



Kaduna State Ginger Investment Policy and Strategy (GIPS) 2021



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FOREWORD



The Kaduna State Ginger Investment Policy and Strategy is a significant component of the State Government's commitment to make Kaduna State the agricultural hub of the nation, building on its competitive advantage in major crops, vast arable land, and other endowments. We seek to equip our farmers with world-class agricultural knowledge, thereby empowering them to help drive the economy of the State.

This Ginger Investment policy is expected to help increase ginger production through intensive productivity and to encourage small-scale farmers to realize economies of scale. It sets out how to address the provision of adequate and affordable quality planting materials, the adoption of appropriate crop production management practices, and access to affordable financial services and insurance schemes which can significantly boost agricultural inputs. This policy aligns with our developmental objective to improve the quality and quantity of ginger production in the State, leading to a better life for the farmers in the State, a thriving ginger economy, and a robust agricultural ecosystem.

In view of these, the Kaduna State Government has made significant attempts through this policy document to address the challenges faced by ginger farmers in the State, including access to land for cultivation, poor quality planting materials and seedlings, the high cost of, and lack of access to agricultural inputs, poor crop management practices, the limited and unplanned exploration of ginger potential in favorable regions, and the astronomical cost of equipment. This policy is poised to enable a profitable and inclusive agricultural sector, capable of helping to uplift the poor and vulnerable. To ensure that the policy deliverables are pursued in an integrated, inclusive, and sustainable manner that optimizes resource utilization and achieves high impact, it is the desire of the Kaduna State Government, as indicated in this policy, to enhance the provision of adequate and efficient support services that are critical for improved ginger production.

The main support services addressed are appropriate research and development, adequate and efficient extension services, availability and access to information and communications, affordable financial products, and comprehensive insurance cover. All these are expected to significantly boost ginger production in the State.

This policy requires investments by the Kaduna State Government in the provision of adequate infrastructure, facilitating access to the domestic, regional, and international markets, promoting processing and value addition, and adherence to quality standards. This requires developing the right partnerships and incentives for a robust market infrastructure, with a clear legal framework, and capacity for social sustainability. The policy also aims to include and prioritize disadvantaged groups, including women, youth, and persons with disabilities.

The Kaduna State Government is open and willing to work with all development partners in the agricultural sector, while appreciating the efforts of key actors and stakeholders that have contributed to the development and strengthening of the agricultural ecosystem in the State. This policy reflects the commitment of this Government to promoting equal opportunity and an enabling environment for its residents to thrive.

Malam Nasir Ahmad El-Rufa'i
Governor of Kaduna State

ABBREVIATIONS AND ACRONYMS

ASTA	American Standard
BoI	Bank of Industry
BoA	Bank of Agriculture
CBN	Central Bank of Nigeria
CBI	Centre for the Promotion of Imports from developing countries
CAADP	Comprehensive African Agriculture Development Programme
CAGR	Cumulative average Growth Rate
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Mitigation Plan
ESIA	Environmental and Social Assessment
EU	European Union
FAOSTAT	Food and Agricultural Organisation Statistics
FAQ	Fair Average Quality
FMARD	Federal Ministry of Agriculture and Rural Development
FOB	Free on Board
GAP	Good Agricultural Practice
GSSWG	Global Strategic Solution Working Group
ICC	International Code of Conduct
IAR	Institute for Agricultural Research
IPMP	Integrated Pest Management Plan
KASSU	Kaduna State University-
KADIPA	Kaduna Investment Promotion Agency
KMDMC	Kaduna Market Development and Management Company
NACC	Nigeria-American Chamber of Commerce
NEPAD	New Partnership for Africa's Development)
NEPC	Nigerian Export Promotion Council
NICOP	Nigeria Competitiveness Project
NIRSAL	Nigeria Incentive-Based Risk Sharing System
for Agricultural Landing	
RMRDC	Raw Material research and Development Council
UGI	Umudike Ginger I



SECTION 1

BACKGROUND AND SITUATIONAL ANALYSIS

INTRODUCTION

In 2019 Nigeria exports of ginger amounted to \$10.4million, which is by no means insignificant in a market of close to \$3billion. There is therefore evident space for the country to increase its exports by scaling up production so that farmers can tap into the \$3billion global ginger market. Nigeria has the potential to expand the ginger value chain in the medium to long-term if adequate investment strategy is adopted.

[Nigeria earned \\$10.4m from ginger export In 2019 \(mynigeria.com\)](http://mynigeria.com)

The GIPS is aimed at transforming the ginger industry space with the consciousness that ginger production in Kaduna State is one of the economic activities that could serve as a source of employment, revenue generation and poverty alleviation. Noteworthy on poverty alleviation, is the fact that Kaduna state government has embarked on a number of programmes aimed at increasing productivity and empowering ginger farmers, including the Root and Tuber production Expansion Programme (RTPEP). Evidently, in spite of the several interventions by the government and non-governmental organization (NGOs), ginger production is predominantly carried out by small scale operators who cultivated less than half a hectare per year. This will change as the Ginger Investment Policy and Strategy implementation will establish the principles of responsible investment and commercialization in the ginger value chain to the intent that significant amount of the \$3billion global ginger market will be attracted to the state.

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Current Investment Climate in Kaduna State

The Nasir El-Rufai administration has always prioritised improving the state's ease of doing business, initiating legislation including the Public Procurement Law, the Kaduna Metropolitan Transport Authority Bill. The administration also created an Ease of Doing Business Committee, uniting agencies like the Kaduna Geographic Information Service (KADGIS), the Kaduna State Urban Planning and Development Authority (KASUPDA), the Kaduna State Environmental Protection Authority, the Kaduna State Internal Revenue Service, the Ministry of Business Innovation and Technology, and the Kaduna Investment Promotion Agency (KADIPA). These efforts led to tangible results, with Kaduna recognised as the most-improved state in the World Bank's "Doing Business in Nigeria 2018" report.

Existing attractions in terms of the business environment from key government agencies are:

KADGIS, the land registry agency, has also been instrumental in achieving many of the ease of doing business targets. Through a combination of simplifying requirements and fees, and a large-scale digitisation of maps and records. The mile stones recorded are:

- I. Time to register property reduced by two months
- II. Cost of registration is reduced by a third.
- III. 13 days duration to perform all the necessary administrative measures, as opposed to 28 days in 2010.

KADIPA The creation of KADIPA as a one-stop investment centre has also resulted in a significant improvement to doing business. Since its establishment KADIPA has

directly facilitated the investment of more than 50 foreign and domestic companies. These were made possible because of:

- I. Simplified administrative procedures,
- II. Promotion, facilitation and coordination of investment through public-private partnerships, privatisation and commercialisation.
- III. Encouraging linkages between corporate investors and small and medium-sized entities for sustainable economic development.
- IV. KADIPA has worked closely with other key service delivery agencies to create a better business environment.

These innovation in governance has led to significant increase in the states IGR as well as the arrival of several international investors which include Olam Industries, Crown Flour Mills, Greenville Energy, Tomato Jos and others. It is expected that with the implementation of GIPS more investors will flock into the state to take advantage of the favourable investment climate present.

Background – History of Ginger Production in Kaduna State

Agriculture sector in Kaduna State is divided into four sub-activities: Crop Production, Livestock, Forestry and Fishing. Kaduna state's agricultural sector remains the largest source of revenue as it contributed 38% to the total GDP of the state in 2017 and 38.09% in 2018. 77.5% of the 9.02 million people living in the state are active farmers, while Crop production remains the major driver of the sector in terms of GDP contribution. These crops include maize, soybeans, cowpea, and groundnut cassava, rice, yam and ginger. Crops such as maize, ginger, sesame, contributed contribute 14.2% to the state GDP in 2019-2020¹.

Ginger has been grown in in the Southern part of Kaduna State since about 1927, and has steadily increased in importance as a valuable commodity. Being one of the cash crops grown in the country, ginger has a great foreign exchange potential. The very first shipment of ginger (5 tons) for export went out from a village in Southern Kaduna called Gantan in 1928/29. So, by 1966 Nigeria was recorded to have become the second largest World exporter of ginger after China. Prior to the creation of present states, ginger had contributed about 19% of the total GDP of Northern Nigeria.

Thereafter, exports fell due to the Nigerian civil war. But, more than this, export trade of ginger was adduced to have declined due to lack of attention given to the crop by the Nigerian government as a result of the surplus trade receipts from the oil boom and to the unattractive prices it got in the international market (Meadows, 1988). Thus, Nigeria's position in the export trade was taken by better placed competitors like India, China and recently the like of Peru, Ethiopia and our next-door neighbours Cameroon (Banake E. S., 2017). Two major varieties of ginger are grown in Kaduna state, namely yellow ginger (which is more widely grown in Kaduna state), locally known as Tafin Giwa, and black ginger, locally known as Yatsun Biri

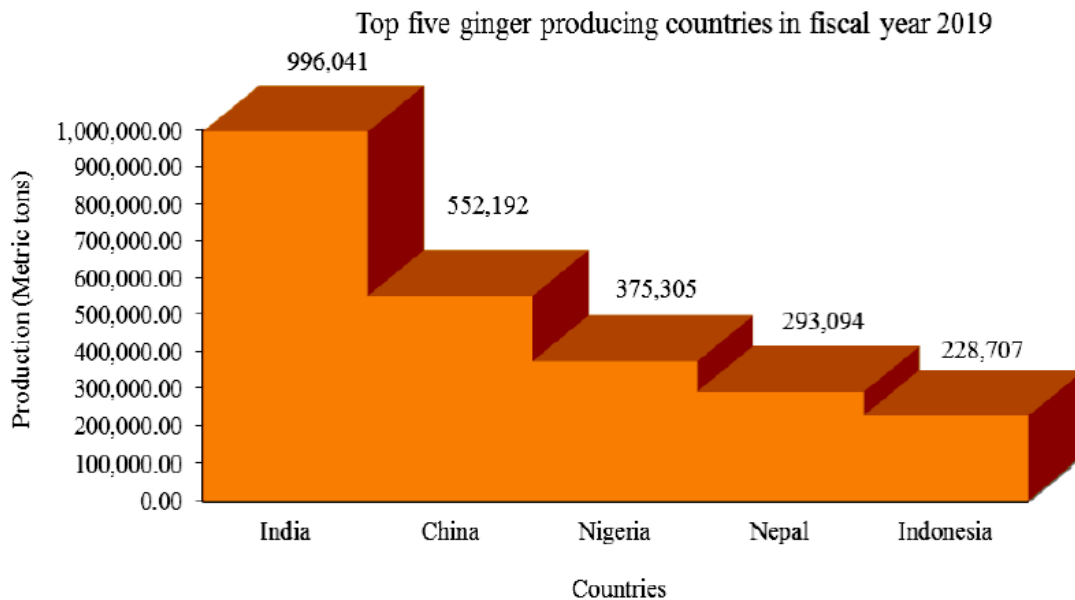
Nigeria and the Global Ginger Market

According to FAOSTAT, Nigeria is the third-largest producer of ginger in the world, with a production average of more than 300,000 tonnes during the five-year period

¹ THE REPORT Kaduna 2020 - Kaduna Investment Promotion Agency <https://kadipa.kdsg.gov.ng> › pdfs ›

2014-2018. Its global market share is about 11 per cent, trailing only India (35%) and China (18%).

Figure 1: Top Five Ginger Producing Countries in fiscal year 2019



Based on estimated global production shares, India (35%), China (18%) and Nigeria (11.5%) are the top three ginger producing countries in the world. In terms of regional production shares, Asia (84%) and Africa (15.2%) dominate global ginger production. According to the Nigerian Export Promotion Council, Nigeria's share in total global production is projected to keep growing at 6% per annum.

Top five ginger producing countries in 2019 (Source: FAO, as cited in NationMaster, 2020)

Data from OEC shows that between 2017 and 2018 global export of ginger grew by 11.5 per cent, from USD 845 million to USD 942 million. Trade in ginger represent 0.0051% of total world trade. In terms of export, the top ginger exporters in the world in 2018 were China (USD 525 million or 55%), Thailand (USD 83.8 million or 8.9%), Netherlands (USD 72.8 million or 7.7%), Peru (USD 46.6 million or 4.95%), and Nigeria (USD 37.4 million or 3.98%).

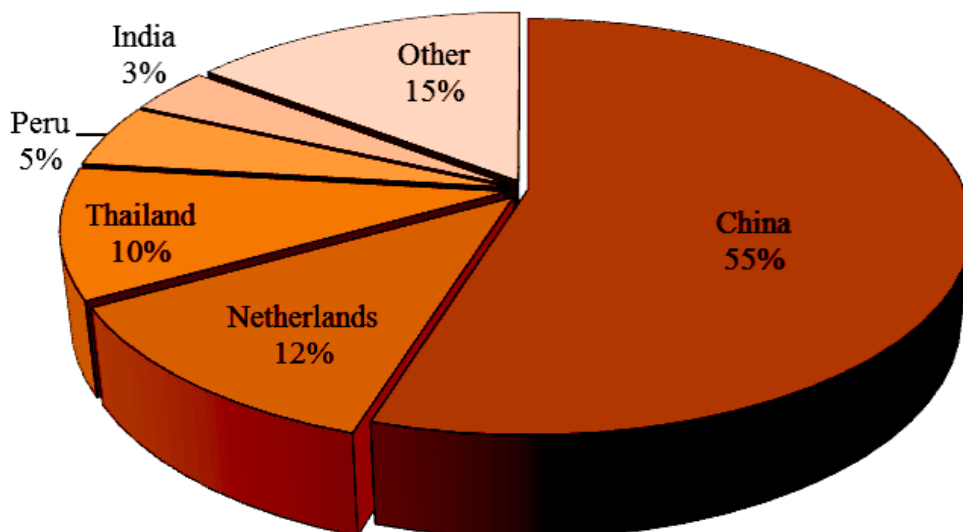


Figure 2 : Top five exporters of ginger in the world in fiscal year 2019

Source: <https://doi.org/10.26832/24566632.2021.0602012>

United States, Japan, Netherlands, Pakistan and Bangladesh are the top five importers of ginger around the world with the value of \$128,164,452.33, \$100,758,986.17, \$83,854,092.93, \$81,509,225.36, and \$71,324,637.58 respectively in 2019.

(<https://www.nationmaster.com/nmx/ranking/import-of-ginger>)

The global ginger market grew at a Compound Annual Growth Rate (CAGR) of around 6% during 2015-2020. Looking forward, the market is expected to exhibit moderate growth during 2021-2026, keeping in mind the uncertainties of COVID-19. The market is currently being driven by population growth, changing demographics, increasing health consciousness, and busy lifestyles across the globe.

(<https://www.imarcgroup.com/ginger-market>)

Importance of Ginger in the Economy of Kaduna State and Nigeria

Kaduna State ranks first in ginger production in Nigeria, and Nigeria ranks first in terms of area under ginger cultivation in the world. However, its contribution to world ginger trade is the fifth largest. Northern Nigeria is the largest user of ginger in the country. In Nigeria, ginger is mainly cultivated in Kachia, Jaba, Kagarko and Jema'a local government areas in Kaduna State. Yields of Yellow ginger also known as tafin giwa is more common in the market due to its high yielding capacity and pungency. The Yellow ginger yields 15 tons per hectare while Black ginger (yatsun biri) yields approximately 11-12 tons per hectare on the farmer's field.

