

## Status of Sweetpotato Production in Nigeria; A Collective Role for Poverty Reduction

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**Abstract.** Sweet potatoes are one of the most important and versatile vegetable crops in the world. However, the problem of ignorance of this food crop stands in the way of its full application. Today, sweet potatoes rank sixth in the world in terms of value of roots and tubers based on fresh weight. However, more than 105 million tons of sweet potatoes are grown in the world every year. 95% of raw materials are produced by developing countries. The world's largest area for sweet potato production is Asia. The annual production of sweet potatoes on the continent is 88.51 million tons. In addition, China supplies about 76% of world sweet potato production. This makes it possible to identify China as a leading supplier of sweet potatoes worldwide. Sweet potatoes are a promising food product in terms of overcoming the sad statistics of malnutrition and poverty in low-income regions, particularly in Africa. To this end, the article analyzes the available sources to assess the state of sweet potato production in Nigeria. The role of sweet potatoes in reducing poverty within collective boundaries is especially emphasized. Since the success of sweet potato production – yields – depends significantly on climatic conditions, it also determines the seasonality of production of this plant in some countries where there is no irrigation system. This subsequently affects the quality of root crops on the market, as well as high fluctuations in product prices. Today, only small steps are taken to categorize, assess the roots of sweet potatoes at both domestic and industrial levels. The work is based on the recommendations of molded sweet potato cultivation. And also improvement of a chain of pricing on sweet potatoes with involvement of joint efforts at the governmental and public, social levels. People's perception of sweet potatoes as a low-priority crop should be overcome. State policy should aim to strengthen and adjust the cultivation of sweet potatoes. The economic values of sweet potatoes are best promoted to specialists in the field of crop production, food, economy, etc., to attract more resources and those willing to produce sweet potatoes.

**Key words:** sweetpotato, production, poverty alleviation.

### Introduction

Agriculture is a catalyst for overall development of any country in the world. It is a critical sector that drives the economic development and industrialization. Therefore, the roles of agriculture in hunger reduction remains a pivot for nation building especially the part that produces food is linked to poverty alleviation and human development (Garba, 2016: 17-25). Globally, sweetpotato is cultivated in eleven countries in an area of 8.106 million ha producing 106.5kg million tons with an average productivity of 13.147tons/ha (Srinivas and Maniyam, 2012: 43-147). Asia is the world's largest sweetpotato production region with 88.51 million tons of annual production. China supplied about 76% of the world's production, making the country the leading supplier of sweetpotato in the world. Sweetpotato remains one of the root crops widely cultivated, traded and consumed in Sub-Saharan Africa including Nigeria. It is among the world's most important and versatile, but under exploited food crops. It is currently ranked as the world's sixth most important root and tuber crops on the basis of fresh weight. More than 105 million metric

tons of sweetpotato are produced globally each year, 95% of which is growing in the developing countries (FAOSTAT, 2012; Agoh and Njoku, 2020: 1-9).

Agricultural extension transformation agenda (AETA, 2012), said that about 70% of the population depends on agriculture for their livelihood and because of the underdevelopment of the agricultural sector, most of the farming population (70%) still live below the poverty line. As matter of this, malnutrition becomes the order of the day with over 41% of children less than five years of age are stunted in growth while the prevalence of vitamin A deficiency at 29.5% remains a public health concern (Internet World Statistics, 2012; Okeke, 2018). According to Okeke (2018), vitamin A deficiency seriously affects all individuals but mostly common among young children, pregnant and lactating women because they have higher malnutrition needs (international potato center (CIP, 2010). However, strategies to control vitamin A deficiency include dietary diversification, food fortification and vitamin A supplementation which means the availability of some rich crops such as sweetpotato and its like (Spore, 2015).

In order to improve the nutritional values of crops in Nigeria, the country launched its National Policy on Food and Nutrition in the year 2002 with the general goal of improving the nutritional status of crops in Nigeria. However, this policy considered specific targets like reduction of severe and moderate malnutrition among children fewer than five years by 30% by 2010 and reduction of micro nutrient deficiencies such as vitamin A, iodine and iron by 50% by 2010. In extension to this, federal government of Nigeria adopted a strategy of fortification of staple food with vitamin A so that children will naturally consume vitamin A in their food and this is the necessity for recommending the health and nutritional economic benefit of sweetpotato and orange flesh sweetpotato consumption (IITA, 2010; FAO, 2012).

Sweetpotato plays a very important role in food security strategy in Africa as it is a drought resistant and relative short term crop. Therefore, sweetpotato is a good candidate for alleviating malnutrition and poverty in the developing continents like Africa.

