

INTRODUCTION

1.1 BACKGROUND

Despite the dominant role of the petroleum sector as the major foreign exchange earner, agriculture remains the mainstay of Nigeria's economy (Oyejide 1986). In addition to contribution to GDP, it is the largest non-oil export earner, the largest employer of labour, and a key contributor to wealth creation and poverty alleviation, as a large percentage of the population derives its income from agriculture and related activities (NEEDS, 2004). All over the world, the concept of evolving strategies for ensuring natural food security and sustainable livelihood especially for the developing countries has gained full prominence. In view of this, processing cassava into its derivatives for food and income has been the practice of many Nigerians in the rural areas. The current drive towards higher levels of commercialization of cassava processing under the presidential initiative on cassava requires that the scale of cassava processing be increased in Nigeria (Ekwe and Ekwe, 2005).

Cassava is one of the staple food crops grown in Nigeria. Nigeria grows 34,000 tonnes of cassava every year, which constitute the largest output of the crop from any country in the world (Adebayo and Sangosina, 2005). In 1982, Nigeria ranked number six in the world production of cassava with an output of 6.8 million tonnes per annum. Through the cassava multiplication programme (CMP) (1986-1996), Nigeria's production of cassava increased from 41 million tonnes in 2005 to 49 million tonnes in 2008 (FAO, 2008).

Today the crop is grown in virtually all parts of the country and is now the focal food crop for foreign exchange earning (Isiorhaorja and Idoge, 2005). In Nigeria, cassava is consumed daily and sometimes more than once a day (Nweke, 2004) and it contributes more than 1000 calories per person per day to the diet of

many families. Cassava is consumed with a sauce made with ingredients rich in protein, vitamins and minerals. Some even eat cassava for breakfast, lunch and dinner (Haggblade and Zulu, 2003). In Nigeria, cassava is very important in the economy and nutrition of poor rural household (NRCRI, 1996). Cassava has other advantages such as ability to store well in the soil for several months as being tolerant to extreme conditions. This is why cassava has been called the "famine security crop" (Philip, 2005). Cassava is of two types; the bitter and the sweet cassava, and they contain cyanogenic glucosides, which break down into hydro-cyanic acid after it has been harvested. The acid makes raw cassava very poisonous for animal and human consumption. Processing of cassava is therefore important as means of removing this poison, increasing its palatability and the storage life.

Cassava processing is a household business as children help in peeling while the women are mostly engaged in the processing, which is done to stop physiological and microbial spoilage, reduce the cyanogenic glucosides content (Asiedu, 1989) and convert the roots to other products which are more acceptable. However, several constraints affect cassava processing which limit the contribution of the crop to the nation's economy (Hawn, 1989; Henry, 1999 in Adebayo and Sangosina, 2005). For instance, the cyanide content in cassava is a major limiting factor to its utilization, but can be reduced by appropriate processing innovations, (Oyewole and Aibor, 1992). Lack of fund and inadequate storage facilities also affect its processing.

Products derived from cassava include gari, starch, tapioca, fufu, pellets, flour and chip. International Institutes for Topical Agriculture (2004) survey of cassava utilization found that 70%, 15%, 10%, 5% of farmers respectively make gari, starch, fufu and tapioca from cassava.

Gari is cream white granular flour with slightly fermented and slightly sour taste made from fermented, gelatinized fried cassava tubers. The processing of cassava into gari

involves certain units of operation. Fresh tubers are peeled, washed and grated. The grated pulp is put in porous sacks, which are weighed down with heavy stones for 3-4 days to expel the water from the pulp while it is fermenting. In some areas, hydraulic jacks are used to expel the water from grated cassava. The dewatered and fermented pulps are sieved and the resulting fine pulp is toasted in a frying pan. Palm oil is sometimes added during toasting with constant stirring so as to present all granules to the heat, to prevent the pulp from lumping and burning. This has an additional effect of changing the color of the product from white to yellow (Alinor, 2002).

Fufu is another form of cassava derivatives. It is a fermented wet-paste made from cassava. It is an indigenous food of most Nigerians in the south. Fufu is processed from cassava by steeping whole or cut peeled cassava roots in water for a maximum of three to five days depending on the ambient temperature. During steeping, fermentation decreases the PH, softens the tuber and helps to reduce potential carcinogenic compounds. When sufficiently soft, the roots are broken by hands and sieved to remove the fibers.

Cassava chips are another product of cassava. It is widely used in Nigeria especially in Enugu state. Fresh roots are peeled, washed, boiled in water and sliced into thin longitudinal slices (chips) with knife or cutter. The chips are then poured into a local basket and steeped in water for 1-2 days during which the water is changed once or twice. The chips can be consumed at this stage. Starch is another product of cassava. Cassava roots are peeled, washed and grated. The grated pulp is steeped for 2-3 days in a large quantity of water, stirred and filtered through a piece of cloth. The starch sediments are air-dried under shade. It is used for textiles and in plywood industries as adhesives (NRCRI, 1986). Pellet is obtained from dried and broken roots of cassava by grinding and hardening into a cylindrical shape. The cylinders are about 2-3cm long and about 0.4-0.8cm diameter and are uniform in appearance and texture; they are produced by feeding dried chips into the pelleting machine, after which the diameter are screened and bagged. During the processing of cassava flour, the residual pulp, which is separated from the starch in the screening process, is used as animal feed. The market for cassava can be divided into two categories namely the traditional food oriented market and the emerging market for industrial processed cassava products. The vast majority of cassava grown in Nigeria is processed and sold through traditional marketing channels, which are fairly well known.