The ginger value chain in Kaduna state is buyer-driven and the governance structure follows a market-style pattern. Ginger at the moment has an increasing consumption rating both at the domestic and international market. Current export prices per ton for grade A dried split ginger hovers between \$2200 - \$2600, while the prices of Fresh ginger is between \$4000 - \$5000 FOB.

On the domestic scene, Ginger is rated the fifth most important exported agro-commodity in value according to data from National Bureau of Statistics in 2021, contributing about 3% to the total agro-commodity exports in the first half (Q1 & Q2) of 2021. Every year, Nigeria averages a production volume of over 400,000 Metric tonnes of Ginger. Our Production in 2018 and 2019 was 368,019 and 375,305 tonnes, respectively. [Why Nigeria's ginger output is low | Dailytrust](#)

Industrial Uses of Ginger and its Potentials for the State

Nigerian ginger has the highest levels of spice among various ginger varieties across the world. Recent trends have indicated Nigeria's ginger boom in exports, especially to India.

Ginger Oleoresin is obtained by the solvent extraction of ground-dried rhizomes of ginger. The product has the characteristic refreshing aroma of ginger. When evaluated in dilution, it has a pungent, biting sensation. It is a free-flowing, homogeneous, dark brown liquid. Ginger oleoresin is an important secondary raw material in the pharmaceutical, food and beverage industries.

India which is the largest producer of ginger oleoresin exported 253,880kg quantity of Ginger Oleoresin in 2018, worth 7.63 USD Million. The top countries which imported Ginger Oleoresin from India are USA (1.24 USD Million), United Kingdom (0.67 USD Million), South Africa (0.56 USD Million). India imported Ginger Oleoresin worth 0.57 USD Million in 2018, majorly from countries such as Sri Lanka (0.27 USD Million), USA (0.05 USD Million), Japan (0.03 USD Million). There is huge demand for secondary ginger products in the international market.

This is another major product that is produced from ginger that has the capacity to attract millions of dollars in revenue to the farmers, processing companies and the state. It is heartwarming to know that recently the state divested its stake in the Kachia Ginger Processing Company whose major plant was established to produce ginger oleoresin.

Error! Hyperlink reference not valid.The global ginger processing market size was valued at nearly \$ 2.5 billion in 2020, according to Expert Market Research, one of the foremost global market research and business intelligence companies. The industry is further expected to grow at a compound annual growth rate (CAGR) of 6.4 per cent over the forecast period of 2021-2026 to attain a value of over \$ 4 billion by 2026. The following companies are directly involved in the use of ginger for the production of their finished products;

- I. **Olam Nigeria in Kaduna.** Ginger is an integral part of Olam's spices and vegetable ingredient development initiative floated to deal directly with farmers and local, as well as global market.
- II. **Belphins Nigeria Ltd, Kafanchan,** in Kaduna State, the company with the capacity to produce ginger oleoresin in the country;
- III. **Tiger Foods Ltd, Onitsha,** Anambra State, is identified as a major player in the processing of other ginger value-added products
- IV. **Bido Commercials, Kwoi,** produces ginger tea, ginger drink and ginger powder.

- V. **Rite Foods Limited Nigeria**, uses ginger in the production of its leading beverage BIGI Ginger Lemon drink.
- VI. **The La Casera Company (TLCC)** has bolstered its **Bold soft drinks** brand with the addition of three new flavours – Orange, Tropical and Ginger.

Major Challenges of the Ginger Value Chain in Kaduna State and Nigeria

The Nigerian ginger sector has been plagued with serious constraints over the past years, such as:

1. Low yields – This is due to:
 - a) ancient agronomic practices: using manual labour to plant, harvest, and process the ginger.
 - b) lack of improved cultivars



2. Rainfall abnormality occasioned by inadequate rainfall amount
3. High post-harvest losses, a lack of technical know-how on the use of modern processing equipment to improve product quality.

4. Price fluctuations, especially great rapid fluctuation with high volatility within a short time frame.
5. Seasonal variations – adequate supply at harvest and limited supply during the planting season. Seasonal variation in prices indicates that if farmer hold on to their products for three months or so, they will receive much higher prices during the off-season.
6. Market glut: excess of supply of ginger against demand for it; especially, when the price of ginger rises, and farmers are enticed to increase ginger production in the subsequent growing season.
7. Effect of intermediaries, commission agents; the price varies from channel to channel according to the number of intermediaries.
8. Relatively small domestic consumption.
9. Lack of farmers' direct access to the international market.
10. Poor organisation and an ineffective enabling institutional environment: the ginger market lacks sufficient government intervention for price regulations, majority of the farmers are not part of any association.
11. Lack of credit facilities: ginger is a highly capital-intensive crop; nevertheless, it is also a crop that produces one of the biggest yields. Farmers cultivate smaller "hectares" (0.3 – 0.5 ha) due to the unavailability of funds.
12. Poor Quality of Produce: More than 90% of the ginger produced in the state is sun-dried and lacks the effect of machine processing which helps to add value to the cleanliness and quality of the finished dried ginger.
13. Lack of fair and clear agreements: Due to poor education and lack of business skills, smallholder producers in Nigeria often do not insist on establishing formal agreements with their local buyers, making them prone to exploitation by traders or middlemen.
14. Insufficient income and income insecurity: Price fluctuations of nearly 40% in recent years have made it very difficult for farmers to earn a decent income. Because ginger can be replanted and harvested again the following year, some producers choose to replant old rhizomes, hoping for a better price the following season.
15. Weak market infrastructure: The market architecture of the ginger value chain is not well structured or organised, and as a result, brokers (middlemen or traders) easily emerge as dominant actors. These brokers often have no licence and as the market is an informal one, they often do not pay taxes to the local authority and they are not held accountable.

Opportunities for the Development of Ginger Value Chain in Kaduna State

The potential for Nigerian ginger for further growth in exports is huge with the implementation of GIPS.

According to the foreign trade report for Q1 2021, released by the National Bureau of Statistics (NBS), Nigeria's agricultural export stood at ₦127.2 billion in the first three months (January – March) of 2021. This represents a 128% increase compared to

₦55.8 billion recorded in the previous quarter (Q4 2020). Ginger stands fifth on the list with an export value of ₦5.57 billion for the review period. Therefore, with the implementation of GIPS, ginger will be among the first three Nigeria’s agricultural export commodity in a few years to come.

Top 10 Nigeria Agricultural Exports - Q1 2021 (Billions NGN)

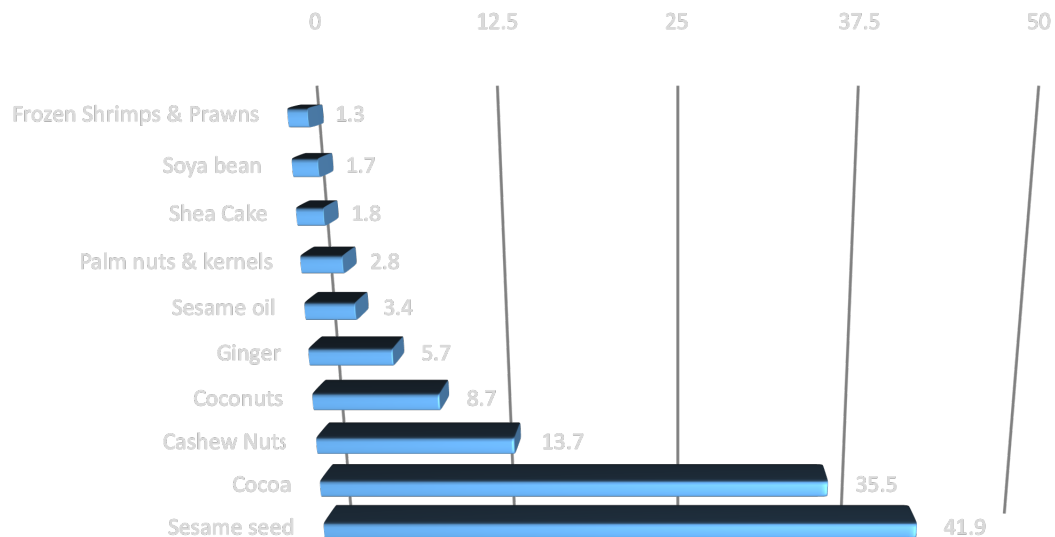


Figure 3: Top 10 Nigeria Agricultural Exports – Q1 2021

(<https://nairametrics.com/2021/06/18/sesamum-seed-cocoa-cashew-nuts-top-nigerias-agricultural-exports-in-q1-2021/>)

Top 10 Nigeria Agricultural Exports - Q2 2021 (Billions NGN)

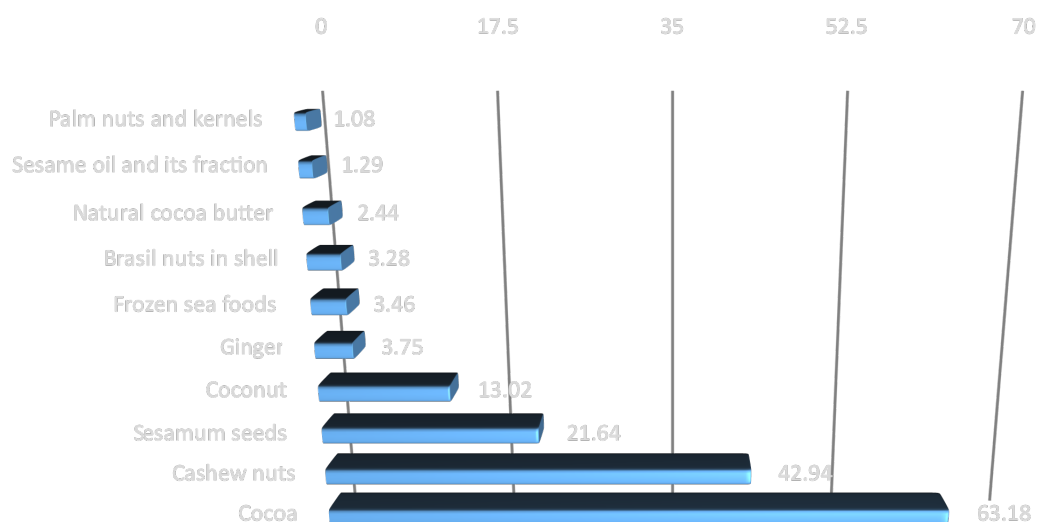


Figure 4: Top 10 Nigeria Agricultural Exports – Q2 2021

While in the Q2 2021 report, exported agro-food items recorded a 30% increase when compared to the previous quarter (Q1 2021) at ₦165.27 billion, Ginger still fifth position, recorded an export value of ₦3.75 billion.

<https://nairametrics.com/2021/09/23/nigerias-agric-export-surges-to-highest-on-record-here-are-the-top-items/>

According to local ginger buyers FAO grade dried split ginger is priced at approximately USD 1.45/kg (NGN600) while the more premium ASTA (American Standard) ginger is priced between USD 1.85/kg (NGN760) and USD 2.00/kg (NGN822). The general rule of thumb is that the higher the quality of ginger maintained, the greater the premium you will receive in the market. According to Nigerian ginger associations, the maximum price of Nigerian dried split ginger per tonne on the international market is much lower than that of Chinese and Indian dried split ginger owing to the fact that Nigerian ginger does not go through the modern processing methods and processes used in preparing the Chinese and Indian Ginger for the international market. In comparison, Chinese dried split ginger trades in the international market as high as USD 7.00/kg, Indian as high as USD 6.00/kg and Nigerian as high as USD 3.50/kg.

Ginger is also one of the supported commodities in Central Bank of Nigeria (CBN)'s Anchor Borrower Program. Other commercial banks and financial institutions, such as Bank of Industry (BoI), NIRSAL and Bank of Agriculture (BoA), are also involved in providing loans to ginger farmers and processors in Nigeria. The Nigeria-American Chamber of Commerce (NACC) is working with partners to promote export in some export commodities value chains including ginger. Also, a new engagement between Nigeria and the Italian Trade Agency, ITA, a governmental agency, is creating more export opportunities for Nigeria's agriculture products to Europe ITA, which supports business development, partnerships and collaborations between Italian companies and their local counterparts, has launched the first E-Lab Innova in Nigeria in collaboration with the Nigerian Export Promotion Council (NEPC) alongside other Italian partners, such as MACFRUT, a leading exhibition for the agribusiness industry.

[Nigeria Moves To Boost Ginger Export As Revenue Crosses \\$42m \(leadership.ng\)](#)

Although ginger currently sits at the fifth position of Nigeria's Agricultural exports, it has the potential to compete with the likes of Cocoa and Sesame seed which are the top two agricultural exports. Kaduna State which is the home of ginger still has vast arable virgin lands in the ginger producing areas of Southern Kaduna which can be effectively cultivated for large scale ginger production. Also, as an export crop ginger has the potential to boost Kaduna's internally generated revenue if properly harnessed. As at today the government of Kaduna State does not benefit maximally from the local trade of ginger as most of the transactions that take place on the local market days and other days are not captured in the State's tax net. However, with the proper implementation of the GIPS the state could generate up to N1.5billion to N3billion annually from taxes generated via ginger sales. For the Kaduna State, which is the largest producer of ginger in Africa, this is an opportunity to turn this wonder cash crop into a major revenue base for the state as well as a key player in achieving an improved livelihood of farmers, economic empowerment, poverty reduction for several key players within the value chain in the state.

