

## **CASSAVA PROCESSING, MARKETING AND ITS IMPACT ON JOB CREATION IN NIGERIA**

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### **Abstract**

Unemployment has been one of the adverse effects of population explosion all over the world. Gone were the days of automatic employment for graduates especially in developing economies like Nigeria. Thus, Cassava products business is identified as a fertile field to absorb every willing and agile person willing to overcome the reproach of unemployment. From farming to processing and marketing of the products, cassava business is an endless outlets waiting for people to key into it. The paper therefore examined cassava processing and marketing of its products as a vital means of curtailing unemployment among the teeming youth population, and a means of reducing abject poverty among the employed in Nigeria. The paper explored steps that could be taken to assuage the negative effects of unemployment in Nigeria. Again, the methodology adopted is the use of field surveys, empirical site reports and discussions with the critical stakeholders of cassava products business. Secondary data were also used. The results were examined using discrete statistics and presented in tables. The result revealed that cassava processing and its products marketing are vital avenues for employment creation and means of reducing life's trauma in Nigeria. Therefore, the paper concluded that with vision, ruggedness, determination, willingness and government concerted effort to providing the enabling environment, cassava products business could contribute in no small measures in reducing unemployment to a large extent. Thus, recommends that government should provide the enabling environment with the view to motivating the teeming youths to venture into cassava farming as was done by previous governments in operation feed the nation and the green revolution.

**Keywords:** Unemployment, Cassava, Processing, Agriculture.

### **Introduction**

Nigeria in recent years has been operating a mono economy that is, completely dependent on petroleum resources. All that government could do largely depends on petroleum resources and any problem evolving could have colossal impact on the economy. Gone were the days when agriculture was the main source of revenue to the economy when Nigeria was called the giant of Africa mostly because of her economic stability. Today the story has completely changed and that has brought various problems majorly unemployment with other attendant effects. According to Iyaji (2016), "the problem of unemployment has been a daunting issue in terms of solution, and the scourge of it is about the most dehumanizing plaque belittling human dignity all over the world". All government effort at fighting against unemployment such as National Directorate of Employment (NDE), Bank of Industry (BOI) etc. has not procured an enduring solution. This corroborates the need for diversification of sources of employment and it substantiates the need for this study.

Even at the level of governance, frantic effort has been made on the fight against unemployment as opined by Akinwunmi (2012), that "government has put a number of measures in place to encourage young and agile citizens especially graduates to take to farming as a career option instead of waiting

for white collar jobs that are not available and where they are cannot go round everybody". Unemployment problem cannot be completely solved no matter the economic buoyancy of a nation depending only on petroleum resources most especially as population keeps growing geometrically without proactive steps at diversifying the economy.

At the international realm effort have been made to correct this economic anomalies as pointed out by Stephen (1981), " although the USA has moved from an agrarian to industrial economy, the farming business firms still fulfill many roles in the economy. Some of these roles are obvious such as providing adequate food supply, contribution to the nation's balance of payments, source of employment, contribution to the general society's welfare through providing a stable supply of high quality food and fiber products". If a developed economy like the USA could still solidly depend on agriculture for sustainable development what more of Nigeria and even Kogi state. Explaining the plight of an average civil servant depending on monthly stipends for living Okechukwu (2016), stated thus "hundreds of thousands of the working class live in rotten tenements and cannot afford or access medical services. It is increasingly difficult for workers to send their children to school." Above is for real because at the end of every month workers salaries is always on minuses and most times no addition, and this has aggravated the problem of poverty. The people on government employment are facing poverty problem today what more of those who do not expect anything from any employer at the end of the month, and this is why there must be alternative means of supplementing salary take home or earning.

Corroborating the above stance Onebune (2016), opined that "agriculture remains a major source of jobs for our people. He further stated that the business of agriculture should be an important part of any progressive nation's economy. Millions of workers are employed in processing, storing and distributing the food produced by farmers". Shrivastava (2012) corroborated this stance as he opined that "agriculture is the largest and most important sector of the economy".

