

# Industrial Cassava Processing - The Nigeria Experience

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**FIRST INTERNATIONAL CASSAVA CONGRESS  
MALANJE, JUNE 25th TO 26th, 2021**

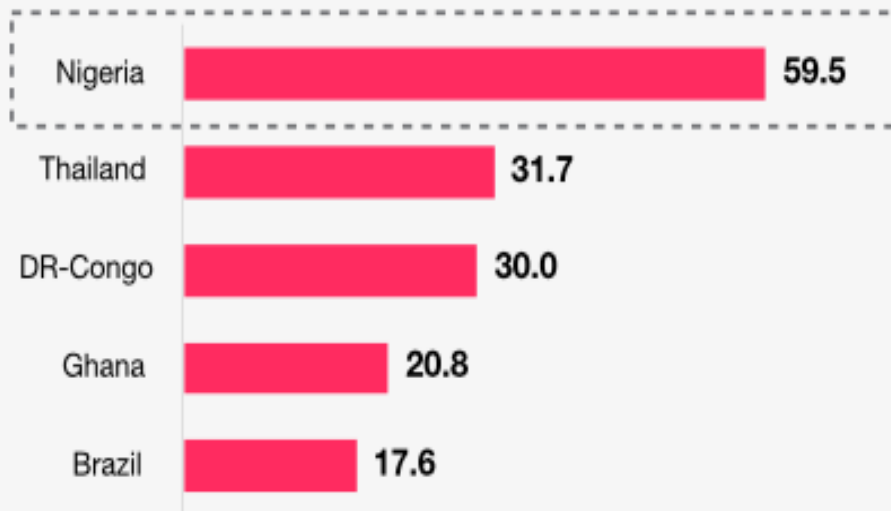


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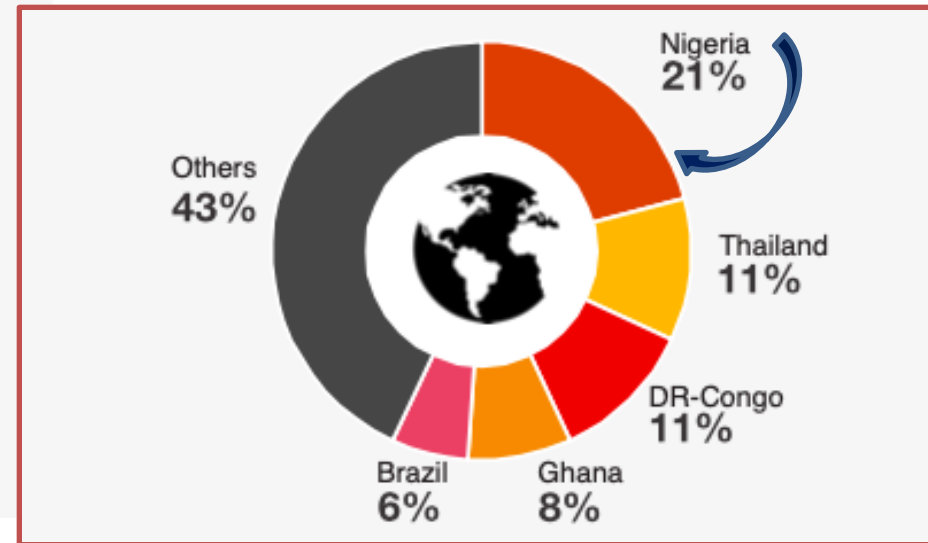
Knowledge for Development

# Introduction

- ❖ Nigeria is the largest cassava producer globally, accounting for about one-fifth (21%) of total production worldwide
- ❖ With 59.5 million tones of cassava produced in 2018, Nigeria maintained its top position in global cassava production



Top five cassava producers in million tones, 2018



Top five cassava producers (% global production in 2018)

# The Nigeria Cassava Industry

Nigerian cassava industry represents a multi-billion Naira Sector that has spurred rural industrial development, generated millions of new jobs, created wealth for over 45 million people and contributed to National Food Security

**Women dominate the individual/household processors.**

**They typically work in cooperatives or as laborers for SMEs.**



# TRADITIONAL AND INDUSTRIAL PROCESSING SYSTEMS

Most of the cassava harvested in Nigeria is processed into food to obtain gari, fufu, and lafun.

