural practices.
- ix. Re-design farming systems approach through collaborative research and extension services with relevant agencies to build resilient communities.

5.6. Agricultural Extension Services

Effective agricultural extension and advisory services are widely recognized as essential for any programme to transform agricultural businesses and address global social and economic development objectives. Extension systems are required for smallholder farmers to adapt to an ever-changing production trends, socio-economic, and environmental condition. The provision of agricultural extension services in the State needs to be reformed in line with new challenges and trends. These include;

- a) The democratization of the processes that empower farmers to demand more services from the public sector.
- b) Market liberalization requires farmers to acquire more skills in producing commodities for different purposes and different markets.
- c) Decentralization process now requires that local communities and farmers associations have a more significant role in the sector.

Kaduna State has 200 extension agents in 2018/2019 with a very high extension agent-farmer ratio of 1:4500 in 2018 and 1:7650 in 2019 instead of the target of 1:1000 set for both years by KADA (NAERLS and FMARD, 2019). The low number of agents is inadequate for the millions of smallholder farmers in the State, especially when coordination and personnel motivation are confronted with many challenges. All the 23 LGAs in the State have extension desk officers requiring training that enables them to perform their duties effectively.

The development of the State agriculture demands re-orientation and strengthening of its current public agriculture extension system through recruitment of more EAs. While the current extension system will be strengthened in terms of number and outreach, the knowledge gap of extension agencies will be addressed on a priority basis and re-skilling done.

There shall be collaboration with private sector extension service providers to reduce shortfall in high ratio of farmers to extension agents in the State. Both public and private organizations are active in extension and advisory services, which constitute an integral part of the agricultural innovation system. Major extension providers include public agencies, agribusinesses (input suppliers, product buyers, and financial agencies), producer organizations, non-Governmental organizations, civil society interest groups, mass media, and private farm advisors.

- i. Collaborate with relevant institutions and agencies to promote user friendly technology incubation, transfer and utilization across all agricultural practices.
- ii. Promote mobile-based advisory services since most farmers have access to mobile phones, a system of communication through mobiles will be established to enable farmers to get regular advisories on weather, plant protection, farming operations, and markets.
- iii. Encourage value-addition to reduce post-harvest losses.
- iv. Cooperate with private sector and communities for sustainable strategy in extension delivery.
- v. Collaborate with national institutions, projects, programs and private sector to replicate the Community-Based extension (CB) model and the Adopted Village extension Concept.
- vi. Leverage on options for ICT enabled agricultural extension (e-extension) and collaborate with the FDAE/NAERLS National Farmers Helpline for improved effectiveness.
- vii. Adopt a Public-Private Partnership (PPP) model for extension services delivery.
- viii. Build the capacity of Community Based Advisors (CBA's) through lead farmers to service farmer groups effectively, and they shall be supported to become agripreneurs in their immediate locality.
- ix. Support the frontline extension agents and CBAs to facilitate linkages with private sector input agencies to provide access to seed of improved crop varieties, improved livestock and fisheries inputs, fertilizers and mechanization options, and access to aggregators/offtakers.
- x. Promote the use of integrated extension activities through Innovation Platform concept as useful tool to work with farmers in addressing challenges along the entire agricultural value chains.
- xi. Integrate the traditional extension approach that includes farm visits, field days, demonstration plots, workshops, newsletters and distribution of printed materials with use of ICT4Ag such as e-learning options, social media
- xii. Apply the Federal Government's Agricultural Extension Policy, continue to leverage on KADA and strengthen it as the existing unit for extension service delivery.
- xiii. Create an Agricultural Innovation Fund (AIF) for technical hand-holding, imparting knowledge, and free dissemination of technical know-how. This will be a multi disciplinary activity. It will be guided by multi-disciplinary scientific team.
- xiv. These funds shall be registered with the Corporate Affairs Commission (CAC) and shall be managed by a Board of Trustees with a chairman, who shall be a reputable private citizen of the State.
- xv. Membership of the AIF shall be drawn from the private sector, representatives of relevant

MDAs including the Ministry of Agriculture and the ADPs, as well as representatives of Civil Society Organizations (CSOs) and Farmer Based Organizations (FBOs) and Kaduna Chambers of Commerce, Industry, Mines and Agriculture (KADCCIMA).

- xv. Financial contributions to the AIF shall include 20 percent of produce tax across the State to be paid into the fund, contributions from State Government, Local Governments, FBOs, Donor Agencies, Banks, KADCCIMA, NGOs and CSOs
- xvi. Restructure the extension system through PPP and install quality control measures to ensure that the system is demand-driven with value chain approach, client-centered, farmer-led; and women, youths and vulnerable groups inclusive.
- xvii. Adequately fund the Research-Extension-Farmers- Input-Linkages-System (REFILS) to ensure the adoption of relevant innovations and feedback from farmers.
- xviii. The management of agricultural extension services shall be handled by a joint State

5.7. Agricultural Mechanization

Agriculture is conducted in the State, mostly by hand-tools (70-90%), draught animal power (56.7%), and mechanical power (5-15%) of the cultivated land (KDBS, 2017). On the average, Nigeria has a low farm mechanization rate of 0.021 horsepower/hectare as against the 1.5 horsepower/hectare recommended by FAO (FMARD, 2016b). One of the reasons for low incomes from cultivation by the farmers in the State is the high cost of labour that squeezes farmer incomes. With low incomes, these farmers are unable to access quality inputs. It is a trap for the small and marginal farmers of the State. To break the trap, the State Government will ensure timely access to adequate machinery for all in an affordable manner.

The State has a very low level of farm mechanization.

The major constraints in farm mechanization in State include:

- ◆ Limited numbers of tractors in the State resulting in low access to machines, equipment, and spare parts at affordable rates.
- ◆ Weak regulatory framework guiding the mechanization subsector and poor investment leading to its underdevelopment.
- ◆ Low capacity building efforts that support farmers to operate farm machinery and meager service centers.

There is scope for increasing the level of mechanization to improve productivity and income of farmers.

The Policy focus shall be on:

- I. Designing a service-support mechanism for farm machines: For small and marginal landholders, a new model of support will be designed where the State Government will encourage the hiring of farm equipment by subsidizing the service costs.
- ii. Women, friendly equipment will be prioritized. Increasing feminization of agriculture demands more 'women-friendly' (smaller) machines, and these will be encouraged with higher incentives compared to standard farm machinery.
- iii. The Government and communities shall initiate an agricultural land reform process to encourage farmers and settlers on cultivable lands to aggregate the same for easy mechanization operations. The Government shall also provide incentives for clustering, such as schools, clinics, electricity, water supply, and feeder roads.
- iv. The Government shall encourage the establishment of private sector marketing and maintenance shops for agricultural machinery in the State

- v. Relevant stakeholders shall provide support to smallholder farmers' groups through loans to enable ownership of small machinery and farm tools.
- vi. The private sector shall promote agricultural machinery fabrication through local, institutional and international partnerships.

5.8. Irrigation Management

Only about 0.3% of farm families in the State use irrigation facilities in their operations (KDBS, 2017). This limits most farmers to rain-fed agriculture only. The Government will promote dry season farming among farmers for enhanced livelihoods through the following ways.

- I. The State shall collaborate with the Federal Ministry of Water Resources and the Upper Niger Basin Development Authority (UNRBDA) to exploit the irrigation potential of the River Kaduna, River Gurara, and other perennial rivers in the State.
- ii. The State Government will develop additional irrigation sites across the State (including construction of earth dams, tube wells) and provide extensive capacity building for women and youths in irrigation agriculture.
- iii. Government in partnership with private sector groups will promote access to irrigation pumps as starter packs for beneficiaries of its empowerment training Programme on irrigation.
- iv. The Government will encourage effective use of available water bodies in the State.
- v. Align with Transforming Irrigation Management in Nigeria (TRIMING) Project on capacity building for women and youths in irrigation agriculture.
- vi. Promote efficient usage of irrigation facilities and water.

