

# Gary Revolution

## Diffusion of Industrial Gari Processing in Nigeria

By

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# Gari .....

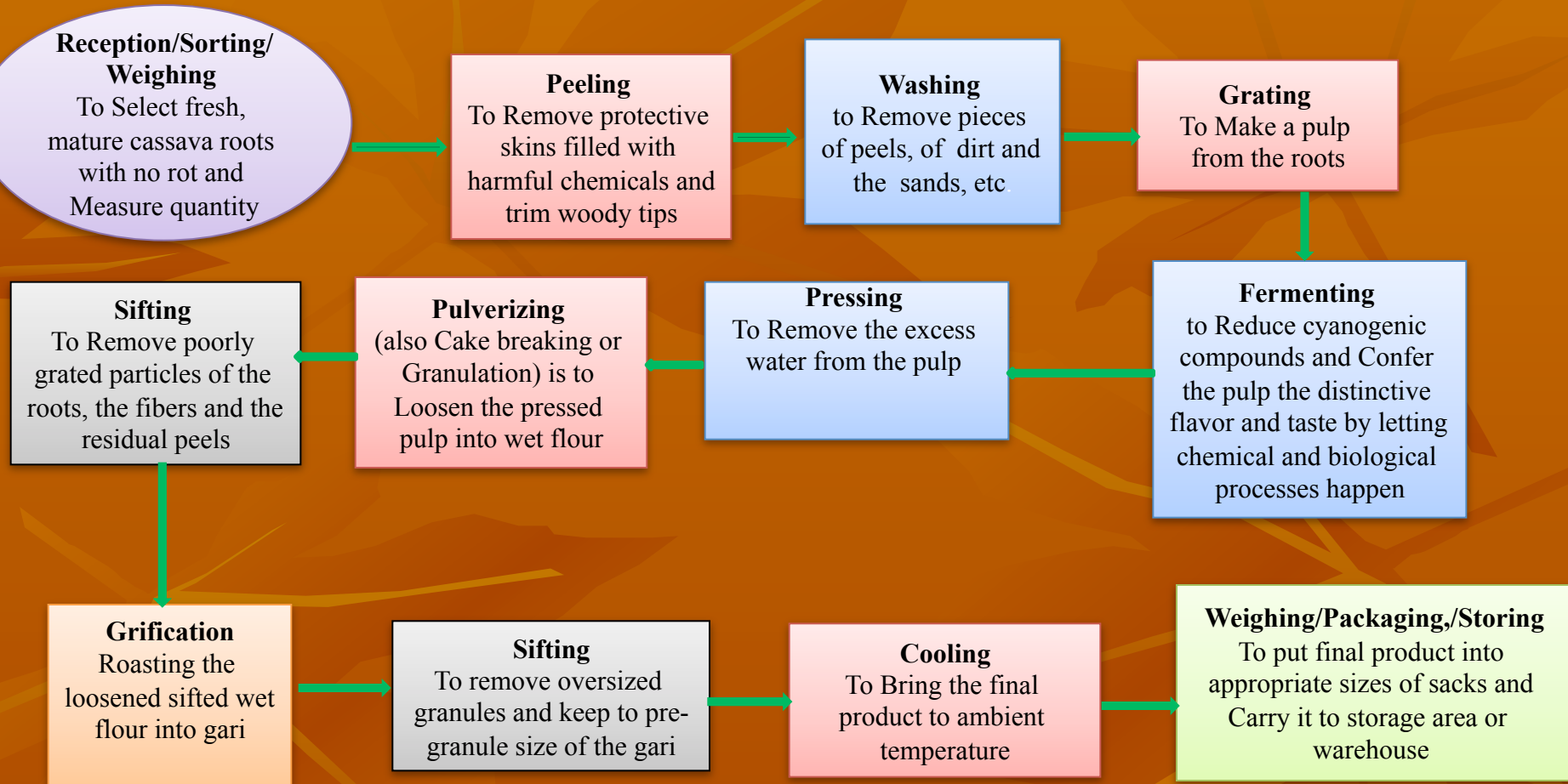
- Gari: a creamy-white, granular flour with slightly fermented flavor and sour taste;
- Made from Cassava Roots;
- Has been present in Nigeria feeding habits from the time cassava was introduced in the 15<sup>th</sup> century;
- It is now, the most popular food item in Nigeria; 72.5% of the 54 million cassava roots yearly produced by Nigeria, goes for gari production (40 million tonnes). It is being consumed in other parts of the world now.