About 10-20% cassava produced in Nigeria is processed into industrial products such as ethanol, chips, syrups, starch and High Quality Cassava Flour (HQCF).

Nigerian processors can thus be categorized as follows:

Individual/household processors	Medium scale processors (SMEs)	Industrial processors
<ul style="list-style-type: none"><li>• Artisanal. Manual techniques and rudimentary technologies</li><li>• Often purchase cassava from smallholder farmers</li><li>• Process into food products for household consumption and few sales in open markets</li><li>• 95% of the processors' population</li></ul>	<ul style="list-style-type: none"><li>• Semi-automated techniques. New technologies</li><li>• Mostly cooperatives which process cassava into gari or individuals that source cassava food products from community-based processors</li></ul>	<ul style="list-style-type: none"><li>• Automated techniques and new technologies</li><li>• Predominantly integrated operations, with commercial cassava farms and automated processing equipment</li><li>• Process cassava into industrial starch, HQCF, ethanol, chips, and syrups</li></ul>

# Value addition from cassava in Nigeria

Farmers provide  
cassava



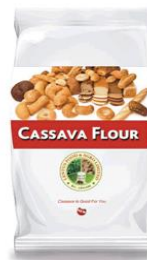
Industries add value to cassava



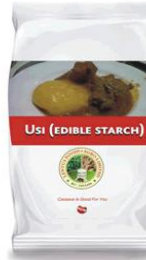
Garri, Lafun, Fufu etc.



Bread, Cake  
Candies  
Ice cream



HQCF



Starch

- Beverages
- Fuel Ethanol
- Animal Feed
- Pharmaceutic Products
- Furniture
- Paper & Wood

↗ Jobs

↓ Imports

↗ Food  
security

↗ Incomes for farmers

Investments in cassava processing factories in Nigeria has increased since the 1990s



Over 160 facilities processing cassava currently exist in Nigeria

However, actual **capacity utilization** < 20%



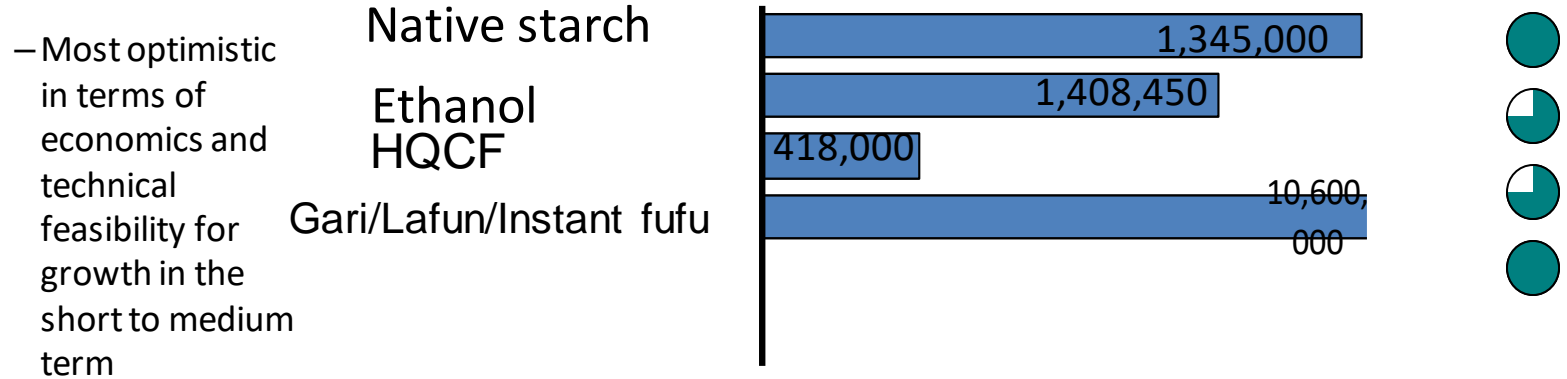
# Potentials of the Cassava Industries in Nigeria