As pointed out earlier, cassava products is the main thrust of this research in the agricultural business as means of creating jobs. Cassava product is undoubtedly a vital economic crop cultivated in many tropical nations such as Thailand, Brazil, India and several West African countries including Nigeria. Particularly in Kogi state there is no part that cassava cannot thrive and also cannot be fruitfully grown. According to FIIRO (2006), "Nigeria presently ranks as the number one cassava producer in the world". One of the reasons for this is the ease of growing and maintaining the crop compared to other crops. As observed from field surveys, it is possible to go to the farm today clear the land, make ridges the same day and plant cassava without any fear of it germinating. As per the structure and nutrient contents of the plant FIIRO (2006), explained as follow, "the plant itself is classified as a perennial semi shrub, its high energy carbohydrate rich roots can be processed into a wide variety of products from food to industrial starches which make cassava very important economically". It further explained that "cassava plant has large palmate leaves with 5 to 7 lobes and a slender petiole. The stem is interspersed with nodes by which the plant reproduces vegetative when matured. The roots taper off starting from the stem as they run into the ground ending up in thin, unusable fibrous roots. The starchy roots consist of two portions, an outer cortex, which is corky, and an inner fleshy part which can be processed into various edible carbohydrates or industrial starches". Thus, this study examines cassava processing, marketing and its impact on job creation in Nigeria.

### Objectives of the Study

The paper is aimed at examining the inherent potentials in cassava tuber products, its production and processing, marketing, economic contributions and as means of job creation. The specific objectives are as follow:

- i. To ascertain how cassava production could be a means of job creation for teeming youth population in Nigeria.
- ii. To showcase the ease of cassava production compared to other kinds of crops.
- iii. To depict cassava farming as a means of supplementing earnings and family maintenance.
- iv. To determine the extent to which cassava production could reduce poverty in Nigeria.

### Theoretical analysis

Cassava (*manihot esculenta*), originally a crop of South America was introduced into Nigeria's southern part during the period of slave trade. According to Alica (2018), the crop was "proliferated by the Portuguese explorers and colonizers in the sixteenth century. However the importance to the country got a boost in the late 19<sup>th</sup> Century, when more former enslaved Nigerians introduced the processing techniques". Over the years, multitudes of Nigerians have been exposed to the importance of cassava as a crop, and at the national level it is considered as a very important economic crop. According to FIIRO (2006), "Nigeria ranks as the number one producer of cassava in the world. The table below substantiates this stance on Nigeria's position in cassava production.

Table 1: Largest producers of cassava in the world

S/N	Country	Year (production in million tons)- 1996-2002	Year (production in million tons)- 2014	Year (production in million tons)- 2017
1	<b>Nigeria</b>	<b>34</b>	<b>47,406,770</b>	<b>47,406,770</b>
2	Brazil	23	21,484,218	21,484,218
3	Thailand	20	30,227,542	30,227,542
4	Indonesia	18	23,936,920	23,936,920
5	Congo democratic republic	16	14,611,911	14,611,911
6	Ghana	10	15,989,940	15,989,940
7	Tanzania	6	4755160	4755160
8	Mozambique	7	4303000	4303000
9	Uganda	6	2979000	2979000
10	Madagascar	2.5	3114578	3114578

Source: Oishimaya Sen Nag (2017)

What makes the crop so popular is because of recent discovery about its Nutrient Contents due to several researches. According to FIIRO (2006), Cassava tuber has "a high energy carbohydrate rich roots which can be processed into a wide variety of products from food to industrial starches, which makes cassava important economically".

Apart from the above, the awareness of its importance has spread nationally. According to a recent publication by the Federal ministry of agriculture, “up to 24 states of the 36 states of Nigeria are aggressively into the production of cassava”. It further stated that “in 2009, Nigeria produced 45 million tons of cassava which is almost 19% of the world’s production.

### **The Pathway to Successful Cassava Farming**

To achieve gardening in cassava, there are several agronomic practices a farmer must adopt. The practices enhance soil condition for growth of the crop from the point of planting to harvesting. According to Alica (2018), the following clues enhance high cassava yields:

**Soil:** According to Alica (2018) cassava could be grown on a wide range of land but best on a “deep free draining soils with reasonable fertility levels. Shallow soils which restrict tuber expansion should be avoided”.

**Rainfall:** The crop is highly drought resistant and grown in many places where rainfall is low and unreliable. It grows at all altitudes but farmers obtain low yields on very low altitudes.

**Weeding and planting time:** Keep the crop weeded in the second month after planting, and intercropping also suppresses weeds. The best time to plant is when the soil is moist meaning farmers should target the first season rainfall and once the stock germinates the plants will be able to grow. Planting in dry season lead to failure of the seed to germinate coupled with destruction by pests such as termites.

**Land preparation and planting:** Cassava seed bed requires deep cultivation of land to a depth of 10 centimeter. Although seed bed is preferred, ridges or moulds can be used but moulds encourage tuber development more. Planting is done by the use of cuttings and parts of the stem should be from a mature plant especially the middle part. The cutting may be buried in a horizontal position of two by 10 centimeter deep or buried half way into the soil. Where there is no intercropping a spacing of 1.5m by 0.9m is recommended.