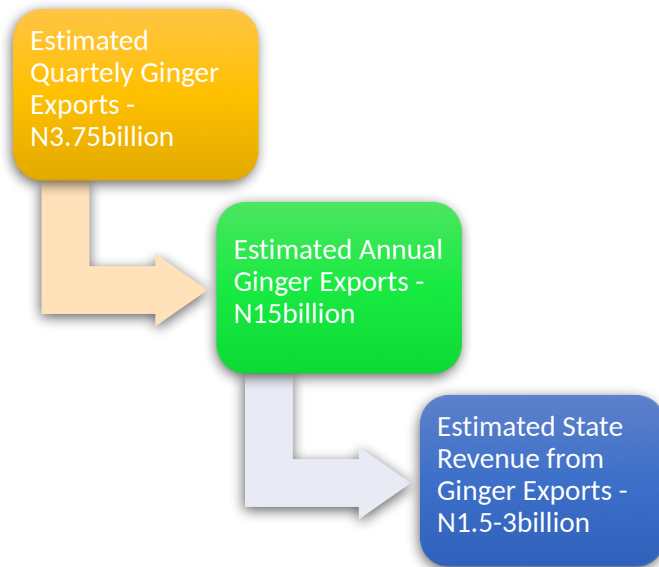


Figure 5: Estimated Tax income for Kaduna State via Ginger Exports

A successful implementation of the Kaduna Ginger Investment Policy and Strategy will lead to the following:

1. Increased revenue generation by the state government (an additional N1.5billion – N3billion could be added to the coffers of the state annually)
2. New technology adaptation by smallholder farmers; the introduction of modern farming and processing equipment will help boost yield and scale as well as improve quality of the semi-finished and finished ginger coming from Kaduna State.
3. Smallholder farmers are able cultivate large sizes of land and scale up of farm operations;
4. Smallholder farmers are motivated by economies of scale—the economic advantage of producing larger numbers of products;
5. Facilitation of smallholder market participation;
6. Household welfare and livelihood improvement; as the prices of ginger improves through the use of modern processing equipment for the processing of ginger, farmers will be able to see increased income from farming ginger which will in turn add value to their means of livelihood.
7. Promote rural development; the influx of ginger investors into these communities will catalyse rise in the development of hotel accommodations, warehouses, micro and macro industries, haulage and logistics services, banking services, and other ancillary services needed to support the budding value chain.
8. Improvement in infrastructural development in the community; for farmers and investors to easily access farm locations and move ginger products to the markets, aggregation centres and processing zones, infrastructural interventions will need to take place which will add value to the standard of living at the rural and community levels.
9. Creation direct and indirect employment opportunities;

10. Attract increase of foreign exchange to the state;
11. Improvement in the states' economic outlook

Key Drivers of Change for the Kaduna Ginger Industry

If Kaduna State is going to play a major role in the local, African and international ginger market, there is a need for a radical shift in perspectives and actions in ensuring a quick revolution of the industry. Ginger alone if properly harnessed has the potential of generating up to 30% of the states IGR in the next ten years. Below are some key drivers of change in the ginger industry.



Figure 6: Key Drivers of Change for the Kaduna Ginger Industry

Justification for Kaduna Ginger Investment Policy and Strategy

The ginger sector is fragmented, not well organized and relies on traditional and outdated production methods. The development of the Kaduna State Ginger Investment Policy and Strategy comes against the background that the sector has been operating without a coherent state ginger policy and investment strategies for the growth of the sector.

Ginger is one the most widely grown crops by farming communities in the Southern Kaduna region. Indeed, it is the main cash crop that most small holder farmers in the region are willing and deeply involved in cultivating due to high profits. This made some farmers in the area to devote all their farmlands to ginger production.

KADIPA estimates that further investments in ginger production and processing could lead to an additional creation of 5000 direct and indirect jobs. A large proportion of farmers in the southern part of the state are producing ginger, with land and labour widely available. However, the segment requires further capital investment in improved varieties, mechanised farming, micro and macro processing plants, packaging, global marketing And exports

Therefore, a sustainability model such as this Ginger Investment Policy and Strategy will create market linkages across the value chain and product value addition; improve the trade competencies of SMEs and the quality of their ginger product; strengthen associations to enable them deliver support services, provide access to finance or subsidies and improved GAP capabilities. In this respect, the critical factors necessitating the development of the policy are as follows:

- I. Dynamics in the policy environment at the State, national and international levels have significant bearing on the ginger sector. There is need for a policy framework to guide the ginger sector's operations for increased commercialisation and regional economic growth
- II. The strong infrastructure linkages between the ginger value chain sector, other agricultural and non-agricultural sectors and the implications for Kaduna state economic growth and development. Based on the realization of such critical linkages, there have been calls for clear and comprehensive policy guidance for the ginger sector so that it ensures continued positive contribution of the sector while other sectors continue to grow;
- III. To provide a basis for the development of ginger marketing and industry specific policies and legal frameworks. In the process, the policy aims at promoting marketing and industry linkages which have failed to take place in the absence of a Ginger investment Strategy and Policy;
- IV. To provide an outline of institutional linkages amongst various stakeholders (public or private) which have a significant bearing on the ginger sector. It is recognized that institutional linkages are dynamic with emphasis on private sector driven policy mechanism.

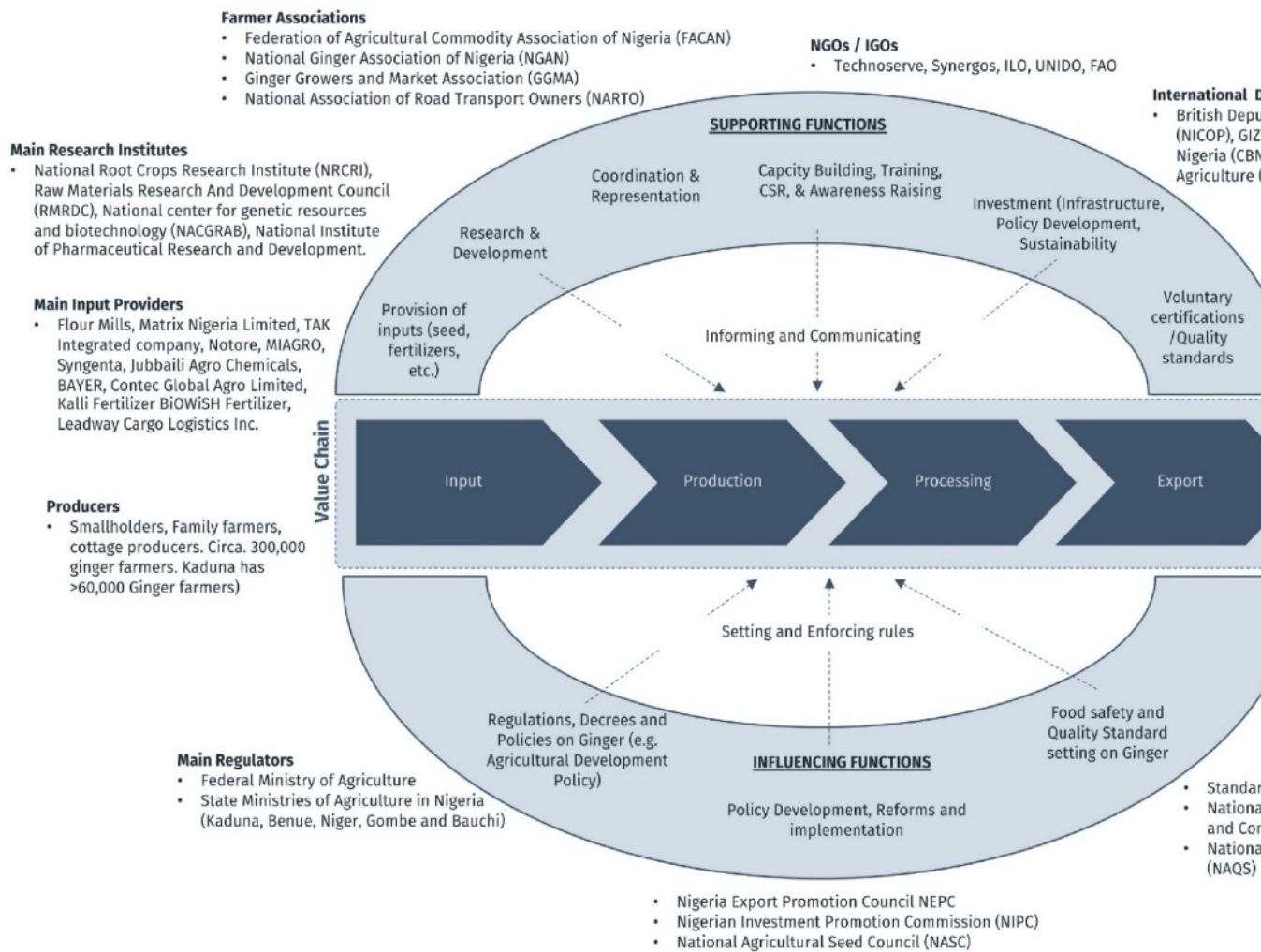
Objectives of the Kaduna State Ginger Investment Policy and Strategy

The broad objectives of this policy is to attract investments and develop broad based strategies with the private sector in order to improve livelihood of the people and contribute to economic development in the state.

The specific policy objectives towards the broad objective are to:

- I. Facilitate the role of ginger to become the leading source of foreign exchange for farmers, local investors and the state government;
- II. Create an enabling environment for ginger to become a major tax earner for the state;
- III. Facilitate private sector driven ginger industrial zones and hubs;
- IV. Facilitate the creation of a conducive and supportive policy environment for effective commercialization of the ginger sector throughout all stages of the value chain;
- V. Enhance private sector support services like finances, insurance and technical advisory services;
- VI. Promote seamless increased export of ginger products;
- VII. Develop and improve infrastructure to support the ginger industry particularly in major production areas.
- VIII. Establish, strengthen and entrench institutional, legal and regulatory framework in the ginger industry.
- IX. Provide clear strategic policy direction to all stakeholders involved in the ginger sector issues along the value chain stages.
- X. Provide a guide for willing local and international investors to take advantage of the vast ginger producing capabilities of the State and invest in farmers support, processing, packaging and export that meets international standards.
- XI. Provide a framework that will guide activities across the value chain especially support farmers against various market forces working against their interest in pricing, purchase and exports.
- XII. Improve the livelihood of farmers and other local stakeholders involved in the ginger value chain through economic empowerment.

Existing Structure of the Ginger Value Chain in Kaduna State



and Nigeria

Figure 7: Existing Structure of Ginger Value Chain

Source: Value Chain Analysis Nigeria (Ginger) , CBI 2020

The farmer-trader relationship within the industry is dynamic and changes every season. Prices are generally determined according to which actor has more bargaining power. While the farmer sometimes can delay harvest to get a favourable price, the trader still leverage in determining the price because of his accessibility to the international market.

There are mainly three different tracks or “flows” of how the products are distributed in the international market.

1. Farmers > Processors > Exporters
2. Farmers > Wholesaler/Town Merchant > Processors > Exporters
3. Farmers > Trader/Cooperative > Wholesale Market > Processors > Exporters

The price varies from channel to channel according to the number of intermediaries.



Figure 8 : Distribution channels of fresh and dried ginger



SECTION 2

PROPOSED POLICY INTERVENTIONS

PRODUCTION

In line with its vision to make Kaduna State the agricultural hub of the Nation and its mission to adequately equip Kaduna state citizens with best-in-class agricultural knowledge in a bid to empower them to power the economy of the State, this policy focus will be to increase ginger production through intensive productivity, and encouraging small-scale farmers to realise economies of scale. Other issues of emphasis in production include providing adequate and affordable quality planting material; adopting appropriate crop production management practices; access to affordable financial services and insurance schemes; providing agricultural inputs.

Production Land

The areas of land cultivated by majority of ginger farmers are small. In 2016, ginger farmers cultivated an average of 0.25 hectares. Nowadays, the average farm size is between 0.5 and 1.0 hectare being undertaken by smallholder farmers who do not take ginger farming as a serious business and use old traditional production techniques. Ginger can be cultivated on any available land except stony and water logged or marshy land. Flat or gently sloping farmlands are the most prepared site for ginger cultivation.

CHALLENGE

- I. Owing to rapid population growth, Ginger producing areas of Southern Kaduna is experiencing rapid inter-generational sub-division of land holdings for farming. This leads to declining per capita arable land holdings which expose rural farmers to low productivity.
- II. Uneconomic land parcels for ginger production due to continued land fragmentation as a result of human settlement and urbanisation.
- III. Declining soil fertility and degradation due to poor management.
- IV. Low adoption of appropriate technologies to exploit land potential in the high and medium-potential areas.

PROPOSED POLICY INTERVENTIONS

- I. In line with Government's Agricultural Transformation Agenda, there will be increased access to land and implementation of the Land Use Act to enable easier access for investors.
- II. Review and strengthen guidelines on land use and management measures that will balance and regulate competing land use for various activities such as human settlements, infrastructure developments and environmental conservation.
- III. Provide guidelines and strategies for the sustainable utilization of the land resource base in the ginger production zones in Kaduna state;
- IV. Strengthen coordination amongst ginger value chain stakeholders involved in land resource management issues.
- V. KADGIS and KADIPA will need to play a key role in allocation lands to investors seeking to setup processing centres for the processing of ginger locally within the state.

Planting Material

The key stages in the ginger value chain are input supply, production, processing, marketing, and consumption. The producers source their inputs locally. As far as Nigeria is concerned, we have two major varieties – the yellow ginger (Umudike ginger I, also called UG 1/tafin giwa) and the black ginger (Umudike ginger II, also called UG 11/yatsun biri). The major variety of ginger grown in the Kaduna State is the UG1 type.

Adequate supply and access to high-quality ginger bud for organic and conventional production systems are essential if the ginger industry is to develop more rapidly. Access to ginger seed for onward planting could be through self-produce; gift from relations or neighbours; and purchase from reputable ginger farmers. The perishable nature of ginger, made its seed storage very delicate, as the storing period at times reached a minimum of 4 months and a maximum of 6 months. In managing this situation, ginger farmers in Southern Kaduna uses four main storing devices to store impending ginger seeds. These are: open ventilated shade; pit burial device; leaving the ginger tubers un-harvested in the field, until the next growing season, locally known as Suna, and clay pot storage. Among these four storing devices, it is maintained that open ventilated shade device is the most widely used by ginger farmers in the study area.

But ginger transplanting technique has been found profitable, though not conventional. The advantages of this technology are production of healthy planting materials and reduction in seed rhizome quantity and eventually reduced cost on seeds and could be adopted for ginger seed production.

CHALLENGES

- I. Lack of organised standard ginger seed storage facilities.
- II. Lack of synergy; and promotion of unproven storage and seed selection technologies.
- III. Inadequate capacity to undertake ginger seed quality control services.
- IV. Inadequate financial, human and physical resources to research on and develop varieties.
- V. Unaffordable and inaccessible high-quality planting material by smallholder farmers.
- VI. Inadequate enforcement of certification of planting material has led to poor quality seedlings.

PROPOSED POLICY INTERVENTIONS

- I. Activate its liberalised seed policy in the ginger sector to enable the entrance of more private actors.
- II. Initiate seed legislation and policy to develop seed production technology, access to seed information, sale of seed, registration of growers, and verification of seed sources, and any other emerging issues in the industry.
- III. Promote a competitive ginger seed industry while ensuring that only varieties that are approved for release and notified in the variety list are sold to farmers.
- IV. Establish and maintain sufficient number of well-equipped ginger seed testing laboratories in the Ginger Industrial Zones (GIZs) in Kaduna State.
- V. Regularly develop and update quality ginger seed and specify minimum standards to be adhered to by all stakeholders.

- VI. The private sector will be provided with incentives to be involved in ginger seed multiplication through ginger seed nursery operation to enhance ginger seed transplanting technique
- VII. Guarantee Ginger farmer's Cooperative Societies to get credit facilities for quality ginger seeds.
- VIII. Design MOU between off-takers and Ginger farmer's Cooperative Societies in the provision of planting material
- IX. Partnership between the state government, and various research institutions in the country to develop new ginger varieties with improved yield.

Agricultural Inputs

The major inputs in the ginger industry are seed, fertilizer and pesticides. Other requirements include farm structures and equipment. The poor quality of inputs attributed to counterfeiting and adulteration and their high cost are a hindrance to faster development of the sub-sector. Inputs are distributed through a wide range of stockists, merchants and cooperatives throughout the state. However, most of the input dealers are not trained to offer quality advisory services to farmers.