○ Low feasibility

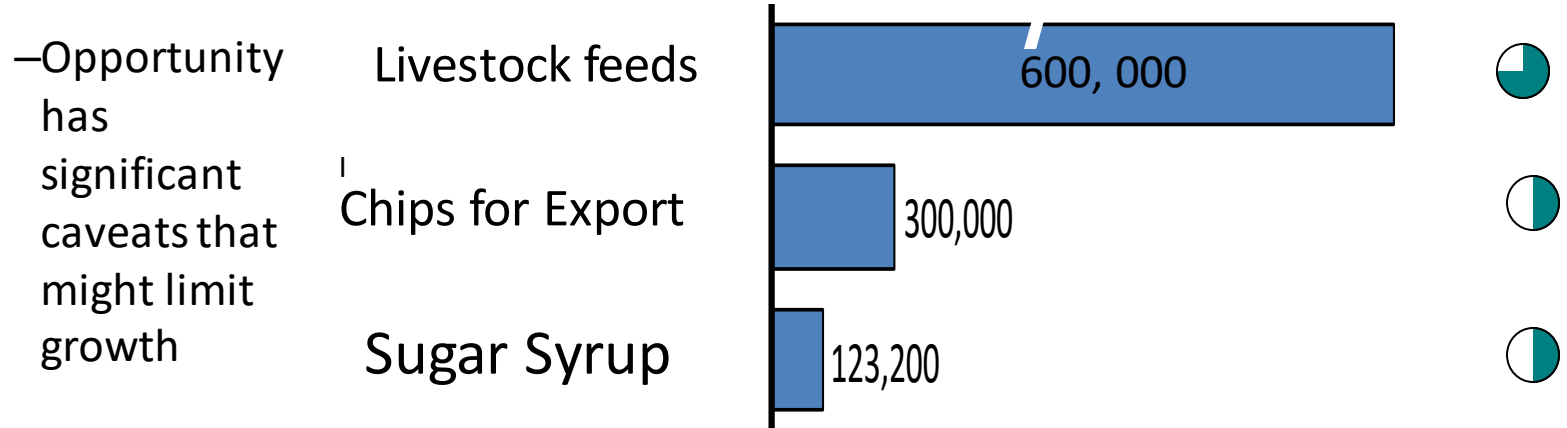
● High feasibility

**Definition**      **Opportunities**      **Potential Market Size (tons of roots p.a)**      **Feasibility**

High Potential

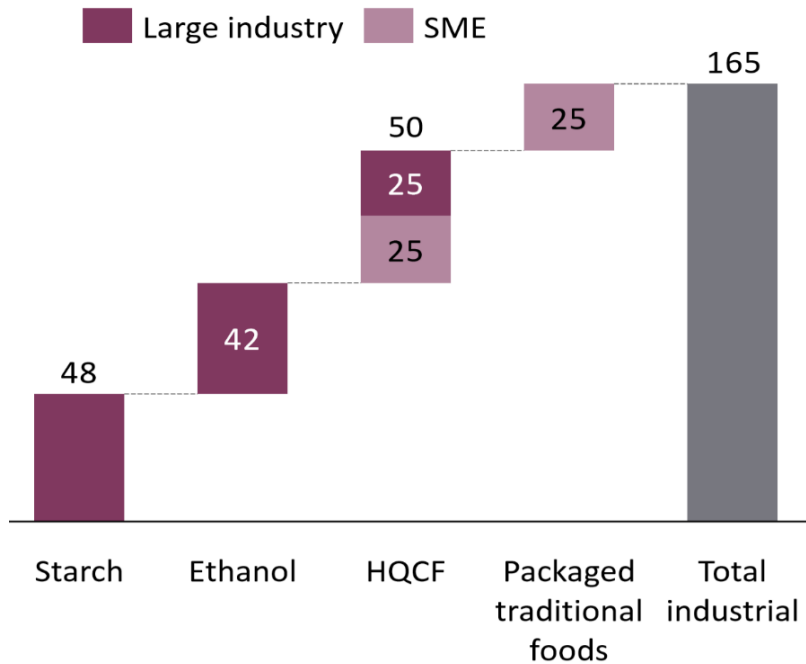


Medium Potential

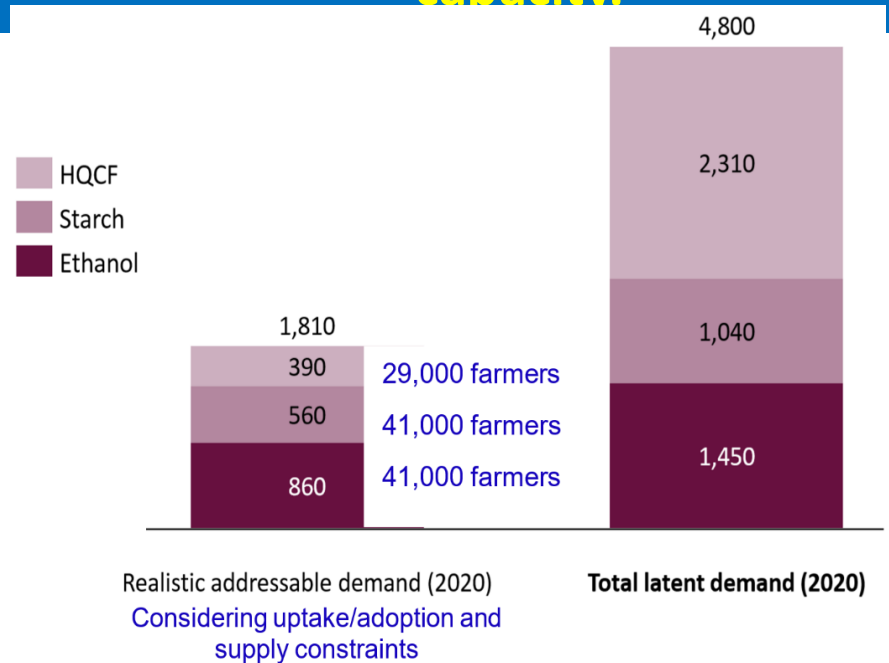


# Huge potential demand for cassava products

**\$300 - 400 million investment required in additional processing capacity.**



Estimated industrial cassava use in Nigeria, 2014 ('000 MT fresh cassava)



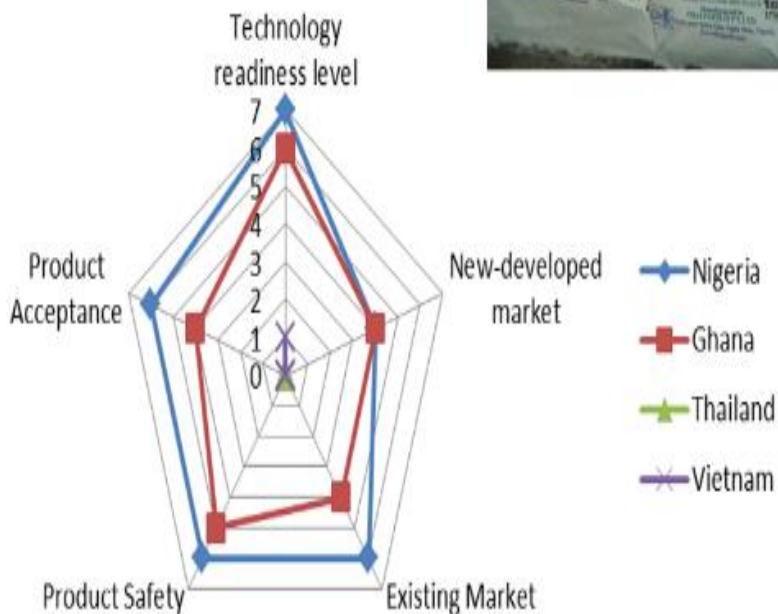
Estimated demand for industrial cassava use in Nigeria, 2020 ('000 MT fresh cassava)

# The Growth Initiative



# Inclusion Composite Bread Policy

## High Quality Cassava Flour



## High Quality Cassava Flour in Nigeria



# HQCF Strategy for import