# Gari Consumed in Different Forms

- **Commonly consumed: Soaked in cold water with sugar, coconut, roasted groundnuts, dried fish; or**
- **Turned into Paste (Eba) with hot water and eaten with different vegetable sauces;**
- **Boiled without or with Cowpea as complement;**
- **Gaining ground in international markets with West and Central Africa viewed as the main producers and exporters;**

# Process Chart for Gari Production

*12 Steps all fully mastered*



## **Experience and Contribution of IITA to Gari Processing in Nigeria**

- 48 years, of Activity in Post harvest Matters;
- Played key role in upgrading African traditional Post Harvest Technologies and gari production in particular;
- Introduced a lot of machines and processing outfits;
- Teamed up with many organizations;
- IITA's work did not stop at just designing machines and constructing prototypes but included the use of the proven prototypes to establish hundreds processing enterprises in Nigeria and in Africa.

# The Road So far

- Improving Traditional Technologies Through IITA's Own Efforts and With Supplements From Partners: PEELING



# The Road So far

■ Improving Traditional Technologies Through IITA's Own Efforts and With Supplements From Partners: GRATING/CHIPPING/Others S/R



# The Road So far

- Improving Traditional Technologies Through IITA's own efforts and with supplements from Partners: FERMENTATION





# The Road So far

■ Improving Traditional Technologies Through IITA's own efforts and with supplements from Partners: PRESSING/DEWATERING



# The Road So far

■ Improving Traditional Technologies Through IITA's own efforts and with supplements from Partners institutions: SIFTING/SEIVING (both wt and dry)



# The Road So far

■ Improving Traditional Technologies Through IITA's own efforts and with supplements from Partners: **FRYING/ROASTING/GARIFICATION**



# Mechanizing Increases Output

<b>P/N</b>	<b>Post Harvest Activity</b>	<b>Output using Manual Forces [Kg/hr.]</b>	<b>Output using Manually powered Machines [kg/hr.]</b>	<b>Output using Motorized machines [Kg/hr.]</b>
<b>1</b>	Peeling of Cassava	20 to 50	N/A	Up to 750 to 5000
<b>2</b>	Grating of Peeled roots	>20	Up to 90	1,200 to 3000
<b>3</b>	Pressing of grated cassava	N/A	250	up to 3000
<b>4</b>	Pulverizing	30	N/A	Up to 3000
<b>5</b>	Sifting	60	300	up to 1000
<b>6</b>	Frying	N/A	60	From 100 to 200
<b>7</b>	Milling	N/A	N/A	From 200 to 1000

# The Diffusion of These Technologies

- A lot has been achieved but all of it **was demand driven**:
- For example, using 3 different approaches, under various programs including: CMD/CEDP; IITA/WASCO; AfDB\_CBARDP, SAPEC etc., IITA built and equipped over **1000 Cassava processing centers in 12 States**, reaching over a 400,000 Families in Nigeria and in **20 African Countries**;
- New Cassava Food products a-part from Gari, Lafu, Fufu have been introduced;
- **Fortification and Standardization** of the earlier food items is going on;
- IITA introduced machines and cassava processing lines to over **20 African countries**;

# The 3 approaches

MPC 1



MPC 2



MPC 3



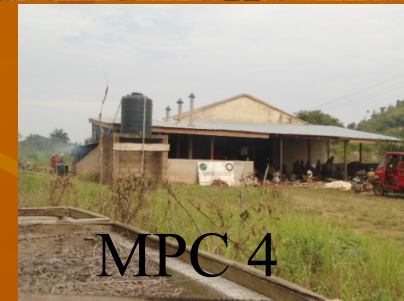
SME 1



SME 2



MPC 4



CRC 1



Storage of gari produced in MPC



Mobile Processing Unit



# The Diffusion of These Technologies

- From 1556 to date, much has been achieved. **All was demand driven.**
- Post harvest - greater opportunity in the Value Chain;
- No need to lease land, wait for 60 days or 12 months to get your reward;
- No need to buy machines; You go to processors or wait at your doorstep the mobile (P/Harvest) **Service Provider**;
- Everybody gets a reward with the IITA specially designed Post harvest machines. They are flexible (stand alone, fixed or mobile); motorized or manual; They are sturdy, easy to operate and to maintain, can be pushed by hand or put on a bike too. In addition, IITA has developed efficient machines for fixed enterprises of small to high capacities.

# IITA Set of Services to the Gari Industry

## FOR FABRICATORS

- Machines Design support;
- Machines Development, Evaluation and Testing Supports;
- Support for Improvement of their fabricated machines;
- Training in machine fabrication and maintenance;



# IITA Set of Services to the Gari Industry

FOR OPERATORS/OWNERS OF GARI PROCESSING OUTFITS  
FOR NGOs, FOR DONORS, etc.

- **Refurbishment** of old gari production enterprises;
- **Feasibility Studies** for establishment and operation of gari production enterprises;
- **Design and Construction** of new Gari processing enterprises;
- **Integrated Studies** for improvement of operations;
- **Training** in machines operation and maintenance for technicians.



.....*THANK*  
*YOU*