Despite the positive impact on the environment and health, little has been done to promote technologies such as organic farming that foster use of farm-based inputs. Organic manures in ginger production in all aspects of growth and yield parameters is efficient and when used, will minimize total reliance on mineral fertilizers which are not only too costly for poor resource farmers to acquire, but are associated with problems relating to soil acidity, nutrient imbalance, inadequate supply of macro and micro nutrients and ineffectiveness due to the blanket method of application.

Availability of fertilizer, both organic and inorganic, is a major need of ginger farmers in the Southern Kaduna region, but surprisingly, it is not always been met with ease. The ginger industry largely depends on local and imported fertiliser, pesticides and herbicides.

CHALLENGES

- I. Unevenly distributed outlets for farm inputs.
- II. High cost of agricultural inputs.
- III. Incidences of counterfeiting and adulteration farm input.
- IV. Inadequate farmers' knowledge of the technical aspects of the different farm inputs.
- V. limited availability of credit,
- VI. Cumbersome Procurement modalities and transportation issues.

PROPOSED POLICY INTERVENTIONS

- I. Government will review and reformulate the agro input legislation and regulations governing formulation, procurement and distribution farm inputs.
- II. Eliminate government distribution of farm input and replace with private sector distribution.
- III. Move away from a flat fertilizer price subsidy to targeted support to small holder ginger farmers' cooperative societies.
- IV. Development of the agro-input market through Public Private Partnership strategy.
- V. Building the capacity of the different cadres of the private sector involved in agro-input dealers and the middle scale private traders.
- VI. Enhance skills and knowledge base of the public and private technical staff and ginger farmers in the use of organic and inorganic fertilizer.
- VII. Scale up public investment in road and transport infrastructure and access routes to rural areas for the supply of agro-input.
- VIII. Promote credit facilities for ginger farmers to purchase organic fertilizers.
- IX. Increase local capacity for manufacturing blending organic fertilizers in Kaduna State.
- X. Mechanisms will be put in place to reduce the cost of inputs through appropriate programmes such as bulk purchasing and local manufacturing and subsidy to schedule ginger commodities.
- XI. The Government will enforce compliance with quality standards for farm inputs.

Crop Management Practices

Ginger farming practice in Southern Kaduna is a full 12 months calendar event, with task and activities distributed according to operational and time requirements. The farming practice requires three basic attributes; good time management; right and needed labour; and sufficient fertilizer inputs. Also, the operational challenges are not beyond the level of ginger farmers capabilities, while the identified production constraints are areas that require immediate intervention. The crop production systems are largely smallholder and land intensive. Seasonal variations in production are common as the systems are largely rain fed. Use of agricultural inputs, mechanization and adoption of production technologies vary among smallholders and commercial ginger farms.

CHALLENGES

- I. Inadequate access to farm technologies;
- II. Pre and postharvest ginger crop losses;
- III. Drudgery and limited labour;
- IV. Extreme weather events (dry spells, floods);
- V. Depressed land sizes due to increase in population;
- VI. Low soil fertility due to land degradation;
- VII. Limited credit facilities to enable ginger farmers obtain modern inputs;
- VIII. Lack of programmes that can enhance value addition to ginger crop products thereby making the sector not realizing its full potential.
- IX. Ineffective pests and diseases management practices.
- X. Poor adoption of appropriate production technologies for organic farming.

PROPOSED POLICY INTERVENTIONS

- I. Encourage the setup of private sector based and managed Agricultural Equipment Hiring Centres (AEHC) for Farm mechanization and processing to enhance efficiency and productivity in ginger production.
- II. Promote the production of high value ginger crops amongst smallholder and estate farmers to provide equal opportunities of increasing incomes to farmers.
- III. Promote ginger crop production in areas which have suitable agro-ecological factors with appropriate farming systems such as area specific fertilizer and seed recommendations to suit varying topographic conditions.
- IV. Promote the use of integrated pest and disease management technologies to enhance ginger crop productivity.
- V. Promote the adoption of modern technologies in production and processing through improved provision of advisory services by the public and private sector extension service providers.
- VI. Promote seasonal and medium-term credit facilities to farmers for farm inputs such as fertilizers, seed and pesticides. This shall be facilitated through loans from Microfinance banks, Agricultural banks and other banking institutions.
- VII. There is need to establish preferential financing facility for large and medium scale ginger farming.
- VIII. Promote value addition and preservation of fresh ginger crops through enhancement of appropriate ginger processing and storage facilities.
- IX. Strengthen the capacity of ginger crop farmer groups (Cooperative Societies) to respond to changing circumstances in the ginger production.

Resource Mapping and Development of Special Economic Zones

Kaduna state has vast resources for ginger production which remain under exploited. Kaduna has begun collaborating with the federal government and the World Bank on a project to help establish micro ginger processing centres. The Agro-Processing, Productivity Enhancement and Livelihood Improvement Support (APPEALS) Project has supported other Ginger processing hubs in Kwoi and Dogon Kurmi namely Bido Commercials and Fina Agro Ltd to expand their processing capacity and technology.. In addition, a ginger aggregation centre at Assako, near Kachia, has already been set up. The development of the existing ginger production, aggregating and processing area through government and private partnership involvement will require deliberate efforts to map out resources and establish special economic ginger industrialized zones.

CHALLENGES

- I. Limited exploitation of ginger potential in regions with suitable conditions.
- II. Unplanned development of ginger value chain processes which does not take into consideration enterprise suitability and economies of scale.
- III. Lack of spatial plan and land use policy.
- IV. High cost of investment in ginger value chain physical facilities and equipment.

PROPOSED POLICY INTERVENTIONS

- I. The Government will fast track the development of the ginger value chain spatial plan and land use policy.
- II. The Government will undertake comprehensive resource mapping to delineate and exploit resources for ginger value chain development.
- III. Setup of public-private special ginger hubs and provide incentives for investment
- IV. Designate key ginger producing areas of Kachia, Kwoi, Kubacha, Kafanchan as Ginger Economic Zones

Ginger Nutritional Value

Apart from their aromatic, pungent and hot taste, Ginger is a good source of nutrients, vitamins and minerals such Copper, Carbohydrate, Manganese, Magnesium, Potassium and Iron. Moreover, many Amino acids Tryptophan, Isoleucine, Leucine and are also found in 24 gram of Ginger.

Traditionally, ginger rhizome is used to deal with a lot of diseases in Nigeria such as coughs, diarrhea, toothache, headache, aerophagia, stomach ache, yellow fever, indigestion, malaria, typhoid fever, obesity, piles, cold, digestive disorders, hepatitis, liver diseases and rheumatism. According to the National Population Commission (NPC), the numbers of households in Nigeria reached 43 million in 2020. This implies that with proper awareness of the nutritional and medicinal value of ginger, a huge local market is certain.

Ginger is well known in many human communities around the world. In Nigeria, various industries use ginger for different production. The cooking industry utilizes dry ginger as spices in soups and delicacies; the brewery industry use fermented ginger to produce ginger beer; the pharmaceutical industry produces drugs and other medicinal material from ginger. Teas and other drinks are produced from ginger in the beverage industries, while ginger is a raw material for the production of creams, oils, and other beauty products in the cosmetics industry. The processed ginger products of Ginger Powder, Ginger Oil, Ginger Paste, the Food Industry, Pharmaceutical Industry and Cosmetic Industries are responsible for high global demand of ginger.

CHALLENGES

Low awareness, adoption and appreciation of the nutritional and medicinal value of ginger.

POLICY ACTIONS TO ACHIEVE THE POLICY OBJECTIVE

- I. Develop programmes that project and promote private sector lead ginger value chain addition;
- II. Investors will provide support to groups that are involved in ginger value chain addition, procuring modern value chain addition processes through direct government interventions, donors and Non-Governmental Organisations.
- III. Enlighten household and food and beverage industries of the nutritional and medicinal values of ginger through public awareness campaigns.
- IV. Companies that utilizes ginger spices in their production line will collaboration with stakeholders in capacity building on ginger plant nutritional and medicinal value.

SUPPORT SERVICES

The policy objective is to enhance provision of adequate and efficient support services critical for improved ginger production. The main support services addressed are appropriate research and development, adequate and efficient extension services, availability and access to information and communications, affordable financial products and comprehensive insurance cover.

Research and Development

The Institute for Agricultural Research (IAR), Ahmadu Bello University, Zaria, (Horticultural Programme), had the mandate to conduct research into aspects of ginger production. Ginger research into aspects of its production, processing and marketing/ trade/ export, storage ; has attracted little focus from both the University and the State Government. The Kaduna State University-KASSU with Faculty of Agriculture cited at Kafanchan the home area of ginger has not been constructively engaged by the stakeholders (i.e., the ginger producers and others involved across the value chain system) to play the role of a ginger research institute with specific mandate.

CHALLENGES

- I. Inadequate ginger-sector research service providers in the ginger producing area of Kaduna state which affects sustainable research in production and technologies; efficient utilization of resources; synergy; and promotion of unproven technologies.
- II. Absence of ginger research institutions in ginger process zones with specific mandate.
- III. Inadequate processes of transfer of proven technology from Research institutes through Extension services to ginger Farmer resulting in low technology adoption.
- IV. Inadequate resources to undertake strategic and demand driven ginger value chain research in light of tropical and emerging issues including climate change.
- V. Inadequate capacity to undertake ginger seed quality control services.
- VI. Inadequate capacity to undertake ginger biotechnology research and development.
- VII. Limited collaboration and coordination among research institutions and other stakeholders has resulted in lack of consultations when setting the research agenda, leading to uncoordinated research activities and programmes.
- VIII. Ineffective dissemination of research findings and poor adoption of technology.
- IX. Inadequate programmes for building capacity of research personnel, hence inability to keep up with changes in technological advances.

PROPOSED POLICY INTERVENTIONS

To address the constraints above, the following interventions will be undertaken.

- I. Ginger Research will be financed through the Government of Kaduna State, private sector, development partners, trust funds, royalties and competitive grants.
- II. Establishment and strengthening of ginger Value chain research institutes to be sited in the ginger producing areas (Kwoi, Kagarko, or Kubacha) by Kaduna State Government in partnership with organised private sector and the academic institutions.

- III. Government will develop a policy framework to harmonise and coordinate ginger research and technology development to promote efficiencies and synergies in ginger research and technology development in Kaduna State.
- IV. Investor led capacity building and fund raising initiative for research grants and training of researcher for ginger biotechnology research and development.
- V. Strengthen the processes involved in the transfer of proven technology from Research institutes through Extension services to ginger Farmers so as to increase uptake of technologies.
- VI. Promote sustainability by developing high yielding and disease resistant ginger varieties that can compete favourably in terms of quality in international market.
- VII. While adopting best practice models, provoke researches to solve localized ginger value chain challenges on: Narrow genetic base, Low yielding varieties, Insufficient mechanization of production process, High production cost, Undeveloped local and international markets, Poor processing facilities, Incidence of yellow leaf spot and so on.
- VIII. The Government/ private sector will design innovative ways to disseminate research findings to beneficiaries that will include establishing research databases, use of ICT and promoting technology adoption.
- IX. Research institutions will be encouraged to carry out more focused research on disease and pest management.

Agricultural Extension

In Kaduna State, it is found that there is a wide gap between awareness and adoption of improved agricultural technologies among farmers in the state. This situation suggests that the role performance of extension agents is problematic and contributes to the general malaise in Kaduna agriculture. One of the key issues in the effectiveness of agricultural extension is role impact. The roles and impacts of extension agent's activities are highly varied and often ineffective. Ginger requires specialised extension approaches and skills due to its dynamism and industry needs.

There are inadequate extension service providers to cater for the needs of ginger farmers. Consequently, high-potential regions and farmers who produce for the local market have not benefited from this service. In addition, most farmers are not yet commercially oriented. Lack of operational synergy of programmes by extension providers has hindered harmonization of extension messages. Appropriate extension packages require constant reviewing and updating. There is low awareness among extension providers of quality requirements for ginger produce and few guidelines for good agricultural practices.

CHALLENGES

The provision of agriculture extension services in Kaduna state needs to be reformed in line with new challenges and trends. These include

- I. Inadequate ginger value chain extension program
- II. Poor service delivery due to use of inefficient extension methodologies, and lack of coordination in the provision of extension services.
- III. Inadequate numbers of extension personnel to reach most industry stakeholders leading to lack of adequate knowledge and skills transfer.
- IV. Extension agents lack adequate knowledge of existing standards for producing quality produce.
- V. Inadequate funding of existing extension services.

- VI. Inadequate synergy in terms of training between Extension and ginger Farmers to acquire more skills in ginger value for different local and international demand networks.
- VII. Insufficient ginger farmer's organizations to liaise with extension services for the benefit of their member as stakeholders in the ginger value chain sector.

PROPOSED POLICY INTERVENTIONS

The policy actions for achieving ginger value chain demand-driven extension services are as follows:

- I. Establish ginger value chain extension program in the departments of Agriculture in the various local Government Areas where ginger crops have comparative advantage.
- II. Train Ginger Extension workers on modern ginger production techniques
- III. Improve funding to extension services to cover all commodities and areas, and catalyse demand-driven extension.
- IV. Initiate and strengthen the co-ordination and collaboration amongst stakeholders in the ginger value chain.
- V. Promoting gender equality and equity in agricultural extension service provision through gender advocacy and community empowerment to address poverty, malnutrition, environment and HIV and AIDS concerns.
- VI. Setting, monitoring and evaluating standards for the quality of agricultural extension services with respect to ginger value chain extension services.
- VII. The private sector to organise programmes to encourage farmers, extension agents and suppliers to build quality into the products throughout the value chain.
- VIII. Harmonize linkages between extension and research through demonstration, field days.
- IX. Promote the use of various methods and approaches to strengthen ginger farmer organisations.
- X. Strengthening the capacity of FBOs and other community-based associations to be able to provide extension services to their members, to organize and voice their demands, and to lead the planning, monitoring, and evaluation of extension service provision.
- XI. Prioritize extension service provision by government to areas, commodities, and farming households that private sector and NGO extension service providers are not able to cover.
- XII. Strengthening the capacity of ginger value chain extension staff for efficient facilitation, coordination, regulation, and certification of service providers.
- XIII. To Setting-up and implementing a system of mapping, monitoring, and evaluating extension service provision by conducting regular assessment of extension messages and advice provided by different service providers, and the relevance and usefulness of this advice to different ginger farmers.

E-Commerce, Information and Communication

There is significant potential for e-commerce expansion in Kaduna, as the state benefits from a very young and digitally connected population. Major Nigerian e-commerce portals such as market leader Jumia and payments solutions are available to residents. Local entrepreneurs are also entering the space: Kada Mall, which was established in 2015, is the first home-grown e-commerce platform in the state. As a local online mall, the platform aims to provide a faster delivery service than competitors, giving local vendors an opportunity to showcase their products to Kaduna residents. The Kaduna state ginger industry can leverage on the e-commerce platform to showcase and sell their products to the world.