5.9. Processing, Storage and Marketing

Adequate agro-processing to add value to products, proper storage and warehousing and efficient marketing will enhance the development of the agricultural sector of the State. The State shall enhance the food processing capacity by:

- i. Ensuring joint sector relationship on issues of processing, storage, warehousing and marketing.
- ii. Attracting investment in processing industries to the State by providing investment-ready concepts in areas of comparative advantage; and connecting farmers to off-takers.
- iii. Encouraging local processors to settle in Agro-Processing Clusters (APCs).
- iv. Providing incentives for the establishment of crop pack houses and cold chain infrastructure across the State.
- v. Enlightenment of farmers and commodity dealers on safe and healthy methods of produce processing and storage.
- vi. Ensuring effective legislation to determine the infrastructural requirements so that warehouse facilities can adequately store and handle agricultural commodities for which the licence is requested.
- vii. Effective and enabling legislation to protect the rights and obligations of depositors, creditors and warehouses to strengthen confidence among participants and ensure the wide use of warehouse receipts in commodity exchange transactions.
- viii. Providing standards for storage structures by relevant bodies.
- ix. Support partnership with relevant institutions for research and innovation in meeting mechanization and processing needs of the State.

- x. Assist local fabricators of agricultural machinery to set up and improve on existing workshops.
- xi. Review Agricultural Training Centers (ATCs) to function as Farm Knowledge Centers (FKCs) for the training of youths and other farmers in modern techniques using local languages
- xii. Ensure enforcement of best practices in the processing and storage of agricultural produce.
- xiii. Efforts will be made to shift farmers to agro-business and impart them with farm-related skills, which are currently in short supply. The State Government will create and nurture 'agripreneurs' to achieve more magnificent value addition through agro-processing and reparation of modern extension services.
- xiv. Government shall ensure the capacity building of staff of MOA and KDBS on agro-products output capturing for quality data; and extension service providers shall help the farmers with timely market information.

5.10. Food Safety and Quality Standards

The State will strengthen the existing Food Safety System at each enterprise level at State and LGAs platforms to develop a safe and reliable food supply chain from 'Farm-to-Table'. The overall goal of this Policy is the attainment of a high level of food hygiene and safety practices in the State, which will promote health, control food-borne diseases, minimize and finally eliminate the risk of diseases related to poor food hygiene and safety. The State Policy leverage the National Policy on Food Safety and its Implementation Strategy, 2014.

The Government will:

- I. Conduct awareness campaigns.
- ii. Pursue programmes that will improve public health in the State by reducing food borne illnesses and protect consumers from unwholesome, mislabeled or adulterated food.
- iii. Enforce principles and practices in food safety management.
- iv. Build capacity to encourage Good Manufacturing Practices (GMPs), the Hazard Analysis Critical Control Point (HACCP) system, ISO 22000 and Codex Alimentarius Commission Guidelines adoption.
- v. Establish and exchange forum among stakeholders involved in food safety activities, to strengthen their roles and improve consumer confidence in the food supply chain.
- vi. Collaborate with various inspection agencies and put in place effective mechanism for monitoring and evaluation of food safety in the State.
- vii. Disseminate appropriate protocols for the use and handling of food additives, processing aids, agro-chemicals, feeds, and veterinary drugs in-line with international best practices and compliance with the safeguard law.
- viii. Publicize the procedures for registration and licensing of the cottage, small, medium, and large-scale food establishments, food business operators and food vendors in compliance with food safety regulations and community health.
- ix. Strengthen the mechanism of meat inspectors, agricultural extension workers, and other relevant stakeholders involved in the inspection and enforcement of food safety laws, and regulations.

- x. Advocacy and sensitization shall be carried out by Policymakers, opinion leaders, food handlers, health workers, consumers, religious groups, traditional rulers, and owners of food industries.

5.11. Weights and Measures (Legal Metrology)

The State Policy on weight and measures aims at facilitation of fair trade. It encourages the use of accurate weighing and measuring equipment, promoting fair business practices, and protecting the consumer against exploitation in the sale of agricultural goods and services. The Policy will align with weights and measures Act and Laws of the Federation of Nigeria, 2004 and weights and measures (Legal Metrology and Related Services) Regulations of Nigeria 2012.

The Government will

- I. Conduct spot checks to enforce established standards of weights and measures, regulate trade and commerce in weights, measures, and other goods which are sold or distributed by weights, measure or number, and for matters connected in addition to that or incidental thereto.
- ii. Ensure compliance with the metric system base of the international system of units either the gram (g), kilogram (kg), area in square metre (m²), volume in cubic metre (m³), time in second; capacity in kilo litre (kl) or litre (l or L) and temperature in degree Celsius (°C) or degree Kelvin (°K) land in hectares.
- iii. Ensure packaging adopt this format:
 - a. The name and address of the manufacturer, or packer of the goods;
 - b. The common or generic name of the goods contained in the package;
 - c. The number or net weight or measure of the goods in the package.
 - d. In some cases, the date marking showing the last day, month and year by which the goods may be sold.
- iv. Must include approval of patterns/types of equipment, initial and after repairs verification, periodic verification, and inspection of the use of the equipment.
- v. Declare any false, misleading claims regarding product weights and contents, whether by way of word of mouth, a notice, label, invoice or advertisement as an offense.
- vi. Ensure technical regulations are in place to give confidence in the measurement of agricultural products assuring farmers of a fair deal and creating a sound basis for the Government to collect duties.
- vii. Approve (before manufacture) models of weights and measuring instrument intended to be manufactured after the commencement of the proposed legislation.
- viii. Confer powers to agricultural produce inspectors to search, seize, and forfeiture of non standard weight or measured products.
- ix. The State Government shall put measures in place to ensure that commodities are correctly certify through tests weighing and measuring instruments in use by a trader for accuracy and precision stamped by the Inspector of Weights and Measures.

CHAPTER SIX

6.0. SUSTAINABLE INTENSIFICATION OF PRODUCTION SYSTEMS

The priority value chain for agribusiness interventions is a combination of food staple and high value commodity chains. The staple crops include Maize, Rice, Sorghum, and Soybean. The high valued enterprises include Ginger, Cashew, and Shea nut. Prioritized livestock enterprises are dairy production, ruminant fattening, broiler and layer production; leather products; and fisheries.

6.1. Crops

Kaduna State is home to wide varieties of staple and high-value crops due to its fertile soils and suitable weather for plants to grow well.

- i. Kaduna State Government will encourage the production of Maize, Rice Sorghum, Soybean, Cowpea, Groundnut, Ginger, Cashew, Sugar Cane, and Sheanut as priority crops.
- ii. Improve farmers' access to inputs and ensure that structures for good seed quality are in place.
- iii. Promote availability, affordability, and accessibility of good quality production inputs, such as agrochemicals and fertilizers.
- iv. Support the provision of effective pest control services and enhanced extension service delivery.
- v. Promote adaptive research by synergizing with agriculture-related institutions and agricultural research institutes on innovations in seed technology and other research products.
- vi. MOA, NGOs NASC, KADA shall work on improving certified seeds and seedlings for the production of mandate crops.
- vii. There shall be the formation of cooperative societies along the mandate crop value chains for distinct advantages to farmers.
- viii. There shall be the designation of registered and certified seed producers in the State
- ix. MOA, KADA, in collaboration with credible agro-input dealers, shall organize the timely provision of good quality agro-inputs.
- x. Facilitate the process of making State Regulatory Laws on seeds and other agricultural inputs and ensure quality.
- xi. MOA and Ministry of Local Government Affairs, in collaboration with NESRA, SON, and pest control services providers, shall organize the formation of the Pest Service Control Monitoring Unit.