According to Natson et al. (2018: 1-3), sweetpotato is principally grown in a farming system in sub-Saharan Africa where food crop production is dominated by root crops. It matures in three months and this has implication for food security in the hungry continent like Africa. The crop is a major source of employment for farmers in producing communities. In the same piece of land, sweetpotato can be produced with less input requirement compared with other roots and tuber crops and helps in maintaining the fertility of the soil by serving as a cover crop and erosion control to the soil (Promotion of Private Sector in Agriculture (PSA), 2010). The production systems are highly influenced by climatic condition which impact on the seasonality of the crop production in some non irrigated developing countries and this affects the quality of the roots in the market as well as high price fluctuations. In addition, there is a minimal processing of roots both at household and industrial levels (Natson et al, 2018: 1-3). To address these issues, there is need to strengthen sweetpotato farming systems and improve sweetpotato value chain using collective efforts from both governments and private sectors. In the light of this, this paper used available literature to assess the status of sweetpotato production in Nigeria as a collective role for poverty reduction.

#### *Status of sweetpotato production in Nigeria*

In the developing countries, sweetpotato ranked fifth economically after rice, wheat, maize and cassava, sixth in dry matter production, seventh in digestible energy production and ninth in protein production (Esan and Omilani, 2018: 1-8). However, world

production of sweetpotato is about 131 million tons yearly, on approximation of 9million ha with mean estimated yield of 13.7tons/ha. China is the world’s leading producer of sweetpotato, accounting for about 80% of the total production globally. Nigeria is the most abundant sweetpotato producer in Africa and second to China in world production (FAOSTAT, 2014).

Trends in sweetpotato production in Nigeria cannot always be upwards or downwards due to adoption behaviour of the farmers and other constraints associated with crop production. Sweetpotato production in Nigeria was on increase rate for some periods later started decreasing with some percentages when Nigerian farmers saw sweetpotato as an alternative crops that should be treated with low priorities. According to Ezeano (2006), sweetpotato production in Nigeria is on the increase, this is confirmed by FAO production year book (1989-2001) which stated that sweetpotato production yield and area harvested experienced a steady increase in Nigeria from 149 thousand metric tons to 2,468 thousand metric tons in 2001. Africa ranked second after China in terms of sweetpotato production with 17 million tons produced in 2011 (Spore, 2015). Food and Agricultural organization (FAO)’s estimate on the average sweetpotato yield of 5 to 8t/ha from 1989-2001 is similar to the estimate from a survey carried out by State Agricultural Development Programmes (ADPs) in Nigeria which reported yield of popular local varieties from 7 tons/ha in the South Eastern zones, 3.5t/ha in the northern zones, and 7t/ha to 8t/ha in Plateau and Bauchi State (Tewe et al., 2003).Between 1961-1970, Nigeria produced 150,100 tons of sweet potato. From 1971-1980, it has increased from 150,000 tons to 101,006 000tons and this could be as a result of multiplication of area planted. However between1981-1990 the production rate reduced to 102,900 tons. From 1991- 2000; the production trend started increasing with an average output of 1,168,100 tons. From 2002-2010; there was a tremendous increase on sweetpotato output at 4,808, 400 ton, of which the crop had the tenth highest production level of any simple food crop in Nigeria after cassava, yam, oil palm fruit, maize, sorghum, millet, paddy rice and plantain. Between 2011 to 2017, there was a serious decrease in sweet potato output in Nigeria with an average output of 2,633, 533 tons. This decrease in output could be attributed to the total reduction of areas planted by the farmers as well as the constraints to sweetpotato production (Kathryn et al., 2012 ; FAOSTAT, 2018)

Table 1. Estimated mean yield of sweetpotato production in Nigeria from 1961-2017

Years	Quantity production (tons)
1961-1970	150,100
1971-1980	101,006000
1981-1990	102,900
1991-2000	1,168,100
2001-2010	4,808,400
2011-2017	2, 633, 533

Source: compound production rates are author’s estimated mean using secondary data from FAOSTAT, 2018.

*Sweetpotato production; a collective role for poverty reduction in Nigeria*

Sweetpotato (*Ipomoea batatas* (L.) Lam) is a member of the morning glory (*Convolvulaceae*) family, an important stable food in many countries of Sub-Saharan Africa with both domestic and industrial usages. It possesses medicinal properties with

great nutritional values, which exceeded other tuber crops such as yam, cassava, cocoyam (Loebenstein, 2009; Law-Ogbomo and Osaigbovo, 2017: 17-25). The crop has a short growing period of 3-5 months depending on the variety, and this permits the growing of two or three crop cycles in a year. This crop is usually produced by resource-challenged farmers.