Quality information is also required for planning and development in the ginger industry. Currently, KBSTAT, the Kaduna state Ministry of Agriculture and KADIPA are the key players engaged in ginger data collection. The data generated from researchers cuts across both the public and private institutions involved in ginger matters. These data are published without governmental institutional validation committee of ginger industry stakeholders. There is also lack of cooperation and withholding among custodians of information which has negatively affected the development and progress of the ginger sector. Thus, available information on ginger prices, production, yields, consumption trends, markets, farm sizes, area insufficient and unreliable. Currently the data available is neither adequate nor timely and has limited accessibility. The ICT potential has not been exploited to enhance data management in order to deliver value to the industry.

CHALLENGES

- I. Low utilization of the Kaduna state e-commerce platform
- II. Unavailability or lack of functional Ginger Information Management System and Validation unit in Kaduna Ministry of Agriculture.
- III. Organized systems of data and information management are lacking, and the information available is held by various stakeholders.
- IV. Accessing existing data and information in ginger for the purpose of planning and development is cumbersome.
- V. There is limited capacity for data collection and management among value chain players resulting in unavailability of accurate data.
- VI. Collection and dissemination of market information is not well organized leading to exploitation of farmers arising from information asymmetry.
- VII. Communication technologies like radio, mobile phones, websites and e-mails have not been used optimally due to high cost and accessibility constraints in some areas.

PROPOSED POLICY INTERVENTIONS

The Government, in collaboration with investors will;

- I. Adequately utilize the Kaduna state e-commerce platform to showcase and sell their products to the world
- II. Establish or strengthen existing Ginger Information Management System (GIMS) and constitute Ginger Information Validation Unit (GIVU) in Kaduna Ministry of Agriculture.
- III. Encourage ginger commodity surveys, censuses and value chain studies to generate data to enhance the availability of information for the industry.
- IV. Encourage data validation forums for stakeholders to share information. Stakeholders will be facilitated and empowered to collect and validate data.
- V. Institute innovative communication strategies for collecting and disseminating market information.
- VI. Strengthen agricultural information desks in the districts to empower stakeholders. This information shall include trends and opportunities.
- VII. Activate Annual ginger value chain fairs in the state that will attract tourist from all over the world.

Financing and Investment of the Industry

Provision of affordable and accessible financial services is essential for the development of the ginger industry. Investment in ginger enterprises is capital intensive. In addition to own capital, several financial institutions offer support to the industry. These include commercial banks and financial institutions, such as BoI, NIRSAL and BoA, bilateral and multilateral lending institutions, NGOs, and donor

programs. However, such financial services are not easily accessible by a large number of medium and small-scale ginger value chain operators due to high interest rates, low level of awareness and low credit portfolio for agriculture by financial institutions.

Programs financing the industry are uncoordinated resulting in duplication of activities. This can partly be attributed to lack of prioritising on areas that need financing. The Government has established partnerships with some banks and other lending institutions to expand the agricultural loan portfolio and avail credit at single digit interest rates. Though most large-scale farmers and medium-scale commercial ginger farms have a wider range of credit packages and options available to them, smallholders lack access to credit, and where such credit exists, it is not tailored to meet their production needs.

CHALLENGES

- I. Government financial support to the industry is inadequate.
- II. Lack of a special fund to support development of the ginger industry.
- III. Inaccessibility of funds to smallholder farmers due to high interest rates.
- IV. Limited access to long-term loans for capital investment in the ginger industry.
- V. Inadequate management capacity of some ginger loan applicants.
- VI. Scanty information on availability of financial resources.
- VII. Lack of a framework for coordinating development and investment programs.
- VIII. Financial services not tailored to meet the needs of the small- and medium scale producers.

PROPOSED POLICY INTERVENTIONS

- I. The Government will improve budgetary allocation to ginger sector.
- II. Private sector and other stakeholders will need to establish affordable credit facilities to support ginger investments.
- III. Financial institutions (CBN, BoA, Development Bank, NIRSAL) must continue promoting the development of long-term appropriate financial products that are accessible and affordable to ginger farmers and investors
- IV. CBN, NIRSAL should prioritise ginger in the Anchor Borrowers Program
- V. The State government will explore partnership opportunities with Local and international funding institutions and development partners through finance the ginger industry through intervention programmes and projects.
- VI. Build Cooperative Societies capacity to access loans and financial tools needed for industrialisation of the ginger value production and processing
- VII. Establish a suitable mechanism for disseminating information on available sources of funding the industry.
- VIII. Engage the private sector in identifying the industry's investment priorities.
- IX. Put in place mechanisms to coordinate funding by development agencies to avoid duplication and enhance enterprise diversification.
- X. The government will provide incentives to attract local and foreign direct investment in the ginger sector.

Insurance Schemes

There are risks and uncertainties in the ginger industry that call for appropriate insurance schemes. Currently there is the Nigeria Agricultural Insurance Corporation (NAIC) and Nigeria Agricultural Insurance Scheme (NAIS) that provide crop insurance with specific objectives to provide financial support to farmers for losses from natural

hazards; induce provision of credit to farmers; promote agricultural production and provide emergency assistance during periods of disasters.

There are inadequate insurance schemes for agriculture in general and ginger industry in particular. In addition, there are knowledge gaps on crop insurance. There is low adoption of appropriate measures that would mitigate against risks and uncertainties, making the ginger industry unattractive for insurance cover.

CHALLENGES

- I. Inadequate technical skills in agricultural insurance.
- II. There is a knowledge gap in insurance among ginger stakeholders.
- III. Inadequate appropriate insurance schemes for the ginger industry.
- IV. High insurance premiums for ginger enterprises.
- V. Lack of insurance regulations on ginger sector.
- VI. Low market coverage and insurance penetration.
- VII. Budgetary constraints due to slow and at times non-payment of premium subsidy.
- VIII. The scheme participation is low due to financial institutions lack of interest in lending to agriculture.
- IX. Agricultural cover is typically limited to the loan amount rather than total production.

PROPOSED POLICY INTERVENTIONS

- I. The Government will develop a strong legal, regulatory system for agricultural insurance.
- II. The Government will initiate and support implanted, escalated and sustained application of smart premium subsidies for agricultural insurance products. This is to leverage on the positive impact of enabling farmers to purchase agricultural insurance policies.
- III. Public-private partnership approach in the implementation of agricultural insurance.
- IV. Investors in collaboration with government and stakeholders will create agricultural insurance reserve fund, to serve as an intervening measure during a major catastrophe or whenever cumulative premium incomes becomes inadequate to meet the cost of claims.
- V. Ensure that agricultural insurance service providers offer insurance products in partnership with NIRSAL that are affordable and relevant in the mitigation of important weather risks and meeting the farmer's demands and expectations.
- VI. Provide an enabling environment to private insurance companies to develop appropriate and affordable enterprise insurance products to support ginger investments.
- VII. Integrate agricultural insurance as part of a comprehensive approach to agricultural risk management in all its agricultural programs including the ginger sector.
- VIII. Ensure that the agricultural insurance landscape is populated by credible, cost effective and commercially viable insurers whose claims payments are fast and equitable.

MARKETING, VALUE ADDITION AND TRADE

The policy objective is to provide an enabling environment that facilitates marketing, value addition and trade with a view to enhancing competitiveness of Kaduna state ginger products in domestic, regional and international markets. To ensure the industry's competitiveness, focus will be on development, management and regulation of fresh ginger product markets. Trade will be improved through harmonizing and adopting standards, improving product quality, and enhancing use of market information systems. Value addition will be encouraged at all stages of product value chains.

Domestic Market

Domestic trade is an important source of livelihood for players in the ginger value chain. The major actors involved in trade are producers, traders, middlemen, transporters and local authorities. While there are over 20 splinter ginger markets located across the ginger producing areas of Kaduna State, the major ginger markets are the ones in Walijo, Kachia, Kwoi, Kafanchan, Kubacha and Jere. These markets account for over 80% of ginger trading across the state. These markets are the real and main source of ginger purchase and aggregation amongst several ginger exporters.

Although some groups of exporters purchase ginger from farmers off the farm or at home or at their warehouses, majority of the trading takes place in these markets. The margins between farm gate prices and consumer prices are wide and indicative of suppressed profitability for the producer. While most of these markets have operated for long, and have been expanding over the years, the volume of daily transactions cannot be ascertained, but estimates put it in excess of millions of naira on a weekly basis. Many markets have inadequate physical facilities and do not therefore provide facilities like storage, weighing equipment, loading/unloading and social amenities.

CHALLENGES

- I. Absence of temporary storage facilities enough to hold ginger that has been purchased by merchants before onward transportation to processing centres or ports.
- II. Information asymmetry among market players distorts market prices, reduces producer margins, skews trade benefits toward middlemen and traders, and blocks entry of new market players while increasing the wide gap between the farm gate and market price.
- III. Lack of access to physical markets for new entrants due to presence of cartels and brokers.
- IV. Failure to honour contractual obligations between buyers and producers.
- V. Conflicting markets' management and regulatory roles by Government agencies.
- VI. Prevalence of produce of substandard hygiene and quality arising from lack of enforcement of standards, and poor consumer awareness.
- VII. Inappropriate pre- and post-harvest handling practices and packaging of ginger produce.

PROPOSED POLICY INTERVENTIONS

- I. Local authorities will identify, mark and possibly fence ginger markets for proper monitoring of activities.

- II. Investors in collaboration with Local authorities will build sheds and temporary storage areas in all the major ginger markets
- III. Establishment of cold chain logistics operation framework with NIIT, Zaria
- IV. The local authorities will introduce special levies for ginger brought into the market as part of government's revenue generation
- V. The investors will introduce moving and loading equipment into the markets to facilitate easy movement of ginger produce brought into the markets
- VI. Local authorities will appoint Trained Market Officers responsible for monitoring market activities and ensuring the interest of all parties are protected.
- VII. Facilitation Contract farming initiative will be encouraged to increase farmer bargaining power and benefits from economies of scale as well as cushioning them from price fluctuations.
- VIII. The Private sector will be fully involved in provision of appropriate transport for fresh produce.
- IX. Promote gathering and exchanging market information through appropriate avenues by public and private sector players.
- X. The Government will setup a Ginger Marketing Board (GMB) with the following roles:
 - a. Develop, operate, manage and oversee activities in all the Major ginger markets
 - b. Appoint Market Officers for all the ginger markets
 - c. Carry out research and collect data on all ginger trading in the market on a weekly basis (document volume of ginger brought to the market, amount of ginger sold, number of transactions carried out, keep a register of traders and merchants)
 - d. Secure export opportunities for ginger farmers, traders and merchants
 - e. Support ginger farmers, traders, and merchants to export ginger to international buyers
 - f. Provide local and international trading information to all stakeholders
 - g. Price regulation based on current market realities
 - h. Training and Workshops for farmer, traders, merchants on local and international market trends

Regional and International Markets

Ginger trading at the international market primarily consists of buying ginger in the following forms: fresh ginger, dried split/diced ginger, ginger powder and ginger oil. To be able to sell any of these products at the international ginger market, a lot of processing needs to be done to bring these products up to speed with the buying conditions of most of the buyers especially in Europe and the America's where there is

much premium on quality of the ginger. In 2019, Nigeria's ginger gross production was valued at USD 246.06 million, which reinforces the importance of this sector to the Nigerian economy and explains why ginger is regarded as one of the top (non-oil) export commodities for the country.

CHALLENGES

- I. Inadequate high quality secondary ginger produce for export.
- II. Lack of organised market information system to facilitate trade and investment decisions in regional and international markets;
- III. Inadequate warehouses for large buyers to store their stock;
- IV. Lack of cleaning and drying centres in the ginger producing areas;
- V. Inadequate ginger sun-drying facilities which made processors sun-dry ginger next to highways. Thereby affects the quality.

PROPOSED INTERVENTIONS

- I. Attract investment in Ginger processing plants and centres across the ginger producing areas in the state.
- II. Expedite the setup of the Special Ginger Processing Zones across the state under the auspices of the Ginger Processing Zones Authority.
- III. Specific mandate for Ginger Marketing Board (GMB) to play a more proactive role in marketing Kaduna ginger regionally and internationally.
- IV. Establish the Ginger Export Forum.
- V. Create a special high-powered session for Ginger at every KADINVEST.
- VI. Create a Ginger Desk at the State Ministry of Agriculture with the Officer in Charge who is at the Directorate level (Assistant Director/Deputy Director).
- VII. Work with the Central Bank of Nigeria, Bank of Industry, Bank of Agriculture, commercial Banks to setup special ginger funding pots.
- VIII. Hold Annual Ginger Exhibition in Kaduna or Abuja / Create Special Sessions for Ginger at the Annual Kaduna Trade Fair.

Food Safety, Certification and Quality Standards

In Kaduna state, the establishment of ginger standard is essential for promoting and developing its quality and safety as well as enhancing trust and recognition in both domestic and international markets. The overriding problem is that of an ineffective risk management system on ginger food safety- and lack of a legally empowered competent authority. Safe and high quality ginger products should have the following minimum requirements: (1) whole rhizome; (2) fresh; (3) clean and practically free of any visible foreign matter; (4) free of deterioration and rotting makes it fit for consumption; (5) skin and cut surface shall be dry; (6) abrasions shall be dry; (7) practically free of pests affecting the general appearance of ginger; (8) practically free of damage caused by pests affecting flesh quality; (9) free of abnormal external moisture at skin of ginger, excluding condensation following removal from cold storage and (10) free of any foreign smell and/or taste.

To prevent contamination that may be harmful to the consumer, our ginger must be hygienically harvested, including practices on storing, packing and transporting. There is no coordinated self-regulation mechanism among small producers on produce safety. The growers of produce destined for domestic and global markets are therefore not effectively regulated. This can partly be attributed to ineffective enforcement of legal

and regulatory provisions. Local growers implement some measures of international standards. However, complying with these standards is both tedious and costly.

In Nigeria, the main quality and CSR certification schemes are: NICERT-Ecocert; GLOBALG.A.P.; organic (USDA (NOP) and EC 834/2007, 889/2008); fair trade; halal; American Spice Trade Association (ASTA); European Spice Association (ESA); Hazard Analysis and Critical Control Point (HACCP); and International Featured Standard (IFS). EU buyers consider the quality of ginger crucial for exports. Ginger intended for export to the EU must adhere to EU regulation no. 1881/2006 for aflatoxins/ochratoxins and EU regulation no. 396/2005 concerning maximum residue levels (MRLs) of pesticides.

According to CBI, the Quality Minima Document published by the European Spice Association (ESA) is the leading reference for the national spice associations affiliated with the ESA and for most key buyers in Europe. It specifies the chemical and physical parameters that dried ginger needs to comply with for it to be sold in the EU (before crushing and grinding). These include ash: maximum 8%; acid insoluble ash: maximum 2%; moisture: maximum 12%; volatile oil: minimum 1.5 ml/100 gr. and SO₂: maximum 150 ppm. Although no specification for cleanliness is specified by the ESA, EU companies refer to specifications from the American Spice Trade Association (ASTA), which rates cleanliness for ginger based on the following: whole insects dead (by count = 4); excreta mammalian (3.0 mg/lb), excreta other (mg/lb); mould (% by weight), insect defiled/infested (i.e. more than 3% mouldy pieces and/or insect infested pieces by weight) (% by weight); and extraneous foreign matter (1% by weight). Sector experts stress that SME exporters need support to ensure that they and their suppliers can comply with the requirements of these certifications and standards. Experts maintain that for certified ginger in Nigeria there is added value in terms of price increase. For instance, they claim that organic-certified dry splits can fetch up to USD 2,500-3,000 per tonne. GLOBALG.A.P. certification can fetch up to USD 1,100-1,500 per tonne. If processed into ginger powder, organic certification can fetch up to USD 7,000-8,000 per tonne, compared to processed ginger powder without certification (i.e. USD 4,000-4,500 per tonne). For ginger shot and oleoresin (ginger oil), organic certification can fetch a price of about USD 8.99 per 10 ml, compared to the standard product without certification (i.e. USD 8.99 per 30 ml).