**Pests and diseases:** cassava is known to have high resistance to pests and diseases yet cassava still needs attention. The research also pointed out that “ the most notable pests is the cassava mealy bug which attacks mainly the growing points of the plant causing stunting, leave deformation. Another one is the cassava green mite- a sucking pest which lead to reduced growth, scorching of leaves, tinny leaf production, leaf fall and eventually a plant without leaves. **Harvesting and post harvest handling:** Cassava takes eight or more months to mature depending on the variety. Yields also vary depending on the variety of soil with the average yield of 10-30 tons per hectare. The harvest may be done one by one or by uprooting the whole plant.

**Storage:** It cannot be stored fresh for a long time therefore should be sliced and dried in the sun and so can be kept for a long period of time in dry bags or in a place such as granary. The dry cassava can be pounded into flour, which can be stored for a long period.

### **Quality Cassava Starch Professionals in Nigeria**

In the quest for sustainability of cassava farming/processing industry in Nigeria, the study revealed the following lists of organizations, which are currently into starch production businesses, and some directly into cassava farming as are shown on the table below

**Table 2- Selected lists of organizations involved in cassava production business in Nigeria**

S/N	Trade Name	Site Address	Services
1	Jolasbakk Ventures Nig. Ltd (founded in 2010).	Suite 17, Baba Eko shopping complex, Offa, Kwara State.	Starch production and other farming business
2	Star Chemical products manufacturing Organization	Alimosho, Lagos.	Starch production, offering cassava chips, supply of cassava tubers.
3	Eden ARC Nig Ltd	Alausa, Ikeja, Lagos	Agricultural products, Agric and Farms, Cassava Starch.
4	Wisdom Kay Enterprises	Aroje road, Ogbomosho, South Oyo	Agric and Farms, Fisheries, cassava starch.
5	Forte Pitch Limited	Koshemani street, Ipaja, Alimosho Lagos	Agric products, Agric and farm, cassava starch
6	Josephine Farm products supply	Portharcourt, Obio Akpo, rivers state	Foods, Cassava Starch, Dried Food Stuff, Yam flour.
7	Crest Agro Products	Achabo in Koto Karfe LGA, Kogi state. Headquarters – Km9/52, Lokoja, Obajana road	Cassava farming, Starch production etc.

Source: <https://m.vconnect.com> (July, 3<sup>rd</sup>, 2018)

The table 2 displays the ever-increasing popularity of cassava as an economic crop in Nigeria.

### **Sustainability of Employment Avenue in Agricultural Sector**

Uncountable numbers of persons are willing to engage in farming when properly mobilized and patronized. As shown in the table above the patronage is growing. On the international scene, India, China and the USA got their initial break even through agricultural businesses, and the same revolution could be started in Kogi State. More so, as there is a spiraling unemployment crunch and poverty is on the increase even among the working class. The fact that Agricultural sector has credible potential to create jobs is substantiated by Shrivastava (2012), that “between 1979- 1980, when one million tons of food grains were utilized in India, it created 373 million man-days of employment”. The author further stated that “during the same period, when a special allotment was made to the states affected by drought in the same year, about 600 to 700 additional employment were created in the rural area”. This authenticates the potentials in Agricultural industry to create unlimited employment if properly harnessed.

In another realm, Onebune (2016) opined that “the future careers in Agricultural business look bright. If current predictions hold true, workers will need to become even more efficient because the food demand and other agricultural products will continue to increase. If the world’s growing population is to be fed, world food production must double”.

### **Research Methodology**

The methodology employed is the use of field surveys, site visits, interaction with critical stakeholders of cassava products business. Secondary data were also used. The results were examined using discrete statistics and presented in tables. The result revealed that cassava processing and its products marketing are vital avenues for employment creation and means of reducing life’s frustrations. The paper concluded that with vision, ruggedness, determination, willingness and government concerted effort to providing the enabling environment, cassava products business could

contribute in no small measures in reducing unemployment to a large extent. Decades of years of visits to cassava farming sites were made. It was observed that cassava farming is one of the easiest, cheapest and fruitful types of farming that any prospective farmer could key into for expected harvest within about eight months later. Data collected from these sources were examined. Based on this premise, research findings were presented.

