**STATUS AND POSITION OF CASSAVA PRODUCTION AND ITS ECONOMIC POTENTIALS: AN EMPIRICAL KNOWLEDGE**

**ABSTRACT**

The agricultural sector in Nigeria is the major employer which employs over 70% of the country’s labour force. The sector is characterised by small scale traditional farming methods with very low levels of mechanization and modern technologies leading to low levels of productivity. The growth in the agricultural sector has been slow, growing at an annual rate of 3.7% to 6.5% during the last decade, which is about half of the GDP growth rates. Cassava which is an important crop in the country especially in the southern parts of the country has great potential to support agricultural growth in Nigeria because of its wide range of use spanning from consumption to industrial use. Meanwhile, current research had shown that these economic potentials from the cassava derivatives are either lacking or that they are very low. The major reason is due to lack of value additions to the produce/products from cassava.

**Key words:** Cassava, production, economic and potentials

**1.0 Introduction**

Agriculture is a dominant sector of Nigerian economy. It accounts for about 70% of the economic activities of the country and employs about two-thirds of the Nation’s total labour force while contributing 19.79% to Gross Domestic Products [GDP] as at March, 2015. Specifically, the agricultural GDP is contributed by crops (84%), livestock (11%), fisheries (3%) and forestry (1%). Nigeria has diverse and rich vegetation capable of supporting a heavy population of livestock as well as 267.7 billion cubic metres of surface water as well as 57.9 billion cubic metre of underground water as reported by UNIDO (2016). It contributes 88% of non-oil earnings. Despite the huge potentials, Nigeria’s agricultural sector is faced with many challenges, prominent among which are absence of appropriate technology, low productivity, and lack of infrastructure, low level of input use, weak advisory services, post-harvest losses, poor access to markets and low level of finance.

Nigeria has one of the lowest usage rates of agricultural inputs, ranking at the bottom on agricultural indices where for instance: with respect to mechanization intensity it is 10 tractors per 100 ha compared to Indonesia with 241 tractors per 100 ha, Irrigation: 0.8% of arable land irrigated compared to Thailand’s 28% of arable land irrigated according to PIND (2017). Also, while Asia invested up to 16% of their national budget in agriculture, Nigeria’s investment in agriculture is a mere 2% of total government expenditure; even in the proposed 2022 budget of the country the agricultural budget there is only 1.8% of the total proposed budget.

As at 2015, the country ranks among the lowest consumers of fertilizer in the world. From researches done, it was found out that she was utilizing about 770,000 metric tons (or at the rate of 17kg/ha) of fertilizer as against an estimate of 3.7million metric tons. Small-scale farmers account for more than 90% of the total agricultural output with an average of less than two (2) hectares under cropping according to Stella, et.al 2013 and Phillips, et.al 2019). Similarly, of the estimated 3.14 million hectares irrigable land area, only about 220,000 hectares (7%) is utilized.

Demand for staples is increasing, driven by population growth (Nigeria’s population is increasing at 2.5 percent per annum) and growing urbanization. Demand for food staples across Africa is projected to double from US$50 billion in 2005 to US$100 billion in 2015. This, no doubt, presents a huge market opportunity within the region, including Nigeria. Over the years, Nigerian agriculture growth has been constrained by poor infrastructure, weak institutions, and inadequate technical support for commercialization and supply chain development as stated by Obisesan, (2013).

In general, the prevailing weak agricultural growth is not sufficient to boost overall per capita income as reported by Nweke (2004). Nigeria's foreign trade has always been observed at a deficit situation with an increase in demand every year for foreign goods for national development as well as for consumption, with a static trend in export growth. This informed the focus on agricultural value chain development to address the constraints.