CHALLENGES

- I. Lack of a harmonised strategy for management of ginger certification and quality standard.
- II. Inadequate regulatory and institutional framework for food safety.
- III. Low level of awareness on food safety issues.
- IV. Inappropriate handling of produce for domestic market that does not normally conform to food safety and quality requirements.
- V. There is inadequate enforcement of legal and regulatory provisions for produce in the domestic markets.
- VI. Inadequate enforcement of packaging and labelling standards.

PROPOSED INTERVENTIONS

- I. Private sector with support of the government will develop and implemented ginger commodity safety risk management systems to guarantee product quality at the market place.
- II. The government will Review and harmonise the regulatory and institutional framework to improve coordination and enforcement of ginger certification and quality standard requirements.
- III. The government will create awareness and enhance enforcement of standards for ginger produce destined for both the local and international markets.
- IV. Private sector players will undertake self-regulation and conform to market requirements.
- V. Accredited laboratories that test for quality of ginger commodities in order to provide confidence among consumers.
- VI. The government will encourage all its agencies to collaborate at LGA level to enhance enforcement of standards in the local markets.
- VII. Investors will develop comprehensive packaging and labelling standards for the local and export markets.
- VIII. The government will enhance bilateral cooperation between Nigeria and other countries in areas of sanitary and phytosanitary inspection as well as pre-shipment inspection to boost exports of ginger produce.
- IX.

Market/Trade Information Systems

The ginger industry requires accurate and timely information for planning purposes. Kaduna State Bureau of Statistics (KSBS), Kaduna Investment Promotion Agency – KADIPA, Kaduna State Ministry of Agriculture, NEPC, AFEX, are some sources of ginger commodity data. There is variability of data published by these institutions, hence confusing. The unreliability of the domestic and regional trade statistics is attributed to lack of an effective data-capturing mechanism to monitor cross-border trade, trade in municipal markets and other market outlets. There lacks a harmonised system for data capturing among Government agencies and other stakeholders. In some cases, businesses do not have information about market destinations and market access opportunities under the various international trade agreements that Nigeria is a signatory.

CHALLENGES

- I. Lack of an integrated and comprehensive data and information management system for the ginger industry hinders coordinated planning and management.

PROPOSED INTERVENTIONS

- I. The Government will collaborate with the private sector and development partners to develop an efficient ginger commodity market information system, and to build the necessary physical and human capacity to manage the system.

Traceability

Lack of traceability limits Nigerian ginger growth to the EU market. The traceability of produce is an important component of trade. Nigeria (Kaduna) state should improve substantially in implementing measures for effective traceability.

CHALLENGE

- I. Inadequate implementation of regulatory and administrative measures to ensure traceability has led to poor ginger production conditions and unfair trade practices.

PROPOSED INTERVENTION

- I. Partnerships among key actors along the ginger value chains will be enhanced to ensure effective traceability mechanisms are in place and operational.

Processing and Value Addition

About 90 per cent of Nigerian ginger is exported as dry splits. China, Netherlands, Thailand, Peru, and India are the top five exporters of ginger in the world which together occupy about 85% of total ginger exports. Nigeria has the potential to break into their ranks. This segment holds the largest global market potential and is mostly traded in international markets as 'dry split', 'dried whole or sliced'. Ginger can be processed in industries to ginger powder, ginger oil and ginger oleoresin. SMEs that are into value additions

To make global impact, many more companies should be encouraged to come into value addition, while challenges such as low capacity and high cost of value addition infrastructure should be looked into.

CHALLENGES

- I. Inadequate incentives for investment in ginger value addition.
- II. Inadequate ginger marketing strategies to promote consumption of locally processed products.
- III. High cost of compliance with ginger processing requirements.
- IV. High cost of local processing.
- V. Lack of comprehensive inventory of players involved in ginger value addition.
- VI. Unfavourable technologies for small scale ginger value addition.

PROPOSED INTERVENTIONS

- I. Encourage the Private sector to invest in product and produce branding to promote local consumption and exports of ginger produce with unique attributes.
- II. Government, Financial Institutions and Investors will support the setup of micro -mini ginger processing plants
- III. Subsidise the cost of purchase of ginger processing equipment such as ginger washing machines, slicing machine, dryers and grinders.
- IV. Partner with local fabricators of ginger processing machines to achieve massive production, distribution and adoption of ginger processing machines in the state.
- V. Undertake measures to moderate the cost of complying with processing requirements.
- VI. Government in partnership with NIRSAL and other financial institutions should setup a Ginger Equipment Financing Scheme aimed at support farmers and

micro processing companies acquire all the necessary ginger processing equipment.

VII. Put in place measures to reduce the cost of processing.

VIII. The government and Private sector will facilitate the development comprehensive inventory of ginger value addition enterprises and players

IX. NGOs, Development partners and organised private sector will facilitate the development of appropriate processing machines for low-income small holder entrepreneurs.

X. The government will continue to offer attractive incentives to encourage investments in value addition and remove barriers for small scale ginger value addition holders.

XI. NGOs, CBOs and Development partners will promote greater involvement of the youth/women in value addition.

XII. The government will create an enabling investment environment for full commercialization and value addition in the ginger sector.

INFRASTRUCTURE

The policy objective is to facilitate development of infrastructure that will promote and sustain competitiveness of the ginger industry. Development of infrastructure will focus on: improving roads, rehabilitating of old and establishing new irrigation facilities, improving access to the export ports (Kaduna Inland Dry Port and the Kaduna International Airport) and the railway system and constructing modern markets. Other infrastructural developments will include upgrading of airports, improving electronic communication, and improving on existing and establishing new and renewable energy sources.

Roads

Fresh ginger produce is bulky and perishable and requires efficient transportation to market outlets. Most roads in the ginger production areas are impassable, especially during the rainy season. This results in heavy losses due to untimely delivery of produce to the market. In addition, the poor state of roads significantly affects the quality of the produce due to damage. Poor roads are a major hindrance to commercialization and competitiveness of Kaduna state ginger produce and products thus hindering full exploitation of the industry's potential.

CHALLENGES

- I. High losses of produce due to deterioration in quality as a result of delayed delivery occasioned by poor roads.
- II. Most of the roads in the ginger producing regions are in dilapidated condition due to poor maintenance.
- III. Inadequate allocation of funds for road development and maintenance in production areas.

PROPOSED INTERVENTIONS

- i) The Government will develop and maintain rural access roads and other roads leading to market outlets to all-weather status to facilitate timely delivery of produce to markets.
- ii) The Government will promote community and private initiatives in the construction and maintenance of rural access roads.
- iii) Levies charged on ginger will be used to improve and maintain roads in the production areas.
- iv) Create a logistics system that takes advantage of exporting ginger directly via the Kaduna International Airport (fresh ginger) and the Kaduna Inland Dry Port (fresh and dried ginger)

Electronic Communication

In a vibrant and dynamic industry such as ginger, electronic communication is vital in keeping pace with development. In Nigeria (Kaduna) state, there are various forms of electronic communication: mobile telephone, TV, radio, and the internet. The use of these media has increased resulting in faster information flow. The Government has provided a supportive environment by reviewing relevant legislations in the communication sector. The most recent development in this area to achieve fast, widespread broadband access to attracting telecoms operators, the government gave a full waive right of way (RoW) charges to telecommunications companies. It is expected that this move will make Kaduna a more competitive destination for future investment for the installation of the fibre optic cable, liberalization of communication, freeing of airwaves, and promotion of e-commerce.

CHALLENGES

- I. Low level ICT literacy of farmers.
- II. Limited access and cost of internet services for both extension agents and farmers.
- III. Limited access and cost of energy.
- IV. High cost of electronics gadgets.
- V. Inadequately distributed support infrastructure for electronic communication in most ginger production areas.
- VI. Cost of adopting digital-based technology is high.

PROPOSED INTERVENTIONS

- i. The government will facilitate the Train the Trainers on E- Extension to improve on the ICT literacy level of farmers.
- ii. Provide and facilitate reduced energy and internet services cost.
- iii. Engagement of Private sector and foreign investors to bring down prices of electronics gadgets
- iv. Continue to reduce the cost of electronic communication by reducing taxes and levies.
- v. Private sector will ensure the distribution of the electronic communication infrastructure such as fibre optic cable cover all ginger production areas.
- vi. Provide an enabling environment for the provision of electronic communication services to attract more players in the sub-sector.

Energy

Kaduna Power Supply Company (KAPSCO), fully owned by the Kaduna government, was created to undertake energy initiatives in areas where significant supply gaps remain. KAPSCO has spearheaded a number of projects to supply power to rural communities and industrial sites such as the Green Economic Zone in Maraban Jos, Damau Household Milk Farm in Kubau, and the state's two largest water treatment plants in Malali and Zaria. Also, the government of Kaduna identified renewable energy as an important source to tap into as part of its strategy to close the electricity gap, with the state actively pursuing partnerships with the private sector. To achieve rural electrification objectives, Kaduna has been developing a portfolio of projects with financially sound off-takers, and is utilising a mix of public and private finance in a process led by KAPSCO.

Solar provides the best opportunities out of all renewable energy options, as the state has abundant sun and particularly high levels of radiation in Rigachikun and neighbouring areas. Kaduna aims to generate 50-300 MW of solar energy in three local government areas, which KADIPA estimates would provide 1000 direct and 5000 indirect jobs. KADIPA has already attracted a number of solar companies to the state. These include Anjeed Kafanchan Solar, a subsidiary of Anjeed Innova Group of India, which has signed a power purchase agreement (PPA) with the Nigeria Bulk Electricity Trading Company (NBETC) for their 100-MW solar plant situated in Kaduna State; Quaint Abiba, a US based energy company which has agreed to a similar PPA with the NBETC for a 50-MW project in Kaduna; and India-based Skipper Seil, which is also building a 100-MW plant in addition to agreeing to the production of electricity transformers and accessories for Kaduna.

The ginger industry consumes a high amount of energy in production, lighting, and machinery operation, processing, transportation and packaging. The current national electricity demand outstrips the supply due to over-reliance on hydro-electric power.

CHALLENGES

- I. The high cost of electricity and fuel makes ginger value addition process expensive, resulting to low profit.
- II. Frequent power outages lead to losses and reduced efficiency in industry operations.
- III. There is inadequate energy infrastructure installed in the ginger production areas.

PROPOSED INTERVENTIONS

- I. The Government will continue to promote, encourage, invest and explore alternative and cheaper sources of energy as well as review tariffs with a view to reducing cost of energy to encourage competitiveness of Kaduna ginger industry.
- II. Further liberalize the energy sector, to encourage the participation of more companies in generation of power thereby improving supply and lowering price.
- III. Up-scaled electrification in ginger production areas.
- IV. Introduce incentives for investment on green energy and other alternative sources of energy.

Water and Irrigation

CURRENT STATUS

Ginger can be grown both under rain fed and irrigated conditions. Hence water is a very valuable agricultural input in the ginger value chain. Due to seasonality of rainfall and vagaries of weather, ginger production is mainly rain fed. Though, it can be up-scaled by employing irrigation for all-year round production. A high volume of water is also needed in the process of washing ginger. The quantity of water available for use in ginger washing activities is insufficient while the quality is continually declining. This is partly attributed to limited pipe borne water supply. Many processing firms resort to private borehole drilling for this purpose.

CHALLENGES

- I. Unavailability of pipe-bore water.
- II. Low investment in water project in ginger producing areas.
- III. Low development of irrigated production.
- IV. Use of unsuitable and poor-quality water for washing ginger.
- V. Over-exploitation of water resources
- VI. Continuous degradation of water catchment areas.

PROPOSED INTERVENTIONS

- I. The Government will construct dams to supply water to communities in the ginger industrial zones.
- II. Private sectors will invest in the development of more irrigation schemes and mapping out of alternative areas for future investments.
- III. Relevant laws will be enforced to discourage the use of unsuitable water for ginger washing.
- IV. Provision of quality water and supplementary irrigation will be encouraged and enhanced to ensure a stable supply of horticultural produce throughout the year.
- V. Investors will promote the adoption of water-efficient technologies.
- VI. Preservation and conservation of water catchment areas and prevention of water pollution will be exercised.

Kaduna Inland Dry Ports

Kaduna is likely to benefit greatly from upgrading existing inland container depots (ICDs) to a dry port that can accommodate 5000 containers and could employ up to

6000 people. This provides Kaduna with a key link to global supply chains. According to the Nigerian Shippers' Council, Kaduna was one of seven approved locations for the ICDs and container freight stations, which were concessioned to private sector operators by the ICD Implementation Committee of the federal Ministry of Transport. The ICD is managed by Kaduna Inland Dry Port (KIDP), a subsidiary of Inland Containers Nigeria Limited (ICNL). The ICNL is a fully local organisation incorporated in 1980 to provide port services to the hinterland through its two bonded terminals in Kano and Kaduna.

Since the Kaduna terminal was upgraded to a dry port, it has been operating as a port of origin for exports and a port of destination for imports from the hinterland and landlocked neighbouring countries, such as Niger Republic and Chad. KIDP is the first of its kind in Nigeria equipped to handle more than 29,000 containers per annum. With the capacity of the Inland Dry Pot, the perennial congestion at the port which result to low turnover of goods, increased cost burden on investors and ultimately consumers has been addressed. Investors can now take full advantages of the Kaduna Inland Dry Port for the export of ginger for optimum export. Majority of ginger exported from the state is moved from the market square/warehouses to the Lagos port directly, thus denying the state additional revenue accrued from the use of the port terminal.

CHALLENGES

- I. Delays at the port incurs extra cost of exporting of ginger produce thereby reducing profit and disappointment on the part of the exporter;
- II. Inadequate facilities at the port for handling fresh ginger produce.

PROPOSED INTERVENTIONS

- I. Port services will be improved to enhance efficiency and competitiveness.
- II. The Government in partnership with the private sector will invest in more ginger produce handling facilities at the Inland Dry Port.
- III. Government in partnership with the private sector will setup a logistics network between ginger markets/producing communities and the Kaduna Inland Dry Ports

Railways

Rail has the potential to transport bulk ginger commodities for both local and regional markets. Presently, this mode of transport has limited network in Nigeria. Kaduna has long been an important hub in the country's narrow railway gauge network, serving as a junction for the Kano-Lagos Western Line and the Eastern Line. Construction on a 186-km standard gauge rail link connecting Abuja to Kaduna was completed in 2014 and inaugurated in July 2016, with passenger services operating between the two cities since that year. Abuja-Kaduna line is part of a larger project connecting Lagos to Kano. Progress on this rail modernisation project is well under way, with work commencing on the key \$1.53bn, 156-km double-track Lagos-Ibadan link in 2017. Eventually, the rail lines passing through Kaduna are to be extended to other northern states and beyond, connecting Nigeria to the Niger Republic, Cameroon and Chad. In the nearest future, bulk ginger commodities will be exported through the railways.