Use of sweetpotato in Nigeria dated back to the period 1594-1698 when Portuguese traders introduced it. However, in the last 300 years, little has been done to promote the crop in areas where it has comparative advantage till the arrivals of International Institute of Tropical Agriculture(IITA), National Root Crops Research Institute(NRCRI), and International Potato Center (ICP) whose efforts popularized the potentials of sweetpotato production in Nigeria through extension agents. This was a hidden crop to many, mainly because there are other alternative food crops. Therefore, any organized promotion of the crop will yield more benefits to Nigeria. It will adequately supplement the food and cash supplies to farming households in the area. The crop is well patronized as a daytime snack in schools and offices (Akoroda et al., 2007: 158-161).

Sweetpotato has a long history as a life saver. The Japanese used it when typhoon demolished their rice fields. It kept millions from starvation in famine-plagued China in the early 1960's and came to the rescue in Uganda in the 1990's when a virus ravaged cassava crops. The crop can be considered for promoting nutritional security particularly in agriculturally backward areas as it is a rich source of protein, lipid, calcium and carotene beside carbohydrates. The orange-flesh sweetpotato variety can play a key role in alleviating vitamin A deficiency, which is rampant among children in Asia and Sub-Saharan Africa (Srinivas and Maniyam, 2012: 43-147).

Sweetpotato was cultivated in few areas by the local farmers in Nigeria before the recent increase and its use was limited to boiling, roasting and frying (Osabohien and Ogunbiyi, 2019; Ike, 2010). Recently, with the global attention given to sweetpotato due to its economic values to mankind, the processing of sweetpotato, as highlighted by many scholars, has the potential of making a significant impact on the economy. This is because processing offers the possibility of better storage, added value, lower transportation cost and new markets in the food, feed, and industrial sectors (CIP, n/d; Science Daily, 2007; Disaster Relief, n/d; Gehan, 2019: 21-31). It will also facilitate the marketing of this crop, increase productivity and improve the standard of living by providing income for farmers. The use of sweetpotato in livestock feed will help to improve livestock nutrition and lead to cheaper meat production. Sweetpotato therefore, can play a major role as a food reserve for many rural and urban households, due to diversified usage (Odebode et al., 2008: 300-308).

Sweetpotato is a good alternative to other crops like yam in some parts of the states in Nigeria. It is a hardy crop that thrives in soils that cannot sustain yam production. Many farmers embrace the cultivation of the crop because of the reduced tedium involved in its cultivation as compared to yam. Since the crop is cultivated sole, many farmers are looking for appropriate crops for gainful intercropping as to serve for a food security crop for rural poor households and government in view of its poverty alleviation programme should encourage this crop. Hence, the future of sweetpotato appears brighter than the other root (Akoroda et al., 2007: 158-161)

The crop can give a cash return in 3.5-4.5 months. Use of sweetpotato in poultry and pig farming is very well established. Research has showed that attempts to pelletize sweetpotato flour along with the vines and leaves as a complete feed for rabbits and other

live stocks can help to reduce poverty lines in rural communities as more rural people will be gainfully employed through the enterprise (Akoroda et al., 2007: 158-161). In extension to their view, Nigeria's industrial economy is warming up to the production of alcohol from starchy crops of which sweetpotato has a good potential for alcohol production. Ethanol yields from sweetpotato vary with variety (0.07-0.15 litre/ kg fresh root); and was significantly correlated ( $r=0.96^{**}$ ) with root dry matter percentage among the nine varieties studied. When this is done, lives of the many unemployed Nigerians will be economically sustainable through that and the rate of poverty will be reduced as well.

### Conclusion

Sweetpotato is cultivated in eleven countries in an area of 8.106 million ha producing 106.5kg million tons with an average productivity of 13.147tons/ha. Asia is the world's largest sweetpotato production region with 88.51 million tons of annual production. China supplied about 76% of the world's production, making the country the leading supplier of sweetpotato in the world. Sweetpotato remains one of the root crops widely cultivated, traded and consumed in Sub-Saharan Africa including Nigeria. It is a good candidate for alleviating malnutrition and poverty in the developing continents like Africa. In the light of this, this paper used available literature to assess the status of sweetpotato production in Nigeria as a collective role for poverty reduction. However, since the productions of sweetpotato are highly influenced by climatic condition which impact on the seasonality of the crop production in some non-irrigated developing countries and this affects the quality of the roots in the market as well as high price fluctuations. However, there is a little processing of roots both at household and industrial levels. This paper recommends that, there is need to strengthen sweetpotato-farming systems and improve sweetpotato value chain using collective efforts from both governments and private sectors. The perception of people on sweetpotato as a low priority crop and should be treated as such should be avoided, strengthened and corrected for more participation of farmers in sweetpotato farming and economic values of sweetpotato should be popularized by extension worker to involve more hands on sweetpotato productions.

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