6.2. Horticulture /Tree Crops

The State enjoys a natural Competitive advantage for horticulture, but its potentials are not wholly exploited. The agro-climatic conditions in the State are suitable for fruits, spices, and vegetables. Additionally, income-generating potential is higher in the case of horticulture compared to cereals or legumes; this Policy gives a major thrust to horticulture production in the State. It aims to create an enabling environment for sustained and inclusive growth. The following interventions are envisaged:

- i. The State will Create Cluster-based production centers for various fruits, vegetables, and spices crops. Under the cluster-based approach, regional production belts and clusters are identified and supported through relevant federal and State Government schemes and Programmes.
- ii. Acreage under the fruit, vegetables, and spices will be increased leveraging on the areas of high irrigation potential.
- iii. Also, an increase of acreage under fruits, vegetables, and spices will be achieved using incentive mechanism to make farmers embrace horticultural crops.
- iv. Production plans will be aligned to food safety concerns, industry demand and revenue drive of the State, of the consumer and advisories on use of plant protection measures will take market needs into consideration.
- v. Efforts will be made to identify and promote new techniques and technologies of production, such as high-density plantation and protected cultivation.
- vi. Getting the right market is crucial for value capture. The State will encourage the setting up of cold-storage systems for fruits, and vegetables.
- vii. FPOs will be encouraged to link up with the market directly, both in terms of quantity and quality.
- viii. Markets will be linked to production clusters. It is proposed that an Agriculture Marketing Board be established in the State.
- ix. The State will set up a mechanism for the regulation and promotion of compliance with quality specifications for fruits and vegetables.
- x. The State Government shall collaborate with the relevant research and training Institutes to improve the genetic quality of wild species/less developed crops of economic values, especially spices such as Parkia and Moringa.
- xi. The private sector should be challenged to pay attention to identified forest food resources with the objective of increasing dietary diversity and exploiting their export potential.

6.3. Livestock

Livestock has contributed significantly to the increase in farmer's incomes in the State.

This has been the main source of income for herders/pastoralists and marginal farmers. The Policy for livestock development will focus on dairy cattle, poultry, sheep, and goats, and will be private sector-led.

The Policy thrust on livestock development in the State includes the following.

The State will:

- I. Ensure that the Kaduna State Livestock Regulatory Authority shall collaborate with relevant agencies to supervise livestock control posts and checkpoints for active disease surveillance, monitoring, revenue and data collection.
- ii. Conduct livestock surveys and census every seven (7) years. Access to improved disease-resistant breeds, ambulatory services, vaccines, and credits for livestock sector investments will be promoted.
- iii. Strengthen its livestock identification and tracking; disease surveillance system; and quarantine services.
- iv. Incentivize the setting-up of modern ranching, livestock feed supply systems, abattoirs and/processing system.
- v. Promote micro-livestock rearing using messaging platforms such as radio and TV campaign, school Programmes.

The following livestock value chains are prioritized:

6.3.1. Dairy Cattle

Dairying is predominantly ancillary to agriculture but forms a sustainable source of income for marginal and landless farmers who own more than 80 percent of bovines in the State. Interventions in dairy include:

- i. Promotion of efforts to improve the genetic potential of cattle for increased milk output per animal. Crossbreeding with high genetic merit bulls with excellent local and foreign traits will be promoted. The State will strengthen semen stations, expand artificial insemination (AI) coverage. Three Artificial insemination centers shall be established, one each in the three senatorial districts of the State.
- ii. The State will collaborate with relevant Research Institutes and Universities to build local capacities for extensive adoption of AI technology and adherence to the Standard Operating Procedure (SOP) in the industry.
- iii. The reproductive efficiency of dairy animals will be improved by using advanced breeding technology for sustained breed improvement. Sex-sorted semen will be introduced and made affordable to improve the productivity and profitability of the sector. A comprehensive digitized system of recording animals for facilitating selection will be developed and implemented.
- iv. Organized breeding will cover 1.5 million breedable bovines from 2021 to 2025.
- v. Dairying through cooperatives will be encouraged by creating infrastructure for cattle feed manufacturing, milk procurement, processing & marketing.
- vi. Beekeeping will receive special modernization development attention through MOA and KADA.
- vii. The State Government will encourage local cooperatives involved in the dairy value chain. Milk Cooperative Producers Associations (MILCOPA) and others cooperatives operating at the village level will be with coolers and collection and distribution tools over the next five years.
- viii. Government shall encourage intensification of livestock rearing system enhance milk and meat yield, and minimize crop farmers/pastoralist conflicts.
- ix. Standard veterinary clinics and diagnostic laboratories shall be established or upgraded in each of the 3 agricultural zones of the State.
- x. IT-based network for epidemiological surveillance will be developed and access to veterinary services will be expanded to cover every village that has up to 100 animals.
- xi. A fodder development Programme to grow fodder will be put in place. Efficient use/nutrient enrichment of crop residues and establishment of pastures & storage facilities for dry seasons, feeding of livestock shall be prioritized.
- xii. The cultivation of newly developed and fortified varieties/hybrids of fodder crops, perennial grasses and legumes, and unconventional/under-utilized feed resources like Moringa, etc. will be encouraged.

6.3.2. Small Ruminants- Sheep and Goats

The sale of live animals has increased in Kaduna State and increased incomes of several marginal farmers and rural households.

- I. The State will set up rearing centers to make available one-month old small ruminants, primarily sheep and goats. to farmers; and will develop a separate marketing infrastructure for sale of live animals.

- ii. The participation of the private sector in the meat processing industry will be incentivized.
- iii. Since Sheep and Goat rearing has enormous potentials in the State, the following productivity enhancement strategies will be launched:
 - ◆ Small ruminants' rearing will be encouraged in village clusters with an efficient system of marketing sheep and goats set up.
 - ◆ Veterinary services and vaccines will be provided at subsidized rates.
 - ◆ Medium-term low-cost credits for the purchase of animals will be made available through banks.
 - ◆ Trade of live Sheep and Goat will be, based on the weight of the animal.
 - ◆ The private sector will be encouraged to set up modern abattoirs in essential markets.

6.3.3. Poultry

Backyard poultry generates additional income and improves the nutritional status among the poorest of the poor. Backyard poultry plays a pivotal role in providing livelihoods and achieving nutritional security in rural areas.

The State will:

- I. Invest in Poultry production at MSME levels will be encouraged through various agricultural development initiatives.
- ii. Boost entrepreneurship development and employment generation and allow 'agripreneurs' in poultry for Women Small Holder Groups (WSHG).
- iii. Ensure that Large producers in the poultry sector will be incentivized to set up production lines in rural communities to usher in rural prosperity through a poultry production.
- iv. Promote the establishment of standard hatcheries for poultry by private investors.
- v. Technicians will be trained to administer vaccinations at village/farm level using vaccines made available through Government veterinary clinics. Poultry vaccines will be provided at a subsidy for small/backyard poultry units. The use of antibiotics in poultry will be regulated.
- vi. Medium-term low-cost credit for the purchase of birds will be made available through the Micro Finance and other financial institutions.
- vii. Investments in standard poultry feeds production will be incentivized.
- viii. Investors in organic poultry manure plants (manufacture) will be encouraged.
- ix. Business plans focused on vertical integration in the poultry sector at scale will be prioritized for Government support. Farmers' Producer Organizations would be supported for aggregation of poultry egg and meat in the rural areas.
- x. Education and awareness about the nutritive value of eggs and poultry through various platforms would be intensified.

6.4. Leather and Leather Products

The State Policy on leather products aligns with provisions for the industry in the APP 2016 and the National Leather and Leather Products Policy (NLLPP) 2018. The thrusts are:

- I. Collaborate with relevant institutions such as NARICT, NILEST, NAPRI and non-State actors in the leather industry to conduct innovative research across the leather value chain in the State
- ii. To meet the research and development needs of the industry and attract domestic and

- iii. international investors.
- iii. Ensure suitable and conducive business and administrative environment for the coordination, management, and promotion of leather and leather products activities
- iv. Developing short, medium, and long-term leather industry development plans that will provide a clear vision that will adequately place the State in the global leather and leather products business.
- v. Enhance the production of high-quality leather and leather products using cutting-edge technology and global information platforms.
- vi. Promote integration of environmental concerns among industry operators by ensuring efficiency in waste management and compliance with the environmental standard.
- vii. Ensuring the provision of commensurate compensation for environmental damages and public safety breach.
- viii. Establishing Effluent Treatment Plants (ETPs) around the leather industry to encourage industrial clusters which will provide benefits for economies of scale in waste management
- ix. Ensure adherence to standards and marketing of quality hides and skins, leather/leather products, leather works accessories chemicals, and auxiliaries by registered entities.
- x. Establish a sustainable funding structure through the Government, Organized Private Sector, and development financing to ensure a steady and adequate supply of funds for activities within the various segments of the value chain.
- xi. Encourage investors in the design, fabrication, and mass production of tools, machinery, and chemicals using local inputs.

6.5. Grazing Reserves

The fundamental underlying causes of farmer-herdsmen conflict in the State are changing resource access rights to communal grazing, water resources obstruction by individual of planted arable crops, and inadequacy of grazing resources. All these have resulted in a significant reduction in available livestock feed resources.