### **The study area**

The area known as Kogi state is in the middle belt region of Nigeria. Kogi state was created from Kwara and Benue states in 1991 covering the old Kabba province. The state is popularly called the confluence state because of the confluence of rivers Benue and Niger. The capital is Lokoja which is the first administrative capital of Nigeria. According to Comptonigeria staff (2011), "the state is presently made up of the defunct Kabba province of Northern Nigeria. It is structured into 21 local government areas, comprises three major ethnic groups; Igala, Ebira and Okun (Yoruba extraction). Other minor groups include Bassa Komo, Bassa Nge, Kakanda, Kua, Ogori Magongo, Nupe, Oworo, and Gwari".

**Economic activities:** The main economic activity of the people is farming and the crops produced include cassava, yam, rice, maize, guinea corn, beans, soya beans, ash and millet. The state is blessed with precious mineral resources like columbite, coal, limestone and aquamarine.

**Geography:** Kogi state is bounded to the east by Nassarawa State, to the south by Enugu, Anambra, and Edo States to the west by Ondo, Ekiti and Kwara, and to the North by Niger and Abuja. It lies on latitude 7.45° N and longitude 6.45° E with a geological features depicting young sedimentary rocks and alluvium along river beds which promotes agricultural activities.

**Population:** According to Comptonigeria staff (2011), the population of Kogi state is estimated to be 3.3 million. The population has definitely swelled beyond this as the state has witnessed spiraling migrants to it. According to World Bank estimate in July (2018), the projected population of Kogi State as at 2016 was put at 4,473,500.

**Weather / Climate:** Kogi state has an average maximum temperature of 33.2° C and an average minimum of 22.8° C. Lokoja the state capital is generally hot throughout the year. The state has two distinct weather namely dry season which last from November to February, and rainy season which lasts from March to October. These conditions are conducive for cassava farming..

**Soil fertility:** The study area has fertile land for cassava farming. There is no part of the state that cassava cannot be grown fruitfully. However to enhance high yield there is a need to use manure or fertilizer.

**Availability of cheap labour:** The study area is predominantly an agrarian state where any prospective cassava farmer could easily get cheap labour. There is no part of Kogi state where one cannot get trained farmers to assist in farm work.

### **Results and Discussions**

Data collected from field surveys, observations, site visits, discussions and practical participation are presented in tables as shown below:

**Subsistence cassava farmer:** Any person could go into cassava farming either by doing it around his house or on a leased land. The farmer may be educated or uneducated, business man or civil servant. All it takes to do it is not much, and the good thing about it is that because of the nature of the crop it could still yield once the basic growth requirements are met. The table below shows what might be required to start cassava farming

**Table 3: Average requirements for small scale cassava farming**

S/N	Equipment	Average cost per one (N)	Total cost (N)
1	Hoes (2)	1500	3000
2	Cutlasses (2)	1000	2000
3	Land	Could be rented or leased	
4	Labor (4)	Between 1500 to 2000 but negotiable	6000 to 8000
5	Pesticides (2)	1000	2000
<b>Grand total cost : 15000</b>			

**Source: Researchers field surveys and site visits (2018)**

### **Regional distribution of cassava farming in Nigeria**

Cassava farming has since spread to various parts of Nigeria and it is consequent upon the realization of its importance economically, the nutrient contents, as a staple food, and as food security against hunger. The north central ranks highest in cassava production as shown in the table below:

**Table 4: Regional distribution of cassava farming in Nigeria**

S/N	Region	2000	2001	2002
1	South west	4,993,380	5,663,614	5,883,805
2	South South	6,268,114	6,533,944	6,321,674
3	South east	5,384,130	5,542,412	5,846,310
4	North west	2,435,211	2,395,543	2,340,000
5	North central	<b>7,116,920</b>	<b>7,243,970</b>	<b>7,405,640</b>
6	North east	165,344	141,533	140,620
	<b>Total</b>	<b>26,363,099</b>	<b>27,521,016</b>	<b>27,938,040</b>

**Source: PCU( project coordination unit 2003)**

### **Sources of Employment Related to Cassava Farming.**

i. **Garri processing for sale:** Garri as of today is no longer food for the poor. There was a time a small measure of it cost N1000:00, and as of now the cost is between 600 to 700 naira.

ii. **Cassava flour processing for sale:** A big measure of cassava flour cost N5000: 00 today. There was a time it cost about six to seven thousand naira. It could be a source of employment for both wholesaers and retailers.

iii. **Sale of cassava tubers:** Above eight months after planting, cassava would be due for harvesting. This attracts several employment avenues as buyers even go to farms to look for tubers to buy. As of today a pick up load of cassava tubers cost about fifty thousand naira.

iv. **Uncountable source of employment in factories processing starch:** As noted in table 2, many companies are into cassava processing today and that is generating several employment opportunities for people both as employees, and those into self reliance business.

v. **Production of gum/ adhesives:** Adhesives are needed in every realm of human endeavors necessitating creation of employment for people involved in the production and its major materials are from cassava.