substitution

**Incentives for buy in**

**Awareness creation**

**Nutritional**



**Bread:** replacement of 10 to 20% wheat flour

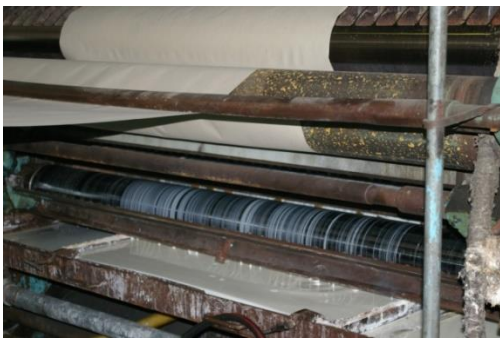


**Biscuits:** replacement of 20% wheat flour



**Sausage rolls:** replacement of 100% wheat flour / maize starch binder in filling

Aggregate Demand (t/yr)	
Current	60,000
Potential	504,500
Achievable	300,000



**Paperboard:** 100% replacement of maize starch in paperboard glue

**HQCF for home use i.e. pancake, puffpuff..**

# Starch Strategy

1.15 million MT cassava roots to substitute 50% imports

## Short Term (1-2 years)

- Increase raw material supply
- Promote investment in Starch industries & related public infrastructure.
- Promote Clustering & Out-grower schemes
- Develop R&D on varieties with higher starch content