Unregulated nomadic grazing, apart from its potential to increase insecurity and conflicts, also hurts the environment. Controlled grazing allows for integrated crops and livestock farming practice and can drastically minimize conflicts, resource wastages, and associated killings. The provisions in this section align with APP 2016 and Kaduna State SIP 2017-2019, rolled over 2021-2015.

- I. The State Government shall promote the adoption of controlled grazing concept to end incessant farmers/herdsmen conflict in the State. This will involve, among others, training of herdsmen and farmers in critical areas of their professions for peaceful co-existence, increased capacity, and enhanced income.
- ii. Collaborative engagement with all stakeholders will be promoted, and will involve the herders' associations, farmers groups, local communities, security agencies, and NGOs.
- iii. Government shall facilitate the establishment of ranches where pastoralists will permanently maintain their livestock in land areas which they should acquire from willing individuals or communities; and where possible, many of these ranches be located proximate to each other so as to benefit from common pool of facilities. Pastoralists with large cattle holdings and private sector investors willing to inject capital into commercial dairy and beef production shall be targeted for these ranches.
- iv. Integrated crop-livestock settlements shall be developed to meet the needs of smallholder

- farmers and pastoralists who are sedentary or semi-sedentary and their capacities shall be built to engage in cooperative planning and sustainable use of land, water and forage resources for the production of crops and livestock.
- v. Government shall demarcate wet and dry season grazing areas and set up mechanism to coordinate the migration of pastoralists between these two areas; stock routes shall be demarcated and facilities provided along the migratory routes to allow for free movement of pastoralists.
 - vi. Government shall facilitate the development, reactivation and preservation of the existing 16 grazing reserves in the State. Expansion of these grazing reserves will boost livestock population, lessen the difficulty of herding, reduce seasonal migration, and enhance the interaction among farmers, pastoralists, and rural dwellers.
 - vii. A multi-stage conflict management framework shall be developed to curb the danger posed by farmer-herdsmen conflict. The framework shall be statutory with guidelines for committees at community, local, and State levels. Continuous engagement with traditional and community leaders, key Government institutions, the media and the security agencies shall be ensured to work out effective mechanisms for the de-escalation of violent conflicts and the peaceful resolution of disputes between farmers and pastoralists.
 - viii. In the development of controlled grazing in the State, adequate provisions shall be made to ensure effective use of resources to mitigate impact on climate associated with livestock production (e.g. to reduce carbon emission, increase carbon sequestration, enhance nutrients recycling, minimize water wastages, etc.). Therefore, smart crops and livestock production strategies under good agricultural practices shall be incorporated.

6.6. Fisheries

This section caters to artisanal freshwater fisheries and aquaculture. The State has potentials for capture fisheries and aquaculture, and if these are well harnessed, it can be one of the growth propellers in moving the State agriculture forward.

The Policy thrust aligns with Kaduna State MTSS 2017 -2019 and APP2016

The State will:

- I. Encourage fish breeding practices, in addition to promoting the availability of pest and disease control services, and enhance traceability.
- iii. Increasing access to fisheries/aquaculture inputs and, promoting hatchery development, standardization of hatchery and fish breeding processes.
- ii. Increase access to fisheries/aquaculture inputs and promote hatchery development, standardization of hatchery and fish breeding processes.
- iv. Re-enforce the regulatory framework for fishing activities and tackling insecurity on fishing grounds, landing sites, and processing centers.
- v. Promote quality fish processing, product varieties, and marketing.

To give an impetus to the sector, the Government will ensure the following:

6.6.1. Capture Fisheries

- I. Infrastructure at fish landing centers will be improved to ensure that the quality of fish does not deteriorate. This will include hygienic platforms, space for cold stores, provision of ice slabs, etc.
- ii. Welfare schemes for fishermen will be introduced, including life insurance, assistance to buy fishing boats, nets, etc., and climate information services to fishers to manage weather-related risks.
- iii. Digitization and geo-tagging of fisheries assets in the State will be taken up using GIS and spatial planning tools will be used to plan fisheries development in the State efficiently.
- iv. Inland fisheries will be encouraged through revisiting the leasing Policy of ponds/water bodies (in collaboration with FMWR) and making it 'fisherman friendly'; long-term leasing of freshwater ponds/water bodies and Government land to take up freshwater fishing by fishermen, entrepreneurs, educated, unemployed youth and women SHGs.
- v. Fisherman co-operatives/SHGs/FPOs will be given preference in the leasing of ponds.
- vi. The State's Fisheries Edict will be modified in collaboration with the Federal Ministry of Water Resources (FMWR) to lease out all water bodies above 10Ha to Fishermen Cooperatives, Women SHGs and unemployed youth agripreneurs to boost fish production and enhanced income under the Code of Conduct for Responsible Fisheries by FAO, 1995.

6.6.2. Aquaculture

- I. The State Government shall support good quality fish seedlings to fish farmers through the upgrading of existing/establishment of more Government hatcheries and creating a conducive environment for private hatcheries operators for year-round production of quality/genetically improved fish seeds.
- ii. The State will ensure that farmers have access to feeds of the right quality for fish. The State will encourage feed production through SME enterprises and to supply fish feed at subsidy over the next 5 years (2025).
- iii. The State Government shall collaborate with the Federal Department of Fisheries and Aquaculture (FDFA) and the Fisheries Society of Nigeria (FISON) in the implementation of fish hatchery certification Programme under the 'National Guidelines for Quality Fish Seeds Production' in the State.
- iv. The State shall encourage species diversification by introducing and scaling other species in addition to Catfish and Tilapia, and will promote investments on hatcheries, farm demonstrations, and domestic market.
- v. Inland aquaculture for high value species shall be promoted through a horizontal expansion of freshwater fish farming in the State. by promoting suitable fish rearing facilities; promotion of two crop system per year by stocking advanced good quality fingerlings and thus doubling catfish productivity from the present national average of 2.8 mt/ha/year to 6 mt/ha/year in the next five years in the State.
- vi. The State will promote solar water pumps and ground water tube wells to facilitate year-round fish farming; ornamental fish and integrated fish farming systems.
- vii. The State will encourage primary fish farmers' co-operative societies, women SHGs and young entrepreneurs for cage culture in reservoirs.
- viii: Access to loans by fish farmers/fisherfolks will be encouraged for enhanced fish productivity.

- ix. Cold chains for fish marketing will be encouraged; ice blocks manufacturing plants/ centers, pre-processing sheds, processing plants and sales kiosks will be established. Transportation of fresh fish products with insulated vans, ice box, motorcycles with ice box and bicycles with ice box, and sales kiosks will be promoted across the State to enhance quality, distribution, and reduced post-harvest losses.
- x. Value addition plants will be established for fish products to enhance product varieties to fish consumers. Specifically, fish fillets, fish powders, fish biscuits etc. will be promoted as food supplements for schools and school feeding Programmes.
- xi. Marketing infrastructure for fish will be strengthened by setting up exclusive fish processing and sale centers in various parts of the State. Hygienic fish markets will be opened in all LGAs as well as cost-effective technology for hygienic fish marketing; small fish sale kiosks will be promoted; and existing village-level small-scale fish retail vendors will be supported to establish hygienic sale counters.

6.7. Women in Agriculture

Women constitute an estimated 52% of the population of Nigeria and are significantly affected by the policies and actions of Government (FMARD, 2016a). An estimated 60% of the smallholders' farmers in the State are women with no access to finance, equipment or market (KDSG, 2014a). Women largely supply labor in food crop, fish and livestock production, processing working between the farm and the home.

Women in Kaduna State are actively engaged in all the phases of agricultural cycle, i.e., sowing, cultural activities, harvesting and post-harvest management.

The Policy thrust of the State is aligned to that of the National Gender Policy in Agriculture (NGPA) 2016 and Guidelines for Gender and Social Inclusion in Policy and Strategy Formulation and Implementation in Kaduna State, 2014.