**Consumer**

**Wholesaler**

**Retailer**

**Processor**

**Consumer**

**Retailer**

**Consumer**

**Consumer**

***Figure 1: Marketing channels for major cassava products***

From the figure 1 above, the processed cassava products move from the processors to the wholesalers, retailers and consumers (households, hotels, cooks, among others). The same figure 1 shows that consumers buy not only from retailers but also from the wholesalers and even from the main source (the processors). The implication of the above situation is that, the processors are not too far from the consumers in the study area. Therefore, this enhances easy communication between the processors and consumers as raw and un-fabricated feedback gets to the processors in no distant time. Having analyzed the figure 1 above, it is obvious that a dual channel was employed for the marketing of the selected cassava products in the study area.

**2.0 Position of Cassava in Nigeria**

Nigeria is the largest cassava producer globally, accounting for about one-fifth (21%) of total production worldwide. The demand for cassava and its constituents is high in the domestic economy. However, the supply has been unable to meet the huge demand across the country and even in Enugu State. Current research estimates that Nigeria (including in Enugu State) would need about 28.3 million metric tonnes of fresh cassava root planted annually on about 1.2 million hectares of land to meet the country’s demand for some of the cassava by-products and derivatives listed here which are:- ethanol, cassava-based constituents in sugar syrup, high-quality cassava flour, garri (a fine to coarse granular flour of varying texture made from cassava roots), cassava-based adhesives such as cassava starch, caustic soda, formaldehyde, hydrochloric acid and sodium silicate according IITA, (2019).

Overall, from the total output of 59.5 million metric tonnes of cassava produced in the country based on 2018 estimates, Nigeria has the economic potential to generate revenues of $427.3 million from domestic value-addition and derive income of $2.98 billion in agricultural exports of cassava. Furthermore, the local value-addition to cassava via local manufacturing and processing could potentially unlock about $16 million in taxes to the government. Part of the reason for the inability to satisfy domestic demand and boost production for the export markets is linked to the traditional method of cassava farming which has led to low yields and post-harvest losses over the years. Furthermore, the perishability of the crop and poor logistics along the cassava value chain can also lead to huge losses Ntawuruhunga, (2010).

The importance of value-addition to cassava via local manufacturing and processing to support local industrial activities cannot be overemphasized. There is significant local industrial demand for the derivatives and by-products that the commodity can provide, in addition to local consumption for primary output of cassava. This is because there is a three-yearly glut cycle that occurs in cassava farming in Nigeria. The cycle implies that harvesting of cassava is characterized by a cycle of glut that occurs every three to four years and results in excess output of cassava for local consumption. This excess output leads to depressed prices in the local markets due to over-supply following a period of scarcity and high prices.

This glut can be eliminated if the value-chain for cassava is diversified to include industrial processing, as the crop is primarily being used almost entirely for traditional foods (e.g. garri), of which local consumption is often not enough to absorb the glut cycle that occurs periodically. It is therefore important that government improve access to finance, enhance the cassava value-chain from end-to-end, incentivise and stimulate domestic production and manufacturing of cassava derivatives, increase agricultural extension services for cassava farmers and ensure more funding for agricultural research and development.

**3.0 Demand vs supply of selected cassava products in Nigeria**

Over the years, the supply of cassava derivatives or by-products in Nigeria has fallen short of demand. For instance, the demand for high-quality cassava flour for bread, biscuits and snacks is put at 500,000 metric tonnes per annum but supply is less than 15,000 metric tonnes. In addition, while demand for cassava starch stands in excess of 300,000 metric tonnes, supply remains below 10,000 metric tonnes, thus giving rise to a demand gap of over 290,000 metric tonnes. The infographic in figure 2 below shows the potential demand for some selected cassava products in Nigeria.

Despite the demand for these products, the required supply is still very low. More startling is the near-zero supply of ethanol (a constituent of cassava) in the country despite a huge potential demand of over 1 billion litres needed for industrial and domestic purposes. Specifically, Nigeria needs over 400 million litres of ethanol for industrial uses as stated by Echebiri, et.al (2018).