### Research Findings

Consequent upon the surveys, observations, farm site visits, interactions, the following are the credible reasons why cassava is a hopeful avenue for employment creation in Kogi state.

i. **Sustained high cost of cassava products:** Table 5 shows three year records of cassava products cost substantiate this fact.

Table 5: **Estimated cost of some cassava products in three 3- years**

S/N		Year- 2016	Year- 2017	Year- 2018
		Cost in ( N)	Cost in ( N)	Cost in ( N)
1	A Pick up load of cassava tubers	50,000	45,000	40,000
2	A big measure of cassava flour	6500- 7000	5500	5000
3	A small measure of garri	1000	700	500
4	A bucket measure of Akpu ( Ibo)	1200	1000	1000

Source : **farm site visits and market interviews (2018)**

ii. **Ease of cassava farming:** It is possible to go to farm today clear the land prepare ridges and plant cassava the same day which is not possible with other crops.

iii. **The cheapest and dependable means of investment:** Except for investment in industrial processing of starch all others are cheap. Is it direct farming or processing of garri and flour, not much money is needed to go into the business.

iv. **Local and international employment creation avenues in cassava products:** Apart from employment being created in processing factories, multitudes of people go into cassava farming directly today.

v. **Career prospect in agricultural sector:** Many career prospects have been identified in agricultural sector such as small scale farming, fish farming, farm produce transportation, poultry, piggery, exportation of farm products etc.

vi. **Versatility of cassava leaves:** Cassava leave is versatile as it is good for maintaining great health. The leave contain vitamin C, a powerful antioxidant for helping to prevent cardiovascular disease, stroke and cancers. It also contains vitamin B for good mood, vitality and metabolism. Also IITA opined that, “cassava is versatile and its derivatives and starch are applicable in many types of products such as food, confectionery, sweeteners etc”.



vii. **Chemical compositions of cassava:** As reported by Okigbo (1980), “cassava root has a high moisture content of about 65%. It also has very high food energy contents (352 cal/100g). It is low in protein, riboflavin and has little or no niacin and vitamin C” table 6 explains in detail.

Table 6: Average chemical composition of cassava (% dry matter basis)

S/N	Variety/part	Dry matter (%)	Crude protein (%)	Ether extract (%)	Crude fibre (%)	Non- fat extract (%)	Total ash (%)
	Bitter cassava						
1	Unpeeled root	31.94	2.71	0.53	3.09	91.01	2.66
2	Peeled root	28.5	2.58	0.46	0.43	94.12	2.41
	Sweet cassava						
3	Unpeeled root	31.94	2.38	0.65	1.95	92.13	2.89
4	Peeled root	27.94	5.61	1.39	10.31	78.23	4.44
5	Cassava leaves	25.6	14.69	8.39	15.63	45.22	16.07

Source : Okigbo, (1980)

### Sustainability of Cassava Farming in Nigeria

Every one of cassava products is needed by families in Nigeria for sustenance hence there would be a sustained market for it, more so as the population of Nigeria is growing exponentially compared to food production. There are also industrial needs to be supplied by cassava farming products. The World Bank estimated population of Nigeria in 2016 is 186 million, and all have to be fed.

### Conclusion and Recommendations

Unemployment problem in Nigeria and especially Kogi State cannot be solved by solely depending on a mono-economic system as obtained in Nigeria presently hence, the general calls for diversification into other areas particularly agriculture. Nigeria in the sixties and seventies reaped glories from agricultural sector but unfortunately there was a loss of direction and hence all effort has been invested in petroleum exploration and processing culminating in our present predicament. Today there is a shift of direction back to the sector hitherto abandoned by previous government, individuals and private organizations. To sustain this tempo, everyone must be proactive in the move for more investment in the agricultural sector especially cassava farming and processing of the products. The study also makes following specific recommendations:

- i. Government should provide the enabling environment with the view to motivating the teeming youth population to venture into cassava farming as was done by previous governments in operation feed the nation and the green revolution.
- ii. There should be reduction in company income tax especially in companies involved in the processing of agricultural products.
- iii. Private sectors should be motivated to go into production of fertilizer as means of boosting cassava production.
- iv. Government should provide a leveraging environment for agricultural business to thrive in Nigeria especially good roads, regular power supply, and affordable housing

v. Government should enact a law to motivate people into acquiring extra skills as criteria for promotion of its workforce and fresh employment.

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