The State will:

- i. Maintain gender inclusiveness in all governance and Programmes related to agriculture. Provisions shall be made in agriculture sector governance that enables at least 30% of women's involvement in the State especially at the level of decision-making and Policy implementation.
- ii. Promote Women friendly' farm equipment and wherever necessary, there would be convergence between various research and implementation institutions has been brought about. In addition, the State government would also make Provision for physically challenged people with special needs in promoting friendly farm equipment.
- iii. Provide more equitable product and service delivery mechanisms for women farmers.
- iv. Encourage more women agriculturists to be trained and placed in the State agricultural extension system.
- v. Support Female extension workers with a conducive and safe environment, by ensuring enough opportunities for growth as enterprising workers.
- vi. Regularly monitor the implementation of various schemes while ensuring the additional variable segregating that capture performance/ participation based on gender.
- vii. Ensure that Agricultural extension material will be rolled over to cater to the needs of women farmers with more focus on backyard livestock/poultry/fisheries and women-

- friendly crops like vegetables and techniques of production.
- viii. Design, Both farm products and production technologies and encourage the participation of women users. it would also intensify efforts to get women friendly farm equipment designed, produced and promoted.
 - ix. Promote the creativity, productivity and entrepreneurship of women and their capacity to further their skills will continue to receive focus. Progressive women farmers will be duly rewarded and recognized.
 - x. Continue to track the share of women in the total number of beneficiaries in Government assistance initiatives will be undertaken.
 - xi. Promote mainstreaming of gender into the State's agricultural sector, including agricultural politics, plans, Programmes and projects and build institutions to project the activities of women in the agricultural sector, for sustained economic growth and development.
 - xii. Enhance Value chain upgrade will to support women in agriculture in the transition from subsistence farming to medium and large-scale agribusiness.
 - xiii. Support Women farmers in the State will in improving the quality and quantity of food production and consumption to ensure their food and nutrition security.
 - xiv. Sustain the campaigns for improved understanding and acceptance of the economic and social benefits of non-exclusive access to land and other resources in the State

6.8. Food and Nutrition Security

Food insecurity is closely linked to hunger and malnutrition, whilst malnutrition is the most serious consequence of food insecurity. Malnutrition and nutrition-related morbidity continue to be of public health concern in Kaduna State. Malnutrition is widespread in the entire country, although the scale and scope vary between regions and across urban-rural divide. Malnutrition manifests mainly as under-nutrition, over-nutrition and micronutrients (minerals and vitamins) deficiencies. CSIS (2019) reported that Kaduna State has a high stunting rate (56.6%) compared with Niger State (38%), Benue State (28%), Ebonyi State (21%), Delta States (19.9%) and Cross River State (18.5%).

Recently the State Government commenced the process of domesticating the Nigeria Multi-Sectoral Strategic Plan of Action for Nutrition (NMSPAN), which provides the framework for addressing the problems of food and nutrition insecurity at all levels in the country. It recognizes that winning the war against malnutrition requires collaboration with development partners, the academia, media, private sector and all relevant stakeholders in the State.

The guiding principles for the State's Policy food and nutrition security hall

The State will:

- ◆ Focus on the prioritizations of poverty reduction and safety nets for the poor in Government budgetary allocations; ·
- ◆ Ensure Recognition of adequate food and nutrition as a human right and adopting a rights-based approach to planning, budgeting, and implementation of the Policy; ·
- ◆ Mainstream Gender considerations and the needs of all vulnerable groups are integral to all components of the Policy.

The Policy thrust shall focus on:

- i. Promoting food fortification and enhanced value additions to improved nutrition and

- health.
- ii. Diversifying household food diets and consumption especially targeting women, the elderly and children, to enhance access to vital and adequate nutrients.
 - iii. Improve food safety and public health through good agricultural practices along the value chains.
 - iv. Building the resilience and social protection nets through food systems for vulnerable groups
 - v. Promoting nutrition research and information systems
 - vi. Improving the capacity to address food and nutrition security issues within the agricultural sector.
 - vii. Promoting nutrition advocacy, education, social marketing, behaviour change communication, surveillance, monitoring and evaluation.
 - viii. Providing counterpart funding for home-grown school feeding Programme -to improve the nutrition status of school children in the State.
 - ix. Enhancing the utilization of partnership and the network of stakeholders in harnessing resources for the implementation of food and nutrition Policy; and the State will incorporate food and nutrition considerations into its development plans at all levels of Government and will establish a system for monitoring and coordinating food and nutrition activities in the State.

6.9. Sustainable Agriculture

Kaduna State Agriculture Policy aims at creating conducive framework for the sector to thrive and will promote organic farming as a component of its sustainable development (SDG) agenda. A substantial part of the State, particularly those located in rain-fed, dry land, and hilly areas, are prone to weather and climate whims. Increasing agricultural productivity and farmer incomes in these areas has always been a daunting challenge. While encouraging a shift to organic farming, the emphasis will be on market driven production Programmes where the produce can be sold at premium prices. Systems will be put in place to ensure easy certification of such organic produce. The focus of the Policy will consider the various agricultural systems conservation and sustainability option to drive food, nutrition security and economic development agenda of the State:

- i. Government shall identify areas of the State with poor endowments like rain-fed and hilly tracts, where consumption of external inputs is low and per hectare yields are also low and organic farming will be promoted there.
- ii. Promoting organic farming of niche commodities shall be in areas where the State has Competitive advantage. To begin with, organic farming for low-volume high- value crops like spices, medicinal plants, fruits and vegetables will be promoted.
- iii. Availability of organic manures in adequate amounts and at affordable costs to the farmers will be ensured.
- iv. Government shall make targeted efforts to create a market for niche products. Spices and vegetables unique to the State will be branded to encourage their production and certification facilities provided.
- v. The Government will set up pilots for integrated farming in selected locations to

demonstrate the value of integrated farming and to test options that will optimize the income of farmers. The pilots will also test an integrated extension system and provide inputs and technology support.

6.10. Market and Infrastructure

Reforming markets will be one of the most potent tools under this Policy. The State Government's drive to produce top-quality and higher quantity of crops, livestock and fisheries products will be supported by Policy incentives and less interference in market operations. Efforts will be made to strengthen markets infrastructure and investments in market logistics.

- I. Government shall promote farmer producer organizations (FPOs) and development of export-oriented clusters with financial and technical support.
- ii. Kaduna State Chamber of Commerce, Industry, Mines and Agriculture (KADCCIMA) under the State Government shall facilitate the establishment of a private sector led Commodity Corporation”
- iii. Government shall also put in place a regulatory framework to establish and monitor standards of produce quality and enforce such standards with legal instruments
- iv. The State will strengthen market and produce regulatory agencies to enforce quality standards of agricultural product and to promote market operations.
- v. Sorting and grading including metrology shall be performed by the Commodity Corporation with standards set out and enforced by the Produce Inspection Board (PIB)
- vi. The commodity corporation shall set up markets at different commodity Centers in the State.

6.11. Finance and Administration

Agricultural development needs proper funding especially due to its key role as facilitator of economic development. The 2018 sectoral budgetary allocation of less than 1% to agriculture is grossly inadequate. The State will continue to explore aligning its budgetary provisions for the agriculture sector with the provisions of Maputo and Malabo Declarations and CAADP.

The State will:

- I. Allocate a minimum of 10% of its annual budgetary provisions to agricultural sector from 2021 for accelerated development.
- ii. Assist with providing resources for poor farmers and women groups to access low interest rate loans from financial institutions to scale up agricultural production.
- iii. Ensure the provision of growth enhancement schemes to assist resource poor farmers.
- iv. Promote Innovative financing would as an alternative to cash transfer.
- v. Strengthen agricultural credit schemes and make their services more accessible to farmers
- vi. Be Accountable, transparent and follow due process of the law in its financial and administrative transactions.
- vii. Ensure efficient allocation and use of public funding including support from partners.
- viii. Adhere and promote strict emphasis on anti-corruption measures

On administration:

- i. Government shall reduce bureaucratic bottle necks and time for acquiring land title documents to enable farmers use same as collateral security
- ii. Government shall ensure a virile and productive workforce in the agricultural sector and

- place emphasis on improving productivity of labor and data-driven performance measures.
- iii. Government shall optimize the relationships with various partners in development such as f ABU, KASU, IAR, NAPRI, NAERLS, SCA, and other institutions in the State for synergy.
 - iv. Government shall promptly release budgetary provisions for agricultural services to conform to the farming calendar of the State.
 - v. Government shall endeavor to provide an enabling environment for good agriculture governance
 - vi. Government shall create enabling environment for the implementation of secure transaction of movable collaterals & others including ware housing receipts systems.
 - vii. Government shall endeavor to fully implement provision of the agricultural Policy.