***Figure 2: Potential demand for some selected cassava products in Nigeria***

**3.0 Potential demand for some selected cassava products**

The country has always resulted to the importation of ethanol to bridge this gap. In 2018/2019, Nigeria imported about 68 million litres of ethanol valued at about $26 million from the United States. Meanwhile, in Nigeria, given that a tonne of cassava produces 166 litres of ethanol, the country would need to produce 2.41 million metric tonnes of cassava to be able to meet this huge demand gap. The table 1 below shows the total number of fresh cassava roots needed to meet the estimated demand in each of the selected cassava derivatives – alongside the acreage of yields required.

|  |  |  |
| --- | --- | --- |
| Cassava derivatives  | Fresh root equivalent to meet estimated demand (metric tons)  | Acreage required (25ton/ha)  |
| Cassava based adhesive (starch) | 2,000,000 | 80,000 |
| High-quality cassava four (HQCF) | 20,000 | 80,800 |
| Cassava-based constituents in sugar syrup  | 1,750,000 | 70,000 |
| Dried chips for export and animal feed | 5,600,000 | 224,000 |
| Fuel-grade bio-ethanol | 3,571,428 | 142,857 |
| Ethanol (for industrial uses) | 2,857,142 | 114,286 |
| High quality garri for export and supermarkets  | 12,525,000 | 501,000 |
| Total  | 28,323,570 | 1,212,943 |

***Table 1: Fresh cassava roots and acreage required to meet demand for selected products***

***Source: PWC report, 2020***

**4.0 Challenges of cassava production in Nigeria**

Some of the identified challenges of cassava production in Nigeria include but not limited to the followings:-

Cassava production is mostly traditional in Nigeria especially in the southern parts of the country where the produce and products are many and a lot of valuable products are lost through rudimentary methods. Due to perishability of cassava roots, inefficiencies in marketing and logistics lead to high losses of the fresh cassava.

Despite having a competitive advantage over the South in terms of lowered production cost and the porosity of its soil, the Northern region does not produce enough of the crop as it is not one of their staple foods in the region.

**5.0 Conclusion and Recommendations**

The result from this study shows that there is/are an upward trend in supply and demand for the selected cassava products/produce across the globe. Meanwhile, its economic potentials are yet to be met especially in developing countries like Nigeria. This is because of lack of adequate value addition to the produce and products from it. Based on this, these recommendations are prefer for the maximum economic potentials of cassava which when implemented will help to reduce poverty and create more employment especially in the rural areas.

1. *Enhance the productivity of farmers:* Farmers need to get regular training to ensure they are using the best production methods. The capacity of producers also needs to be strengthened to ensure that they can deliver quality produce in a timely manner and increase yields to reduce the supply gap.

2. *Adopt enhanced farming techniques and technology:* There is need for investment in mechanized agriculture in addition to other equipment and tools, as well as the adoption of enhanced farming techniques in the planting and harvesting of cassava.

3. *Improve the cassava value-chain:* The process of supply from farmers to processors needs to be streamlined and clearly outlined in order to ensure that cassava tubers are delivered in a timely and cost-effective manner.

*4. Invest in the production of other cassava derivatives:* Significant portions of cassava harvested in Nigeria are processed into garri and fufu. There is a need to consider investment in the production of other cassava derivatives such as sweeteners, ethanol and monosodium glutamate (MSG). For instance, significant opportunities exist for cassava-based ethanol production. Nigeria can leverage its position as the largest cassava producer in the world, by prioritising ethanol production from cassava with a view to creating rapid growth across ethanol-based industrial activities.

5. *Increased access to funding:* Cassava production is capital-intensive, and a large chunk of cassava produced in Nigeria comes from smallholder farmers. There is a need to ensure unhindered access of cassava farmers to funding to guarantee their ability to use best-in-practice tools and technologies.

6. *Ensure improved funding of research and development activities* of the agricultural research institutes, with a view to conducting research to produce new cassava varieties, which can withstand unfavourable weather conditions that will germinate and grow better root tubers.

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