13 additional Players to meet annual demand = \$

## Medium to Long-term (3 years and above)

- Promote large-scale factories using 100,000 – 500,000 tonnes of raw materials per day

**Domestic demand  
269,000 MT starch**



# Large Scale Cassava Factories in Nigeria

S/N	COMPANY	ADDRESS	CONTACT	PRODUCT
1	Psaltry International Company (Nigeria) Limited	Alayide-Wasimi Village, Ado-Awaye, Oyo State	Yemisi Iranloye 08028911415	Starch/HQCF & Sorbitol
2	Greentech Industries Limited	Agbara Industrial Estate, Ogun State	Ademola Akinode 08033698919	Starch
3	MATNA Foods Limited	Akure – Owo Expressway, Ogbese, Ondo State	Ayodeji Ibojiola 08054514010	Starch
4	Harvest Feed	Ajura, Via Siun, Obafemi Owode Local Govt., Ogun State	Goke Adeyemi 08028911416	Starch
5.	Crest Agro Farms	Lokoja, Kogi State		Starch
6.	Irede Starch	Sagamu-Abeokuta Way, Ogun State		Starch
7.	Premium Cassava (Thai Farms)	Ososa Ijebu, Ogun State		HQCF
8	Allied Atlantic Distilleries	Igbesa, Ogun State		Ethanol
9	Niji Foods	Ilero, Oyo State		HQCF and Starch

# Traditional Food Strategy in Nigeria

Most popular traditional foods from cassava

1 Garri

2 Fufu

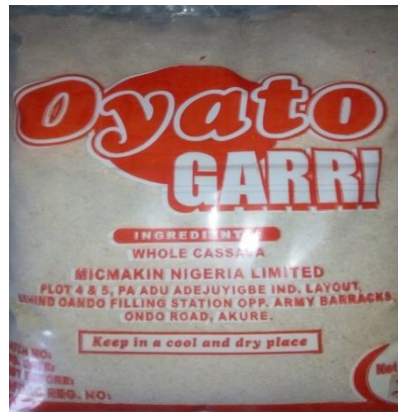
➤ Income Generation

➤ Job creation

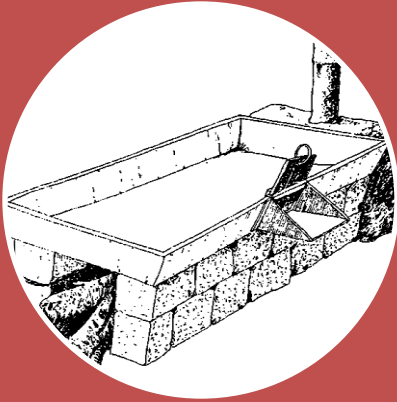


\$1.8 Billion Industry  
with 10 Million Tonnes  
cassava roots required  
for Traditional Staple  
Foods

Energy efficiency , Business linkages, Women professionals



# Evolution of Gari Processing Technology



Nigerian  
Made  
Technologies



Brazilian  
Technologies



Chinese  
Technologies



## Some of Nigerian Packaged Gari Small/Medium Scale Factories

S/N	COMPANY	ADDRESS	PRODUCT
1	Ocean Trans Limited	Iya Ibeji Village, Iseyin Oyo Road, Oyo, Oyo State	Packaged gari
2	Al Fawaz Agro & Farms	Ado-Awaye Road, Iseyin, Oyo state	Packaged gari
3	Kofo Agro Allied Limited	Iseyin-Ibadan Way, Iseyin, Oyo State	Packaged gari
4	Tosmat Foods Limited	Aladiye Village,, Iseyin-Oyo Road, Oyo	Packaged gari
5.	Premium Cassava Products Ltd. (Formerly Thai Farms International)	Ososa, Ogun State	Packaged gari
6.	Niji Foods Limited	Ilero, Ilero, Oyo state	Packaged gari
7.	Open door systems Ltd.	Akinleye Village via Iju Ebiye, Ota, Ogun state	Packaged gari
8.	Elkris Foods	Auchi, Edo state	Packaged gari
9.	Winosa Foods	Abavo, Delta State	Packaged gari
10.	Blopamed	Ijebu-Imuwen, Ogun state	Packaged gari