6.12. In-School Agricultural Programmes

- i. The State Government shall encourage the involvement of youths through an apprenticeship Programme for students of agriculture and related disciplines. The Programme will be opened to undergraduate and postgraduate students in agriculture, livestock production, animal health and fisheries. The beneficiary students will give back to society through involvements in multiple extension activities planned.
- ii. Government shall encourage the establishment of young farmers clubs in schools to stimulate youth interest in agriculture
- iii. Government shall introduce and enhance agriculture in school curricula and facilitate the establishment of school farms and gardens.

6.13. Agricultural Research and Innovation

Kaduna State has two Universities, 3 Colleges of Agriculture/Forestry, three agricultural research institutes and other training institutions to support its Policy agenda on agriculture. The State Government shall collaborate with these and all other relevant institutions/NGOs to leverage research innovations, capacity development and to prioritize investments in the agriculture sector.

The State will:

- I. Collaborate with relevant institutions such as IAR, NAPRI and NAERLS, on demand driven research, technology dissemination and personnel capacity development.
- ii. Define the Role of KADA shall be playing in making available technologies for the local needs; which includes, make demonstrations; impart training to extension workers and farmers; and adopt few villages as model villages for taking the refined technologies to the farmers.
- iii. Promote sll relevant agro-ecological agronomic innovations such as IPM, organic agriculture, conservation agriculture, intercropping, poly-cropping, etc. shall be promoted in the State. Government will maintain inventory of farmers' information in its database for development planning and Programme execution

6.14. Promotion of Commodity Value Chains and Agri-Business

- i. Farmers shall be integrated into modern value chains that can raise their incomes and also minimize the risks arising from middlemen and markets.
- ii. There shall be integration of post-harvest, marketing and processing infrastructures, adding value and quality to the raw produce of farmers.
- iii. Government shall provide infrastructural and training support building capacity of value chain actors.

6.15. Promotion of Digital and Precision Agriculture

- i. Use of ICT shall be promoted for timely delivery of cropping, weather and price information to farmers.
- ii. Information on markets leads to better price discovery and enables producers to capture a higher proportion of the marketable value.
- iii. Delivery of E-extension through digital means shall be promoted.

6.16. Institutional and Governance Reforms

- I. Various departments and agencies of the Government deliver different inputs and financial benefits citizens of the State. The agriculture governance philosophy will remain farmers centered serving both smallholders and commercial agricultural enterprises and coordinated by MOA.

The State will:

- i. Create a robust institutional mechanism for convergence. All actions at the area, block, cell/village level of agricultural operations will be converged so that there is a single point of contact for the farmer. This person will be supported by the technical departments required to ensure that farmers' needs are met.
- ii. Ensure reforms in agricultural marketing, warehousing, land-leasing and mechanization services.
- iii. Allocate substantial amounts of money for agriculture related activities, it is important to get the best outcomes for farmers in the State. With this in view, a monitoring mechanism will be put in place to improve the performance and the outcome of all schemes. A platform will be created to capture the performance of various agriculture and allied departments and to take timely corrective action if gaps are found.
- iv. Develop a robust performance metrics which would be defined at all the levels and technology system would be used to ensure the accountability of the officers to the same. High performing officials will be rewarded or acknowledged appropriately.
- vi. Strengthen the institutional credit structure through the establishment of data on agri-business institutions and operations as well as financial institutions.
- vi. Support with the revitalization of the farm extension network, to build the capacity of youths for setting up scientific agri-food system enterprises.
- vii. Establish systems to Improve post-harvest management and promote farmer producers' organizations and companies.
- vii. Setup efficient feedback mechanism to enable agriculture value chain actors in the State communicate suggestions, feelings and concern over any issue on agriculture to Government agencies.
- viii. Similarly, a grievance redress mechanism will be setup for the MOA, KADLRA and

KADA officials to resolve any establishment related queries instantly.

- ix. Conduct capacity building of all actors with Managerial, technical capacities at different levels of agricultural governance in the State will be built to ensure efficient delivery of Government schemes and services.

CHAPTER SEVEN

7.0. INSTITUTIONAL ARRANGEMENT, LEGAL FRAMEWORK AND FINANCING

7.1. Leadership Structure and Institutions

The administrative arrangement of the State Council on Agriculture comprises the Agricultural Services Management Committee, the Local Government Committee on Agriculture and the Ward Committee on Agriculture and will form the basis for planning and implementation of this Policy Document. In this regard, field offices of the MOA, KADA and KADLRA remain the focal point for the coordination of agricultural programmes at the community and Local Government levels. The Kaduna Agricultural Policy requires effective institutional arrangements to ensure result oriented programme development and implementation. The coordination of the State Policy on Agriculture shall be carried out by the two levels of Government.

The Government will

- i. Identify and mobilize resources.
- ii. Execute projects in a coordinated manner.
- iii. Ensure compliance to environmental, social protection and contributory health policies.
- iv. Comply with food safety, food and nutrition security and other policies domesticated by the State.
- v. Provide synergy and harmony within geographic boundaries and authority.

The organogram is as shown in Figure 7.1.

7.2. State Council on Agriculture (SCA)

A State Council on Agriculture shall be approved by the State Executive Council with membership drawn from Commissioners and Chief Executives of relevant MDAs, Local Government representatives, organized private sector and agriculture-related agencies.

The State Council on Agriculture shall be the highest policy making body on all matters concerning agriculture in the State. The Commissioner for Agriculture shall be the Chairman/Chairperson of the Council.

The SCA will work closely with the State government to implement all recommendations and initiatives highlighted within this framework to revamp the agriculture sector of Kaduna State.

The Government will

- I. Identify, analyze and ascertain the strategic issues in agricultural development in the State, and ensure that strategies and targets are in consonance with the Kaduna State Development Plan.
- ii. Identify efforts already in place for accelerating Agricultural Development in the State.
- iii. Review strategies and their impact on Farmers, Farming System, Wards, Local Government and State.
- iv. Access activities and new trajectories to be followed in dealing with agricultural development based on regular review of M&E reports and periodic survey.
- v. Coordinate and harmonize agriculture programmes in the State.
- vi. Ensure adequate resource mobilization and allocation to accelerate agricultural development.
- vii. The MOA will also serve as the secretariat of the SCA and shall work closely with the Local Government Secretariat, having regular fora for interactions.
- viii. Ensure that council meetings are held at least twice yearly.

7.3. Agricultural Services Management Committee (ASMC)

There shall be an Agricultural Service Management Committee (ASMC) at the State level. Membership of the ASMC shall comprise of the Permanent Secretary – MOA, Directors of all Departments in the MOA as well as Head of Parastatals supervised by the ministry.

The ASMC is the technical committee and will

- i. Serve as the State focal point for Agricultural Policy Programme Planning and Coordination.
- ii. Provide day-to-day support that will enhance the effectiveness of the SCA.
- iii. Serve as the focal point for the coordination and harmonization of all Agriculture related policies and Programmes being implemented by various Ministries, Departments and Agencies in the State consistent with the goals and objectives outlined in this Policy document.
- iv. Provide a forum for exchange of views and experiences among partners and all bodies implementing agricultural Programmes in the State and to foster and strengthen their respective roles.
- v. Coordinate and review on continuous basis, policies and Programmes with regard to their potential impact on agriculture in the State.
- vi. Ensure effective implementation of the different Policy thrusts and Programmes by putting in place effective machinery for M&E.
- vii. Sustain the on-going advocacies on issues of agricultural development.
- viii. Ensure adequate financial provisions and timely release of allocated funds in the State development plan and annual budget.
- ix. Liaise with local and international donor agencies, financial institutions, and the private sector, CBOs and NGOs in soliciting for funds to complement Government resources and efforts, and to ensure that development partners pay closer attention to incorporate agricultural considerations in their development strategies across all sectors in particular: Education, Health, Industry, Water Resources, Youth and Gender Based Programmes.
- x. Coordinate the analysis and dissemination of results of important studies on agriculture in the State.

