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SOCIO-ECONOMIC IMPACT OF CASSAVA PROCESSING IN AFRICA

Cassava is one of the world's most important food crops, with annual global production of approximately 276 million metric tonnes (MT) in 2013. African countries account for the majority of global production, at approximately 158 million MT (57%) in 2013. Nigeria is the world's largest cassava producer, at an estimated 53 million metric tons in 2015. Production has been growing at an average of 4% per year over the last 10 years. Nigeria's production accounts for 19% of the total global output of cassava with an estimated 30 million farmers who are involved in the cultivation of cassava. Unfortunately, despite the huge production of cassava, Over $600m worth of cassava products (flour, starch, glucose and animal feed) are imported because cassava production in Nigeria is largely done at subsistence level with the local market/human consumption using up to 90% of the total cassava production shown below.

Yield per Hectare by Country

Country	**Total Area (HA)**	**Yield T/ha**	**Total Production**
Nigeria	5,325,340	10	53,325,340
Brazil	1,773,000	14	24,354,000
Indonesia	1,182,600	20	23,908,500
Thailand	1,168,450	19	22,005,700
DRC	1,854,750	8	15,049,500
Ghana	875,013	15	13,504,100

Multi-Purpose Uses of Cassava

Cassava uses is divided into two: Food and Industrial Uses**.** Cassava is grown in several states of the country most especially for food like Garri, fufu, tapioca. Other uses are:

- Cassava Chips
- Cassava Starch

- Cassava Flour
- Cassava glucose or fructose etc

The table below shows the national demand for industrial cassava derivatives, the current supply and the potentials for Fresh cassava roots that can be utilized.

Products	**Annual Demand (MT)**	**Current Supply**	**Fresh Cassava Roots**
Starch	269000-300000	20,000-40,000	1.3million-1.8million
HQCF	504500	60,000	1,778,000
Ethanol	200million	9million	8,000,000
Glucose Syrup	90000	0	123200

Socio-Economic Impact- Psaltry a case study

Alayide Village is a small community espousing several hamlets 30km from the ancient town of Iseyin, Oyo-State, Nigeria. Prior to 2012, Cassava was their major crop but farmers had no motivation in expanding their farms into commercial scale. Apart from the fact that scaling up their farms was capital intensive, the ones produced had not ready market and when there produce are sold at low prices far below the breakeven point. Psaltry started outgrowers program in 2012 to address the aforementioned challenges and also for raw material sustainability and quality. The impact in a short while in the rural community cannot be overemphasized.

Increase in Livelihood: The income of the farmers has increased, as a result of the intervention of the company on their business. The average size of the farmers in 2012 was an acre and currently it is about 3 hectares.

Increased in GDP: The Gross Domestic Product of the community and surrounding environment has increased by more than $5m in the last 4 years through

Forex Savings: Psaltry has saved the country more than $15m in her 4 years of production. This is the amount that would have been used for importation.

Direct and Indirect Jobs created, Increase in Livelihood: Psaltry has employed more than 300 staff since its inception and thereby providing livelihood to several families**.** Prior to PIL's arrival there were only 4 trucks in the community of Ado-Awaye. There are now 250 trucks and more than 50 tractors in a community of 15,000 inhabitants. In the same period rents have increased from £1.5 per month for a room to £5.5 per month. From building mud houses the standard is now concrete houses. And many people can now afford to build them. Indeed, many residents are converting their mud houses to concrete houses that are stronger, safer and more durable

Corporate Social Responsibility: Psaltry has provided boreholes for two communities (Alayide and Wasimi), which is very significant in improving the health of the people because prior to the boreholes the community drank water from the same stream as they washed. And when the stream dried up during the dry season women had to travel long distances to get water. Access to electricity is also facilitated by the company. PIL also contributes to improving community roads and education. They provided computers to the oldest secondary school in the community to improve the quality of education.

Challenges

- **Raw Material:** Many of the processing factories in Nigeria experience dearth of raw material. Companies normally site their factories close to their potential customers rather than potential input supplier. Due to the perishable nature of Cassava, the produce suffer losses and reduction in starch content. Cassava ought to be processed between 24-36 hours of harvest for quality preservation. Secondly, the source of the raw material aggregated is not known but several varieties are mixed together in a truck: good, bad, rotten etc. Many farmers do not plant improved varieties but varieties that have low resistance to diseases, low starch content and rot easily. Being part of the cultivating business through outgrower model is key in mitigating this challenge. Distribution of relevant improved varieties can be achieved through grants.

- **Price Competitiveness:** Due to various potential output of cassava, it is extremely difficult to predict prices of cassava throughout the year. Unfortunately, for industrial cassava product, the potential buyers want a stable price for the year to help their planning and forecast. For the potential buyers also, there is imported corn starch that can substitute for cassava starch and hence, they benchmark their cassava starch price based on that of corn starch. For other cassava

derivatives like ethanol, garri, fufu, lafun etc, the customers are retailers and hence, the price of the cassava produce, no matter how exorbitant, can be transferred to the buyers. In an open market, industrial processors cannot buy beyond a certain price because of corn starch substitute; while the other buyers can buy at any price the sellers are offering since they will sell based on what price they buy. While the garri, ethanol buyers mob up the cassava on ground, the industrial processors are handicapped. A workable strategy should be used to mitigate this problem.

- **Quality:** Multinationals often complain about the quality of the indigenous product, most especially the presence of semolina and bacillus in the product. It has been discovered that bad water is used in the processes and thereby find a way of contaminating the product.
- **Perishable nature of Cassava:** Cassava spoils within 72 hours when not processed. Increasing the shell life of cassava is an herculean task. When there is machine downtime, the cassava purchased cannot be preserved, spoils and might be a huge loss to the company. There is a lot of research going on to increase the shell life of cassava by as long as 2 weeks.
- **Production Technical Downtime**: All starch factories equipments are wholly or partly imported. The equipments might not be totally suited to our local environment and conditions. Time to time, little adjustments have to be made to it to suit our needs. Some downtime is also experienced due to unavailability of spare parts which are not easily accessible in Nigeria except to be imported. Personnel training should be regularly done as well as both preventive and corrective maintenance. The spare parts need to be purchased ahead of time to mitigate the challenge of spare parts.

What next?

Paradigm Shift: For the nation to serve both local consumption and industrial consumption, effort must be made to increase the yield of the farmers. Increasing the yield of the farmers by 100% will help to supply both the local processors and industrial processors

Raw Material Strategy: Every company must have its own raw material strategy in mitigating the challenge of scarcity of raw material. Raw material sourcing is the most crucial aspect of cassava processing because of the volume and the quality required. This cannot be given to chances but must be deliberately, purposefully and reasonably planned and executed. Only then, can we have a situation where cassava for food will not compete with industrial cassava. Farmers planting without contract can target the opportunity that abound for food while farmers under outgrower scheme or

other schemes can be preserved for industrialization, so, there won't be conflict. The strategy must be inclusive of all actors within the value chain.