CHALLENGE

- I. Railway services have not been adequately utilised due to inefficiency and unreliability.

PROPOSED INTERVENTION

- I. The State Government will continue to build on its partnership with the Nigerian Railway Corporation for the movement of goods via railway from the Kaduna Inland Dry Ports to other parts of the country and Africa.

Air Transport

The use of Air transport is limited in the export of bulky ginger produce, though it remains the fastest means of supply of ginger value added commodities that are less bulky. Nigeria is strategically placed to serve as the hub of air traffic for West Africa. The country has a relatively well developed air transport industry with more than six international airports and several domestic airports. The ginger industry can greatly benefit from the available and increasingly advancing air transport facilities in the country and the region by transporting high value ginger produce to local, regional and international markets.

CHALLENGES

- I. High freight charges compared to other competitors in fresh produce trade.
- II. Lack of landing rights for many airlines.
- III. Multiple taxation of agricultural produce at the airport cargo terminals.

PROPOSED INTERVENTIONS

- I. Government will work with all other Federal Agencies to ensure smooth export of fresh ginger via the Kaduna International Airport by removing existing bottlenecks around multiple taxation, multiple inspection etc
- II. Encourage farmers and exporters to use the Kaduna Airport as the preferred destination for exporting Fresh ginger
- III. Government should explore partnership with Air cargo companies who will be picking up fresh ginger exports at intervals
- IV. Efficiency in the provision of air transport services will be enhanced and efforts will be made to reduce the cost of jet fuel and handling costs.
- V. The Government will endeavour to increase cargo space and allow more airlines landing rights.
- VI. Government will harmonise the role of agencies at the Cargo ports to reduce over taxation of agricultural produce.

Market Infrastructure

Farmers, traders and consumers are faced with the problem of inadequate physical market infrastructure. Where they exist, such markets are inappropriately constructed, underutilised, in disuse, congested, disorganised and have poor sanitary conditions. In addition, the market facilities do not separate retail and wholesale sections, are overstretched and do not have adequate security. The current trend of increase in urban population, with more people entering middle income level and demand for quality fresh produce has exerted pressure on existing markets facilities in cities and demand for appropriate market structures. There are initiatives to construct wet markets in many communities in the Kaduna N-CARES project. Furthermore, there is need to invest in mega wet markets for ginger produce with storage facilities.

CHALLENGES

- I. Inadequate and poor ginger market infrastructure which compromises produce quality and hygiene leading to high levels of post-harvest losses.
- II. Inadequate storage facilities, water, electricity and telephones services leading to deterioration of produce quality and high losses in the markets.
- III. Sale of produce in undesignated locations and sections of markets leading to congestion.
- IV. Levies and cesses collected are not used for market development and maintenance.
- V. Lack of an appropriate framework for the private sector to invest in development of ginger markets.
- VI. Inadequate social amenities and poor hygienic conditions in most fresh ginger produce markets.
- VII. Most markets do not have distinct wholesale and retail sections.
- VIII. Lack of space for development of major fresh produce markets.

PROPOSED INTERVENTIONS

- I. The Government will undertake coordinated development of markets by relevant ministries, local authorities and stakeholders to ensure construction of appropriate fresh produce markets; and effective management by the private sector.
- II. Public-private partnership involvement in development and management of markets.
- III. Investors will develop designated wholesale and retail markets and fabricate hygienic kiosks for retailing fresh ginger produce.
- IV. Investors in collaboration with Local Authorities will initiate efforts to ensure that Levies collected from the markets is used for market development and maintenance.
- V. Private sectors will ensure that the social amenities and other market facilities are constructed and are kept in hygienic conditions.
- VI. Market operators will allocate space for fresh ginger market development.
- VII. Investors with the approval of relevant government agencies will construct mega ginger produce markets aggregation area with storage facilities.

Produce Storage Facilities

Currently, inadequate modern ginger storage facilities force the farmers in Kaduna state to sell their produce immediately after harvest at low prices. The private sector has built storage facilities in some communities where they have investments. However, this is not enough to take care of the huge ginger produce that are taken to the market daily.

CHALLENGES

- I. Inadequate modern ginger storage facilities for domestic and export markets.
- II. High cost of construction and maintenance of modern ginger storage facilities.
- III. High post-harvest losses and reduction in quality of ginger produce due to inadequate modern ginger storage facilities.
- IV. Inadequate and inappropriate collection centres.

PROPOSED INTERVENTIONS

- I. Encourage Private sector investment in modern ginger storage facilities.
- II. Establish Public–private partnerships to develop modern ginger storage facilities.
- III. Stakeholders will develop guidelines for promoting and managing collection centres.

LEGAL, REGULATORY AND INSTITUTIONAL FRAMEWORK

The policy objective is to improve service delivery through effective and efficient legal, regulatory and institutional framework. The focus will be on harmonising the roles of the various institutions and stakeholders, reviewing statutes governing the ginger sector to ensure they are in tandem with the needs of the industry, strengthening ginger commodity associations and enforcing the legal requirements.

Legal and Regulatory Framework

At the moment, there is in existence the Kaduna Agricultural Development Agency (KADA) Law 2016 with the mandate to implement agricultural policy and development program in the state. The current legal and regulatory frameworks that will govern the ginger industry is yet to be enacted. The Kaduna State Ginger Investment Policy and Strategy (GIPS) will need to be backed by regulatory institutions established through subsidiary legislation. The mandates of these institutions are critical to the development and commercialization of the ginger industry and therefore need to be strongly anchored in law. A Bill to back GIPS should be proposed to be entrenched through the consolidated legal and regulatory reforms in the agricultural sector by the state parliament.

CHALLENGES

- I. There are no current legal and regulatory frameworks that will govern the ginger industry enforce sanitary and phytosanitary measures, environmental standards, pesticide use, labour laws, ethical trade practices and public health, among others, in the local market.
- II. The establishment of key government regulatory institution under subsidiary legislation that does not confer adequate legal mandate as is the international norm.
- III. Inadequate funding of KADA.

PROPOSED INTERVENTIONS

- I. Enact relevant Act of parliament to empower GIPS implementation to enhance its enforcement of laws and regulations.
- II. Undertake regular reviews of relevant statutes and subsidiary legislations to match the changing needs of the ginger industry.
- III. Establish the Ginger Fund.

Institutional Framework

Public institutions established under various acts have a state-wide mandate on various regulatory aspects with a view to improving service delivery. KADIPA, Ministry of Agriculture and Kaduna Agricultural Agency are the leading agencies responsible for managing agro related investments and projects in the state.

CHALLENGES

- I. Inadequate legal provisions that entrench the competent authority structure for the ginger industry.
- II. Inadequate resources for institutional operations.

- III. Weak and ineffective linkages among public and private institutions that undertake regulatory, developmental and support functions resulting in inefficiencies in the industry.

POLICY INTERVENTIONS

- I. A clear framework to enhance inter-institutional coordination will be established.
- II. The Government will review the legal and regulatory framework in order to entrench the current competent authority structure for the ginger value chain.
- III. The capacity of relevant institutions will be streamlined and enhanced through public–private partnerships to improve service delivery.
- IV. Stakeholder organizations and institutions will be strengthened through enhanced linkages and partnerships among players along the value chain
- V. Creation of the office of Special Adviser to the Governor on Ginger as well as Ginger Investment Officer at KADIPA

INDUSTRY SUSTAINABILITY

The policy objective is to secure the industry's sustainability that may be compromised by social, environmental and economic factors. The focus on economic aspects includes enterprise suitability mapping, taxes, fees, levies, infrastructure, product competitiveness, high cost of energy and transportation; while focus on social issues are corporate social responsibility, capacity development and compliance with labour laws; and environmental management.

Environmental Sustainability

The management of ginger crop residues of Kaduna State appears inefficient given the multiple benefits they could otherwise provide. The current management option is not perfect and the existing framework to ensure adequate management system and the collection facilities is not available. Crop waste is still collected without separation at the source, treatment facilities are limited and the collected waste is mostly dumped haphazardly in open areas or in most cases burnt before the next farming season.

The expected gains from enhancing ginger value chain productivity, agro-processing, access to markets, and improved post-harvest handling (including packaging) are bound to lead to increase in environmental management in the ginger processing areas. Possible negative social impact that could result is localized and site-specific, which can be mitigated relatively easily. Additional potential adverse social impact could be the loss of access to common resources (such as land) due to shifting from certain earlier activity to large ginger farm and/ or processing factory. Others could be lack of consultation with stakeholders in the ginger value chain host communities.

The development of an Environmental and Social Management Framework (ESMF) will ensure that ginger value chain activities will have no negative environmental impact, and will take minimizing measures in case of any adverse impact which will includes details of a series of measures to reinforce the capacities of involved institutions, and ensure that appropriate mitigation measures will be in place for each activity:

- a. recruitment of full-time environmental specialist and social and livelihood expert, responsible for screening of activities and drafting of Environmental and Social Mitigation Plan (ESMP);
- b. realization of an Environmental and Social Assessment (ESIA) for all activities with substantial environmental and social impact;
- c. capacity building and training of all stakeholders involved in the ginger value chain on ESMP;
- d. organization of ESMP meetings among ginger value chain stakeholders;
- e. activation of an Environmental and Social Manual of Procedures;
- f. address complaints of environmentally adversely effected communities and individuals.

CHALLENGES

- I. Ginger production intensification involving the use of inputs, could potentially have adverse impact on soil, water and vegetation covers;
- II. Possible site-specific potential adverse impact may be caused by the use of agricultural chemical inputs (fertilizers, pesticide, insecticide, etc.) and small civil works. The adverse impact could include contamination of soils and surface water, waste generation, dust pollution, disruption in natural habitats, and groundwater contamination because of runoffs;
- III. Natural habitats -The implementation of support services to ginger processing plants such as extension of electricity transmission lines and installation of gas pipelines might pass through important natural habitats such as swamps and marshes;
- IV. Solid waste from processing plants adversely affects host community and individuals socio-cultural and environmental life;
- V. Pest management: In enhancing ginger value chain productivity, which will most probably involve the use of new technologies and inputs such as pesticides.
- VI. The continued sub-division of land into uneconomic parcels.
- VII. Degradation of water catchment areas and declining water resources.
- VIII. Degradation of the farmland.
- IX. Unpredictable weather due to climate change and global warming.
- X. Pollution by industrial effluent.
- XI. Poor garbage disposal in fresh ginger produce markets.

PROPOSED POLICY INTERVENTIONS

- I. The government will activate Environmental Assessment Policy;
- II. NGOs, CBOs, Development partners will proactively and systematically ensure the participation of women in all activities that enhance equal opportunities and reduce imbalanced outcomes;
- III. Stakeholders will activate agricultural waste recycling/ reuse activities in the ginger value chain productivity communities;
- IV. Investors will facilitate improve crop residue management in the ginger value chain productivity area;
- V. Intensify mass literacy programmes on the economics of crop residue management for all levels of ginger value chain productivity;
- VI. Prepare an Integrated Pest Management Plan (IPMP) for ginger farmer's cooperative societies to include application of integrated pest management (IPM) practices, application and promotion of integrated pesticide management practices outlined in the guidelines of the International Code of Conduct (ICC) on the Distribution and Use of Pesticides, and risk management for transgenic crops through the national bio-safety framework and international best practices.
- VII. Activate measures to avoid displacement of communities and individuals. However, in case it becomes necessary, compensatory mechanism will be activated for affected communities or persons meeting eligibility criteria.
- VIII. The government will enhance environmental conservation and measures to mitigate the effects of climate change and global warming.
- IX. The Government will enforce anti-pollution regulations.
- X. An appropriate waste management system in fresh ginger produce markets will be developed.

Economic Sustainability

There are multiple taxes in the ginger industry. Most of the taxes are levied on transit and at the point of entry to the market. Financial services are limited and not readily available to the majority of smallholder farmers. In addition, there is limited awareness of insurance products for ginger enterprises.

CHALLENGES

- I. The domestic commercial ginger market is characterized by poor infrastructure (roads, physical markets), low quality standards, and negative attitudes by local consumers for certain export-based products.
- II. Multiple licenses, levies, fees, cesses and other charges increase the cost of doing business.
- III. High cost of energy and transportation, poor quality seed and planting material, disease and pests, and inaccessibility to markets.
- IV. Low adoption of appropriate and affordable technology among small operators.
- V. Inability of existing technical capacity to cope with the changing technological needs of the industry.

PROPOSED POLICY INTERVENTIONS

The Government will:

- I. Step up initiatives to develop fresh produce markets in strategic locations.
- II. Harmonize taxation regimes in the industry and provide incentives for investors.
- III. Ensure produce is only taxed at the point of entry to local market or point of exit for export.
- IV. Continue to be proactive in both bilateral and multilateral trade negotiations to ensure favourable trading regimes.
- V. Institute measures to reduce the cost of energy as well as exploit alternative sources, especially of renewable energy.

Social Sustainability

In the Ginger industry in Nigeria, there are around 300,000 ginger farmers. In Kaduna state alone there are about 21 ginger farming clusters and 353 sub-clusters across 10 local government areas, with a total of 62,952 ginger farmers and half of ginger farmers are between the ages of 43 and 62, indicating a fast-ageing sector. Only 15 per cent are below the age of 30, again signifying the need for more youth inclusion in the sector. While the production phase of ginger farming is dominated by men, the processing part is dominated by women. About 85 per cent of ginger-producing households have a family size of up to 10. , NEPC estimated that over 5,000 SMEs with under 500 employees are active in the ginger value chain.

The industry is dynamic and requires specialised services to cope with changing needs. Smallholder farmers who provide the bulk of the produce are comparatively less endowed with the necessary skills. There is low enrolment in agriculture-related courses in local universities and colleges. Comparatively, the agricultural sector has lower wages and there should efforts to ensure corporate social responsibility in the industry.

CHALLENGES

- I. Inadequate technical skills in ginger among public technical staff and smallholder farmers.
- II. Agriculture curricula in institutions of higher learning do not meet the needs of the ginger industry.
- III. Inadequate staffing levels to provide effective extension services.
- IV. Low enrolment of students for agricultural courses in institutions of higher learning.
- V. Uncompetitive wages for workers in the industry.
- VI. There is low adoption of the principles of corporate social responsibility (CSR).