# Livestock Feed Industry in Nigeria



**Technology  
Development  
Animal Nutrition  
Sharing experience  
from Nigerian  
Companies and  
others in Brazil,  
Thailand**



**Cassava  
chips**

**Cassava  
Pellets**

**Cassava  
residual pulp**

**Cassava  
meal**

**Cassava peels, grits, chips are viable as animal feed and fish feed \***

**Given the large amount of aquaculture and Livestock done in the Nigeria, this could be an interesting prospective market**



**\* not necessarily viable for poultry feed**



# Development Projects Partnership and Collaboration





# Benefits of Industrial cassava processing in Nigeria

1. Improving incomes of SHFs,

SHF's yield and income increased . They had increased access to very good average price for FCR offered by Large Scale Processors.

2. Providing employment opportunities

More actors along the value chains engaged due to price attractiveness & increased activities along the chain and development of bulking agents

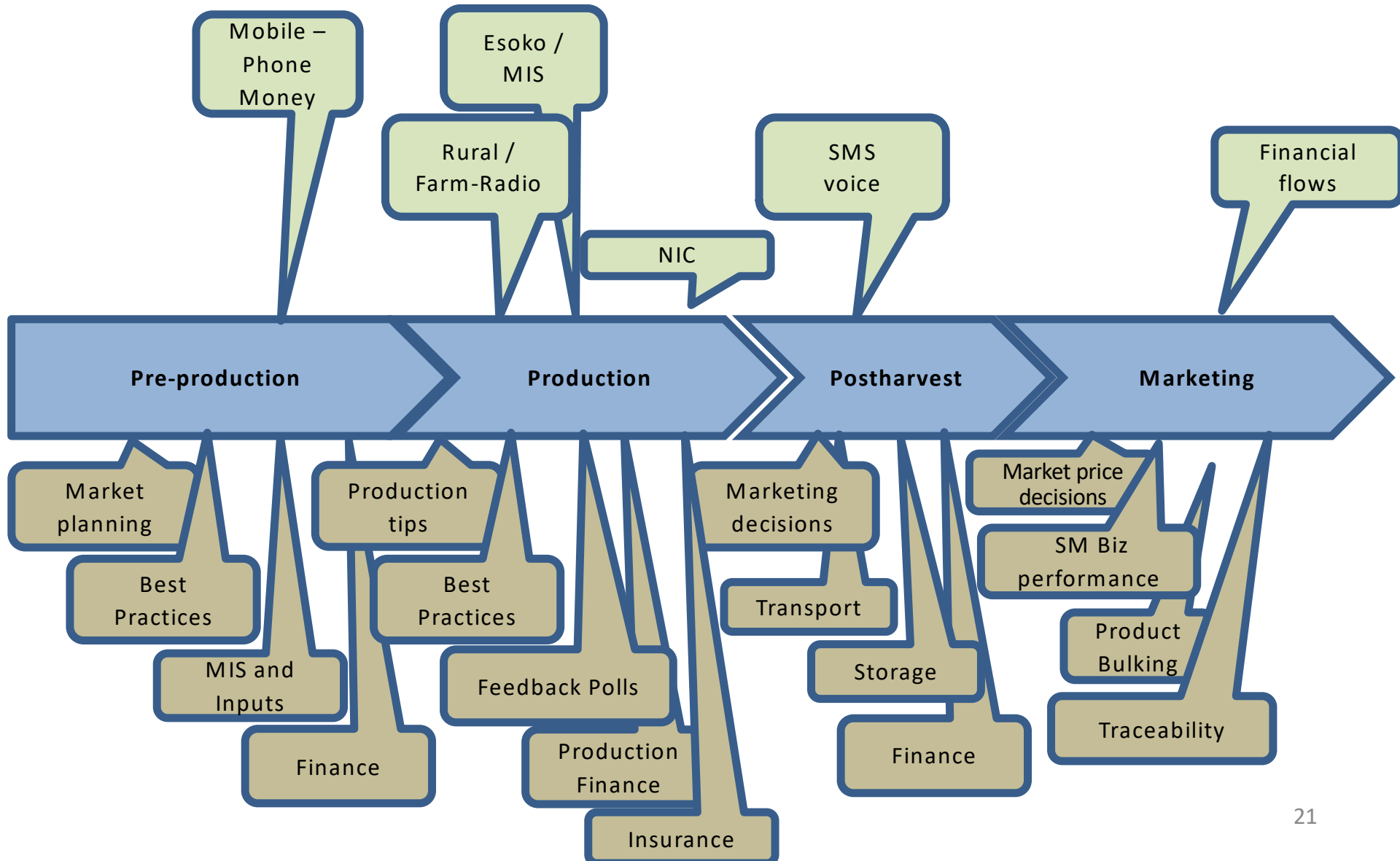
3. Improving balance of payments by reducing imports