7.4. Local Government Committee on Agriculture (LGCA)

Kaduna State Local Government Reform Law (2017) provides that Local Governments shall develop a culture of participatory governance, encourage, and create conditions for the local communities with equal opportunities for men and women to participate in the affairs of the Local Government in the preparation, implementation and review of development plans. All the 23 Local Government Councils in the State are being encouraged to develop capacity to plan, execute and monitor development efforts.

These structural reforms are intended to give local Government architecture a greater capacity for service delivery, promote development at the grassroots, and ensure Policy alignment with Kaduna State Development Plan 2016-2020.

The LGCA will

- I. Be responsible for implementing the Policy at the local government level.
- ii. Collaborate with the State Committee on Agriculture and Ward Committee on Agriculture in the implementation of programmes and projects.

7.5 Accountability

Government and stakeholders shall ensure that these Council and Committees are fully accountable for the resources and programme activities, for which they have responsibility, to guarantee the confidence of all stakeholders and partners involved, as well as to ensure correct and timely programme implementation.

7.6 Sector Coordination

Roles of Stakeholders shall include:

- I. Ministry of Agriculture
- ii. Responsible for overall coordination of the Policy.
- iii. Provide direction and feedback to Stakeholders on all aspects of the Policy.

2. Organized Private Sector

- i. Collaborate with Government and other stakeholders in policy articulation and facilitation of agricultural initiatives in the agricultural value chain.
- ii. Promote investment drives to bring private capital into agricultural development and agribusiness.
- iii. Participate in agriculture governance, bringing in innovation and Good Agricultural Practices (GAP).

3. Professional Bodies

- i. Support stakeholders with technical updates on Best Agricultural Practices
- ii. Collaborate in the capacity building of farmers including co-operative groups.
- iii. Participate in M&E and to advise Government on GAP.
- iv. Carry out policy advocacy to encourage policy implementation and consistency.

4. Development Partners

- i. Support stakeholders with funding for planned programmes and projects.
- ii. Provide technical support and advisories to stakeholders.
- iii. Build capacity and support innovation and agriculture infrastructure.
- iv. Participate in M&E and the development of databases for effective planning.

4. Farmer-Based Organizations (FBOs)

- i. Mobilize farmers and create awareness on opportunities in projects and programmes.
- ii. Advise Government and serve as a link between farmers and other stakeholders.
- iii. Mobilize funds in support of farmers related activities.
- iv. Collaborate in the capacity building of farmers.
- v. Collaborate with other stakeholders in M&E activities.
- vi. Network with other organizations for the improvement of Agricultural Practices.

5. Civil Society Organizations (CSOs)

- I. Support the capacity building of staff and farmers including behavior change communication.
- ii. Participate in Monitoring and Evaluation activities.

- iii. Provide advisories to stakeholders.
- iv. Create public awareness on agribusiness development.
- v. Mount advocacy for Good Agriculture Governance (GAG), for increased budgetary allocations.

7.7. Resource Mobilization

All stakeholders are encouraged to participate in mobilizing all resources towards the implementation of this policy. Adequate statutory budgetary allocation shall be provided by the State Government.

7.8. Legislation

In order to establish a sustainable framework in line with the objectives of this policy, critical and mandatory provisions of the document shall be legislated so as to ensure policy continuity and stability.

CHAPTER EIGHT

8.0 POLICY PLANNING, MONITORING AND EVALUATION

8.1. Project Planning

Project planning in this policy will involve agenda setting, formulation and implementation, monitoring and evaluation processes. Components of such plans consist of managing the human resources, costs and the budgeting elements of the project, communications plan, project risk plans and the quality targets for the project.

8.2. Monitoring and Evaluation Plan

The Monitoring and Evaluation (M&E) of Kaduna State Agriculture Policy performance is critical to the implementation of this policy. A monitoring and evaluation mechanism for regular reporting will contribute to evidence-based learning and improve the performance of the policy and subsequent periodic review.

Monitoring in this policy would be a continuous function using the systematic collection of data on specified indicators to provide management and stakeholders with information on on-going interventions and extent of progress, achievement of objectives and use of allocated funds. Monitoring of activities shall be done through routine collection, collation, analysis, interpretation, and dissemination of data, using standardized tools.

8.3. Data Management

The implementation of this Policy Document requires accurate data, coordination, robust monitoring and implementation mechanisms in order to provide the much-needed support such as, knowledge transfer, efficient channeling of subsidized inputs, extension services, funding and rural infrastructure. The State will put in place an Agricultural Data Management and Information System (ADMIS) in collaboration with all relevant agencies.

8.4 Results Framework

Result Framework for this Policy is defined in terms of inputs, output targets, outcome targets and impacts through appropriate Key Performance Indicators (KPI) as in the State's SIP for 2017-2019 (rolled over 2021-2025), as presented in Annex 1. These are expected to be achieved from 2021-2025 and will be used for monitoring and performance evaluation in the course of implementing the Agriculture Policy for the State.

8.5. Programme Logical Framework

In implementing the policy and subsequent strategies, implementers will be encouraged to design programme logic models - programme road maps highlighting how intervention is expected to work, the sequence of activities and how desired outcomes are achieved.

Monitoring and Evaluation will be done at three levels:

- i. Field and farming-community level, monitoring (routine) to improve service delivery.
- ii. Institutional, programme and project-based monitoring coverage, to strengthen agricultural systems.
- iii. Real time Monitoring and Evaluation Impact.

8.6. Policy Periodic Review

An efficient and constant feedback loop is necessary for smooth policy implementation and adjustments that are critical to realize policy objectives. A periodic review of policy implementation shall be undertaken to monitor and track progress towards meeting targets every three (3) years.

8.7. Action Plan and Implementing Agencies

In order to achieve the targets in the SIP (2021-2025), a schedule of action, approach, key agency and supporting agencies for each target is shown in Annex 2. With proper budgetary allocation, dedicated personnel, inter - agencies collaboration and joint stakeholders' participation, it is possible to achieve the vision of making agri-business the leading contributor to Kaduna State economy.

DOCUMENTS CONSULTED

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ANNEX 1

Summaries of Agriculture Sector's Objectives, Programmes, Outcome Deliverables, KPIs and Annual Targets (2021-2025)

Sector Objective	Programme	Outcome Deliverable	KPI of Outcome	Baseline (2015)	Annual Target				
					2021	2022	2023	2024	2025
Achieve increases in crop yields and ensure the wellbeing of subsistence farmers in Kaduna State	Kaduna Green Revolution Programme	Increased yield of major crops in metric tons per hectare (maize, Soybeans, sorghum, ginger, rice, and groundnut)	Maize Yield (mt/ha)	2.5	5.5	5.7	6.0	6.2	6.5
			Soybean Yield (mt/ha)	0.9	2.5	2.5	2.7	2.8	3.0
			Sorghum Yield (mt/ha)	2.5	3.0	3.0	3.2	3.5	3.5
			Ginger Yield (mt/ha)	3.84	10.0	10.0	10.2	10.5	12.5
			Rice Yield (mt/ha)	2.5	4.5	4.5	5.0	5.0	5.5
			Groundnut Yield (mt/ha)	0.7	2.5	2.5	2.5	2.7	3.0
			Acha Yield (mt/ha)	0.5	0.6	0.6	0.8	1.0	1.0
			Millet Yield (mt/ha)	1.5	2.0	2.0	2.0	2.2	2.2
			Number of Youths and Women that embrace good agricultural practices	50,000	80,000	120,000	150,000	150,000	200,000
			Proportion of Kaduna GDP from agriculture (%)	36.69	42.0	43.0	45.0	45.5	46.0
% of Farmers adopting new, tested and proven technology	10.0	25.0	30.0	32.0	35.0	37.0			
Number of weather station established and maintained	0	2	1	1	1	1			

Note - These targets are set subject global challenges such as climate change and regional challenges such as insecurities which may hinder attainment of the targets

ANNEX 1 (Contd.)