PROPOSED POLICY INTERVENTIONS

- I. Partnerships development among research, universities, extension service providers, private sector and other industry players that effectively address the emerging technological and quality requirements of the industry.
- II. Universities will update curricula and training program to match market needs and develop agriculture training programs that are attractive to young people.
- III. Public private partner sector operators will enhance the provision of extension services and promote the adoption of appropriate technology.
- IV. The government will facilitate harmonization of wages across sectors.
- V. Private sector will undertake CSR that will benefit ginger producing communities

GENERAL ISSUES

The policy objective is to empower marginalised and vulnerable groups and be responsive to the changing environment in the ginger industry. The focus will be on gender equity, mainstreaming PLWD and HIV/AIDS awareness and prevention, encouraging youth in agriculture and curbing corrupt practices.

Gender

Gender inequalities and lack of attention to gender in agricultural development contribute to lower productivity, and higher levels of poverty as well as under-nutrition. The 2012 World Development report dedicated to Gender Equality and Development warns that the failure to recognize the roles, differences and inequities between men and women poses a serious threat to the effectiveness of the agricultural development. About 80% of the women ginger farmers are less than 50 years of age and the majority of them are not members of a cooperative society, while the average farming experience of the women is 19 years with an average farm size of 1 hectare and they finance their production through personal savings. The women ginger farmers attested to the fact that inadequate access to inputs, insufficient capital, high cost of labour, poor storage facilities and shortage of extension visits are major constraints faced by the women ginger farmers. Employment in the ginger industry and work conditions discriminate gender, marginalised groups and persons with disability. Ginger processing activities is dominated by female farmers and yet proceeds are not equitably shared. Cases of sexual harassment, reluctance to accord women maternity leave, poor pay and poor work conditions have been reported.

CHALLENGES

- I. Inadequate access to inputs, insufficient capital, high cost of labour, poor storage facilities and shortage of extension visits are major constraints faced by the women ginger farmers.
- II. Low level of awareness on issues related to gender, marginalized groups and persons with disabilities.
- III. Laxity in enforcing gender-related labour laws in the industry.

PROPOSED POLICY INTERVENTIONS

- I. The government will set aside special pot to cater for access to inputs, capital, labour, storage facilities and regular extension visits for the women ginger value chain activities.
- II. The government will enforce the appropriate laws and promote the mainstreaming of gender and marginalized persons in management of the ginger industry in line with the constitution, and the gender and development policy.
- III. Private sector will establish structures to ensure access to resources and full participation in the entire ginger value chain by marginalized groups.
- IV. The Government will implement the Persons with Disability Act, and where they meet the basic qualifications, 5 percent of all recruited personnel will be persons with disabilities.
- V. Employers will develop communication systems to ensure that persons with disabilities access information.
- VI. Employers and government agencies will develop appropriate training packages and facilities that are accessible to marginalized groups.
- VII. Stakeholders will developed new approaches to target mind-set and behaviour change at all levels and encourage women into leadership roles.
- VIII. Employers will introduce labour-saving technologies for women and men; reduce the constant burden of carrying;

- IX. Policy dialogues on mainstreaming gender in the ginger value chain at multiple levels: parliament, institutions of learning, implementing agencies, districts and others;
- X. Young women will be deliberately brought on board into new opportunities coming up in the ginger value chain i.e. in storage, seed multiplication mechanisation.

PLWD, HIV and AIDs, TB, Malaria and other Water-Borne Diseases

Vulnerable groups, including people living with disabilities (PLWD) and HIV/AIDS, have limited access to ownership and control of finances and productive assets in the ginger value chain. Vulnerable groups are unable to effectively contribute to ginger production value chain growth, food security and nutrition. Closing the gender gap and addressing the socio-economic barriers faced by these groups has the potential to boost this sector.

Ginger value chain is labour intensive and therefore, continuous loss of workforce through HIV/AIDS is a threat to the development of the industry. Women are at a greater risk of contracting HIV/AIDS due to their disadvantaged social status. Reports indicate that HIV positive workers in Kaduna still face stigma and discrimination despite enactment of work place policies that outlaw such discrimination. There are efforts to implement the HIV/AIDS workplace policy in the industry but more needs to be done. Tuberculosis, malaria and water borne diseases are important diseases in the horticultural industry but that are also expensive to manage and cause economic losses due to absenteeism from work.

CHALLENGES

- I. Lack of facilities to meet the special needs of women, marginalized groups and persons with disabilities.
- II. Cultural perception that persons with disabilities cannot excel in their duties.
- III. Lack of appropriate training packages for persons with disabilities.
- IV. There is continued stigmatization and discrimination of persons living with HIV and AIDS in the industry.
- V. Low awareness of HIV/AIDS workplace policy among workers.
- VI. Reluctance of employers to accord victims special consideration as regards their status.
- VII. TB, malaria and water-borne diseases cause poverty and result in loss of productivity and life. They are also an economic burden to employing companies and to the Government as they are major obstacles to social and economic development.
- VIII. Most people living with HIV and AIDS are unable to access services and drugs due to uneven distribution of health facilities.

PROPOSED POLICY INTERVENTIONS

- I. The government will implement the Persons with Disability Act, and where they meet the basic qualifications, 5 percent of all recruited personnel will be persons with disabilities.
- II. Employers will develop communication systems to ensure that persons with disabilities access information.
- III. The government will ensure the HIV and AIDS workplace policy is implemented.
- IV. Public health officers will institute measures to create awareness on prevention mechanisms for these diseases.
- V. The government with stakeholders will facilitate accessibility of health services.

Youth in Ginger

The youth (age of 15-40) at present, constitute about 60% of Nigeria's population and have over the years made sufficient contribution to national development. Youth are major clientele group needed in the ginger value chain transformation in Kaduna State. There is high involvement of youths in the ginger value chain production in Kaduna State. However, there are some socio-economic factors which have negative effect youth involvement in the ginger value chain production, such as level of education, age, household size and level of income.

Major constraints militating against youth involvement in the ginger value chain production include inadequate capital, inadequate modern implement, and difficulty in accessing loan. These constraints are heightened by absence of functional and effective youth cooperatives that can enable them combine their resources together to:

- a. Employ more farm input;
- b. Access loan easily from agricultural and commercial banks;
- c. Serve as a link or access to workshops, training and seminars on a regular basis by the stakeholders such as the ADPS and Research institute;
- d. Engage extension services to increase their knowledge and skills in the ginger production value chain.

Ginger provides many employment opportunities along the various value chains, yet there is high rate of unemployment among the youth. This can be attributed to inadequate funding, lack of access to land, and negative perception of agriculture by the youth. In addition, the education system and social perceptions that agriculture is not well-paying drive away youth from agriculture. This has led to high rural-urban migration among youths in search of white-collar jobs and westernised lifestyles.

CHALLENGES

- I. Most youth do not consider farming as gainful employment and only get into it as a last resort.
- II. Youth have limited access to and ownership of land for farming.
- III. Some youth lack funds to invest in commercial Ginger.

PROPOSED POLICY INTERVENTIONS

- I. The government will provide incentives to the youth and involve them in different horticultural value chains by expanding innovative youth development initiatives and resources to cover the industry.
- II. Private sector will address factors that limit profitability of the sector to make it an attractive economic venture for the youth. Such activities will include integrating ginger value chain activities with other economic sectors like agro-processing, manufacturing and trade.
- III. The government collaboration with stakeholders, facilitate the introduction of Ginger teaching curricula in learning institutions to make it more relevant to the rapidly evolving Ginger industry.
- IV. Activate mechanisms to encourage formation of gender and youth cooperative societies and youth to access extension, inputs and technologies to improve productivity.

Integrity in the Industry

Operational malpractices are a threat to many sectors of the Nigeria economy including the Ginger industry. These malpractices result to high transaction costs, loss of market, lack of access to markets, uncompetitive produce, loss of produce and erosion of profits. The annual environmental audits have become routine and have not achieved the desired impact in assessing the level of compliance and effectiveness of mitigation measures.

CHALLENGE

- I. High incidences of input adulteration such as seeds, agrochemicals and fertilizers.
- II. Untruthful labelling of input packages and falsification of some trade documentation.
- III. Unregulated market agents who impede smooth operations in the industry. I
- IV. Likelihood of compromised environmental audit reports due to conflict of interest between paying clients and audit firms.

INTERVENTION

- I. The Government and the ginger industry stakeholders will enhance measures to promote integrity and curb malpractices at all levels of the horticultural value chains.
- II. The industry will establish and operationalize appropriate code of practices to deal with operational malpractices.
- III. The government will enhance inspection service and institute deterrent measures to curb adulteration and document falsification.
- IV. The Kaduna State Environment Management Authority will ensure all environmental audits are carried out professionally without compromise arising from conflict of interest.

APPENDIX I

Role Of Government Agencies in The Implementation of GIPS

Agency/Ministry	Role in Implementing GIPS
KADIPA	<ul style="list-style-type: none">• facilitate investments in the state by coordinating all the activities of MDAs in the business environment.• Champion the implementation of GIPS
Ministry of Agriculture	<ul style="list-style-type: none">• Champion the implementation of in conjunction with KADIPA, Support farmers through Agric extension services• work with Agric research institutes to develop new varieties of ginger
Ministry of Water Resources	<ul style="list-style-type: none">• Work with Ministry of Agriculture to ensure successful development and implementation of rural irrigation systems for ginger farming during dry season
Kaduna State House of Assembly	<ul style="list-style-type: none">• Enacting bye laws and acts to facilitate the successful implementation of GIPS across the state
Ministry of Business Innovation	<ul style="list-style-type: none">• Work with KADIPA to support investors while also promoting the best business climate for ginger farmers, investors and other stakeholders
Ministry of Women and Youth Affairs	<ul style="list-style-type: none">• Support the implementation of the gender and youth pillars of GIPS
KADGIS	<ul style="list-style-type: none">• Manage all land administration challenges and ensure smooth allocation of land for the setup of ginger processing plants and factories. Ensure the protection of farmers' land in the allocation of lands for industrial purposes to ensure that farmers are not denied the access to their lands while also making it possible for investors to secure access to lands for the siting of industrial complexes
Kaduna Chamber of Commerce & Industries	<ul style="list-style-type: none">• Work with KADIPA to ensure GIPS is promoted among members of the chamber and also members of Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture, (NACCIMA)

APPENDIX II:

Roadmap For the Implementation of GIPS

Kaduna State GIPS Implementation Roadmap

The success of the Kaduna State Ginger Investment Policy and Strategy largely depends on the implementation of actions by all the key actors involved. This roadmap provides a guide to the implementation of GIPS in Kaduna State.



APPENDIX III:

Important Stakeholders in The Ginger Value Chain

Government Institutions

Kaduna State Ministry of Agriculture: The Ministry is the lead agent in agricultural transformation in the state. The ministry provides overall policy, regulation and operational direction.

Other Government Agencies

Federal Ministry of Agriculture And Rural Development (FMARD), The Nigerian Export Promotion Council (NEPC), National Agency for Food and Drug Administration and Control (NAFDAC), Nigerian Investment Promotion Commission (NIPC) and National Agricultural Seed Council (NASC) are government agencies that play coordinating and regulatory functions.

NEPC is mandated to support the promotion, development and diversification of export. CBI and NEPC have worked together on an Export Competency Development Programme (ECP) involving 12 SMEs in the cocoa, cashew and sesame sectors. Through the ECP initiative,

CBI also trained NEPC officials on different aspects in these three value chains. In addition, CBI supported Market Awareness Mission and business-to-business (B2B) meetings with potential buyers organised in the EU. These involved the same 12 SMEs trained under the ECP initiative.

The **NASC** is charged with the overall development and regulation of the national seed industry.

The **NIPC** is charged with encouraging, promoting and coordinating investments in Nigeria.

NAFDAC regulates and controls “the manufacture, importation, exportation, advertisement, distribution, sale and use of food, drugs, cosmetics, medical devices, chemicals and packaged water in Nigeria”.

The **Standards Organisation of Nigeria (SON)** is responsible for setting quality standards and training personnel for quality assurance in Nigeria. SON has established two international standard laboratories where goods and products for export could undergo test. SON has specific quality standards for the ginger value chain.

The **Raw Materials Research and Development Council (RMRDC)** works together with the

National Centre for Genetic Resources and Biotechnology (NACGRAB), with **National Institute of Pharmaceutical Research and Development (NIPRD)**, as well as with other stakeholders, to develop the ginger value chain and its utilisation in various industries.

Private Sector Organizations

Main ginger associations and trade unions:

The National Ginger Association of Nigeria (NGAN) is one of the main recognised associations representing the interests of all ginger farmers in Nigeria.

The Ginger Growers, Processors and Marketers Association of Nigeria (GGPMAN) is an association that consists of stakeholders (i.e. producers, processors, traders and exporters) in Nigeria's ginger value chain. It claims that it has over 200,000 members from 33 states in Nigeria.

NGO partners working actively together towards making the production and trade of spices more sustainable.

IDH is already active in Nigeria in other sectors (e.g. oil palm, cassava, etc.). As noted during the validation workshop, there is interest from IDH to become active in Nigeria's ginger value chain. IDH has a pilot programme running with one ginger company, to support sustainable farming and post-harvesting practices.

International development partners According to local sources, the UK government will focus on the development of high potential pro-poor value chains including ginger through LINKS (i.e. 'Powering Economic Growth in Northern Nigeria'), a programme that aims to support the development of a "vibrant and diversified economy" in the three northern states, Kano, Kaduna and Jigawa.

The EU and GIZ will focus on the ginger VC through the Nigeria Competitiveness Project (NICOP) project, a four-year project (2018-2022) commissioned by the German BMZ and co-funded by the European Union under the West African Competitiveness envelope (total funding is EUR 11 million).

The NICOP initiative identified the following investment opportunities specifically for the ginger value chain: Further processing of ginger into additional products of Value addition at various stages of Products for cosmetic and food industries

The Netherlands is one of the biggest spice trading countries globally. During the interviews for this study, a number of Dutch traders indicated their interest in sourcing ginger from Nigeria. The Dutch Good Growth Fund could offer opportunities for importers to apply for funding to do business in Nigeria's ginger value chain. The Dutch FBK – the Fund against Child Labour (FBK: Fonds Bestrijding Kinderarbeid) – could also offer possibilities for Dutch companies involved in the ginger value chain in Nigeria, to ensure that child labour is addressed.

Banks And Other Financial Institutions

Ginger is one of the targeted commodities in **Central Bank of Nigeria (CBN)**'s Anchor Borrower Program. Other commercial banks and financial institutions, such as Bank of

Industry (BoI), NIRSAL and Bank of Agriculture (BoA), are also involved in providing loans to ginger farmers and processors in Nigeria.

The Nigeria-American Chamber of Commerce (NACC) is working with partners to promote export in some VCs including ginger (i.e. export commodities such as sesame seeds, ginger, cashew nuts and products, shea nuts/butter, as well as processed vegetable & food products).

Certification schemes NICERT-Ecocert is one of the certification schemes focusing on the ginger sector in Nigeria. Sector experts indicate that producers, processors and SMEs need technical assistance on the following certifications:

Good Agricultural Practices (GAP) / GLOBALG.A.P. standard: Organic production and/or certification for compliance to USDA (NOP)³¹ and EC 834/2007, 889/2008³² o Fair Trade³³.

American Spice Trade Association (ASTA); European Spice Association (ESA); Hazard Analysis and Critical Control Point (HACCP). International Featured Standard (IFS).