Multinational FMCG companies now source food grade cassava starch locally and investing in R & D. Scarcity of Hard Currency & promotion of Export of cassava products.

4. Create demand for appropriate technologies

New SMEs are adopting the automatic garri roaster for packaged garri production and the NOBEX 6 – Cyclone Flash Dryer was procured for flour based production

# ICT in Cassava Value Chain- a gold mine



# Technological Innovations-Flash Drying Business

**Cassava**  
**SMEs**



**INSTANT FUFU**

## Innovation is important

•Development of Improved Flash Dryers for SMEs (2009-2016)

- Current 6 Cyclone flash dryer
- 2.92Mj/kg of HQCF
- Output ranging from 330-500kg/hr dependent on capacity of heat exchanger
- >90% reduction in costs for heat energy
- Developed solid-waste systems to replace diesel & kerosene

NOBEX Multi-cyclone Flash Dryer facilitated and promoted by C:AVA to Malawi, Uganda (2), Tanzania By World UDESWA: Ghana, Sierra Leone, Benin Republic & By IITA (6) to Liberia

BOI/CTAP also installed over 20 in various locations in Nigeria from 2014 to 2016.

Source: C:AVA Nigeria/Sanni, 2017



**CAVA II**

Cassava: Adding Value for Africa Phase II

# Business Models that Worked in Cassava Industrial Processing in Nigeria – The CAVA2 Experience

	Business Model	Examples
1	Stand-alone SMEs Producing, Processing and Marketing FCRs and cassava products	SHFs, Processors, and Foodstuff Sellers in farming communities and local markets
2	Organised SHFs and Large Farms Integrated to Industrial Markets	Farmers in CAVA 2 Project areas that were linked with processors SMEs Farmers & Processors Cooperatives
3	Input Suppliers and Agro-dealers	State ADPs and Agro-service Corporations; Notore Fertilizer Company in Nigeria, Syngenta, NOBEX in Lagos
4	Vertically Integrated Medium - Large Cassava Factories	Al Fawaz, Iseyin; Tosmat Foods, Soku; Niji Lukas, Ilero,; Trust Michael, Lanlate and Kofo Agro Allied, Iseyin Thai Farms, AADL, Psaltry, Harvest Feed, MATNA, etc
5	Equipment Leasing and Financial Service Providers	State & Private Tractor hiring service BoI, BoA, Commercial Banks and Microfinance Institutions

# GROWTH CHALLENGES

- Government inconsistent policies
- Unstable foreign exchange rates/policies
- Destruction of cassava farmland by cattle herdsman
- Insecurity and communal clashes
- Lack of Basic Infrastructures
- Lack of Mechanized cassava plantation



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# Lessons Learnt

- Inappropriate credit facilities hinders expansion of cassava production and SMEs expansion
- Government inconsistent policy especially on HQCF is affecting the HQCF market
- Lack of regulated prices affects processors.
- Bad road network hinders transportation of produce to the market
- Securing of NAFDAC registration is cumbersome and also with other regulatory agencies

# ROAD MAP TO GROWTH!

- ❖ Strategic adoption of Cassava as an African crop
- ❖ Ensure the consistent raw material supply to end user industries
- ❖ Stimulate increased private sector investment in the establishment of cassava industries
- ❖ Facilitate the establishment of targeted support infrastructures
- ❖ Advocate for conducive policy and institutional reforms for the development of the African cassava sector.
- ❖ Promote result based funding of extension services
- ❖ Collaboration among Cassava Based Projects on the Cassava Industry Development Goal.
- ❖ Mechanization of cassava production



*Thank you for  
your attention!!*



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