Summaries of Agriculture Sector's Objectives, Programmes, Outcome Deliverables, KPIs and Annual Targets (2021-2025)

Sector Objective	Programme	Outcome Deliverable	KPI of Outcome	Baseline (2015)	Annual Target				
					2021	2022	2023	2024	2025
Increase in crop production and animal storage	Good agricultural practices	GAP certification for all agricultural produce	Number of farm produce that obtain GAP certification	0	5	5	5	6	6
	Mechanization machinery value chain development	Functional engineering services available to farmers	Proportion of registered farmers that have access to functional engineering services (%)	10	15	15	17	20	20
	Livestock and product safety administration Programme	Increased production and yield of livestock	Livestock production growth rate in the State (%)	6.69	10	12	15	17	20
	Agricultural Support Programme	Increased support and encouragements for farmers	Proportion of registered farmers supported with finance and insurance subsidy (%)	0.5	1.0	1.0	2.0	2.5	2.5
Increase production of crops, livestock and fisheries	All year round livestock grazing Programme	Rehabilitation of State Grazing reserves	Complete Number of Grazing reserves rehabilitated	2	1	1	1	1	1
	Fisheries development Programme	Re-trace and demarcation of the State cattle Routes	Kilometre of Cattle routes re-traced and demarcated	500	500	550	550	600	600
	Community Bee keeping Training Programme	Increased production and yield of fisheries	Fisheries production growth rate in the State (%)	5	7	7	10	12	15
		Increased in the proportion of Bee keeping farmers in the State	Proportional increase in honey production in the State (%)	10	15	20	25	25	25

Note - These targets are set subject global challenges such as climate change and regional challenges such as insecurities which may hinder attainment of the targets

ANNEX 2

Action Plan and Implementing Agencies for Achieving Outcome Deliverables for Kaduna Agriculture Sector (2021-2025)

S/No.	Outcome Deliverables	Action	Approach	Lead Agency	Supporting Agencies
1	Increased yield of major crops in metric tons per hectare (maize, Soybeans, sorghum, ginger, rice, and groundnut)	<ul style="list-style-type: none"> Timely delivery of production inputs to farmers Ensuring GAPs along production activities Registration of women and youths agri-preneurs 	<ul style="list-style-type: none"> Agric. Production Survey Cooperative sourcing of inputs by farmers' groups Capacity building of farmers 	MOA	KDBS, KADA, IAR, NASC
2	Increased capacity and adoption of good agricultural practices among women and youths	<ul style="list-style-type: none"> Ensuring BMPs along the entire agricultural value chain and enhanced income to all actors 	<ul style="list-style-type: none"> Dissemination of improved agric. technologies Facilitating timely access to quality low-cost inputs 	KADA	MOA, NAERLS, NGOs, , CSDA
3	Increased productivity of agricultural produce	<ul style="list-style-type: none"> State-wide dissemination of proven and relevant agric. technologies and practices 	<ul style="list-style-type: none"> Increased extension visits and more farm broadcast on all agric. sub-sectors 	MOA	KADA, KADLRA, KDBS, KDPMC, MOHSSD,
4	Farmers have information and adopt proven agricultural technologies and practices	<ul style="list-style-type: none"> Adequate funds provision Selection of appropriate sites in the zones 	<ul style="list-style-type: none"> Capacity building of staff to manage the weather stations Improved connectivity for regular reporting to the headquarters 	KADA	NAERLS, NGOs, KSMC, MOLGA
5	Weather Station established and maintained in Kaduna and all the 4 agric. zones in the State	<ul style="list-style-type: none"> Competitiveness of all agric. produce in local and international markets 	<ul style="list-style-type: none"> Capacity building of value chain actors on traceability, record keeping and standard hygienic practices on all commodities 	MOA	NIMET, KADGIS, MOBIT
6	GAPs certification for all agricultural produce	<ul style="list-style-type: none"> Promote appropriate tractor density for the State 	<ul style="list-style-type: none"> Making more functional tractors available and facilitate more private sector participation in tractor hiring to farmers 	MOA	NAFDAC, KDPMC, KDMDMC, KADIPA
7	Functional engineering services available to farmers			MOA	MOPWI, NCAM,

ANNEX 2 (Contd.)

S/No.	Outcome Deliverables	Action	Approach	Lead Agency	Supporting Agencies
8	Increased production and yield of livestock	<ul style="list-style-type: none"> ● Establish livestock improvement Programmes for ruminants and poultry ● Improve livestock data collection 	<ul style="list-style-type: none"> ● Promote quality feeds for livestock and health care management ● Conduct livestock survey 	MOA	KADA, NAPRI, NLTC, KDBS, NGOs, CAAS, KEPA, KADLRA
9	Increased finance and insurance support to farmers	<ul style="list-style-type: none"> ● Monitor fund disbursement to agriculture sector ● Facilitate credit availability to Small-scale producers 	● Loan Statistics	MOA	MOF, KADIPA, KDPBC, KSIMB, Commercial/Micro-Finance Banks
10	Rehabilitation of State grazing reserves	<ul style="list-style-type: none"> ● Enhance productivity of the reserves ● Promote controlled grazing 	<ul style="list-style-type: none"> ● Conduct situation assessment of all the grazing reserve in the State ● Embark on productivity improvement 	MOA	KSFMP, KEPA, KADA
11	Re-trace and demarcation of the State cattle Routes	<ul style="list-style-type: none"> ● Establish defined cattle route to reduce farmer-herder conflicts 	● Assess situation of cattle routes in the State	MOA	KSFMP, MOENR, MOISHA, MORCD, KADGIS, KADLRA
12	Increased production and yield of fisheries	<ul style="list-style-type: none"> ● Promote fish culture and stocking of reservoirs in the State ● Improve fisheries data collection 	<ul style="list-style-type: none"> ● Increase awareness campaign on fish culture adoption ● Conduct fisheries data collection 	MOA	NIFFR, KSMC, KDBS, KADA, NAERLS, MOENR, MOBIT,
13	Increased in the proportion of Bee keeping farmers in the State	● Promote apiary practices in the State	● Conduct awareness campaign on improved technologies and practices in honey production	MOA	KSFMP, KSMC, FCFM, NAERLS, MOENR, MOBIT

ANNEX 3

KADUNA STATE AGRICULTURAL CALENDER FOR WET SEASON FARMING FOR SOME CROPS

(Agricultural Seasonal Calendar activities may be altered by the vagaries of weather and climate change)

1. MAIZE

S/No	ACTIVITY	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	Site Selection and Geo- Referencing												
2	Business Plan Preparation and Approval												
3	Variety Selection												
4	Input Sourcing and Delivery												
5	Field Preparation												
6	Sowing												
7	Fertilizer Application												
8	Weed Management												
9	Pest and Diseases Management												
10	Harvesting, Drying, Threshing and Storage												
11	Processing and Marketing												
12	Sales												

1. RICE

S/No	ACTIVITY	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	Site Selection and Geo- Referencing												
2	Business Plan and Approval												
3	Input Sourcing												
4	Nursery Activities												
5	Weed Management, Pre- Planting Herbicides prior to land preparation												
6	Planting, Transporting, Sowing												
7	Field Preparation												
8	Fertilizer Application												
9	Water Management												
10	Second Weeding/Supplementary Weeding												
11	Pest Management												
12	Bird Scaring												
13	Harvesting, Drying, Threshing and Storage												
14	Processing and Marketing												
15	Sales												

3. SORGHUM

S/No	ACTIVITY	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	Site Selection and Geo- Referencing												
2	Business Plan and Approval												
3	Input Sourcing												
4	Land Preparation												
5	Sowing												
6	Fertilizer Application												
7	Water Management												
8	Pest and Disease Management												
9	Harvesting and Threshing												
10	Processing and Storage												
11	Sales												

4. SORGHUM

S/No	ACTIVITY	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	Site Selection and Geo- Referencing												
2	Input Sourcing, Delivery, Variety Selection												
3	Field Preparation												
4	Sowing												
5	Weed Management												
6	Fertilizer Application												
7	Pest and Disease Management												
8	Harvesting												
9	Processing and Storage												
10	Sales/Marketing												

5. SORGHUM

S/No	ACTIVITY	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	Site Selection and Geo- Referencing												
2	Business Plan and Approval												
3	Input Sourcing, Delivery; Variety Selection												
4	Field Preparation												
5	Preparing Planting Material												
6	Sowing												
7	Mulching												
8	Weed Management												
9	Second Weeding/Supplementary Weeding												
10	Fertilizer Application												
11	Pest and Disease Monitoring and Control												
12	Harvesting												
13	Processing and Storage												
14	Sales/Marketing												