Cassava is one of the major sources of energy in Nigeria. That is why it was chosen as one of the focal crops for improvement and development under the nation-wide Agricultural Development Programme (Isiorharoja and Idoge 2005). This, perhaps led to the pronouncement of a presidential initiative on the crop. In 2000, the President of Nigeria, Chief Olusegun Obasanjo announced the initiative to promote cassava as a foreign exchange earner in Nigeria in addition to satisfying the national demand. This is in line with the government policy to give agriculture the highest priority, to reduce poverty in the rural areas and to facilitate economic growth. The challenge of the initiative is to make Nigeria earn 5 billion US dollars per year in value added cassava exports within three years, from year 2003 – 2006, (IITA, 2001). The diversification and expansion into new growth markets like ethanol, starch, livestock feed and household flour as substitutes for various imported items present real opportunities for income generation of the rural populace.

The initiative also seeks to develop and satisfy the huge untapped domestic market for cassava as raw materials in the industrial sectors as well as building capacity for export market (RMRDC, 2004).

The objective of the presidential initiative on cassava is to expand primary processing and utilization to absorb the national cassava production, identify and develop new market opportunities for import substitution and export, stimulate increased private sector investment in the establishment of export oriented cassava industries, ensure the availability of clean planting materials targeted at the emerging industries, increase the yield/productivity and expand annual production to achieve global cassava competitiveness for the development of

the Nigerian cassava sector and integrate the rural poor especially the women and youth into the mainstream of the national economy (IITA, 2001). The programmes or the initiatives are implemented through subcommittees drawn from the public and private sectors (Obasanjo, 2003). The ministry of commerce facilitated a trial export of 1000 tons of cassava chips to China in 2003.

However, to meet the volume of demand from China and perhaps other countries, the government through the ministry of commerce will have to invest extensively in bulking/storage warehouses. The Federal Government has to facilitate the revival of the railway cargo transportation wide, in order to guarantee the availability of cargo volumes for export of the cassava products. This is critical for Nigeria to meet the target of the initiative, however government intervention and efforts of non-governmental organizations in the cassava sub sector had led to a number of measures that support the production of cassava and this date backs to 1986 (Bello, 2003).

The current drive towards higher levels of commercialization of cassava processing under the presidential initiative on cassava requires that the scale of cassava processing be increased and the profitability of the different derivatives tracked. This study will concentrate on three derivatives namely, cassava chips, flour and gari, because the presidential initiative concentrates on them and they are the common derivatives on the study area. Since processing of cassava is an income generating enterprise in Uzo-uwani, the profitability of the derivatives will be examined.

1.2 PROBLEM STATEMENT

Food security has continued to be a problem in many developing countries. It has been indicated that more than one billion people in the developing countries including Nigeria live below the poverty line and do not have enough food to meet energy and protein requirements for healthy and productive life (FAO, 1996)

Cassava is one of the major sources of energy and the multiplicity of its use makes it indispensable for food security (Asiedu, 1989). Cassava per capita consumption is of very high and provides 80 percent of the total energy intake of many Nigerians (FAO, 2002). Its importance forms the premise of the presidential initiative on crop, which is one of the major reforms in Nigeria's economy from 1999. It is expected that returns from the exports of cassava derivatives especially chips will facilitate the realization of National Economic Empowerment and Development Strategies (NEEDS) targets of \$5 billion a year from agricultural exports.

However, several constraints affect cassava processing which limit the contribution that the crop makes to the nation's economy (Henry, S.K, A. Westby and C. Collinson, 1999). The constraints include the following, lack of fund, inadequate processing and storage facilities and inefficiency in input supply and distribution, high cost of frying pans, inadequate know-how on processing and storage to enhance shelflife, high transaction cost, market uncertainty, inability of the processors to keep adequate records of production cost as well as the tedious operation technology (Bello, 2003).

It is documented that increasing hectareage, fallow length and use of organic and inorganic fertilizer increases cassava output (Isiohoraja and Idoge, (2005); Osugri 1996; Arene and Mkpado(2004). Very few works, example: Ekwe and Ekwe (2005), Alinor (2002), Oyewole and Sanni (1995) and Ayinde, I.A, O.F. Ashaolu, S.A. Adewuyi and M.U. Agbonlaho, (2005) examined processing and marketing of cassava products. The study by Ekwe and Ekwe (2005) concentrated on processing of cassava into gari and its marketing. There was no report on the marketing channel which should have given insight into the development of the processing enterprises and marketing margins associated with each channel. Similarly the study by Alinor (2002) determined the profitability of processing cassava into gari and fufu in Nsukka and did not consider other derivatives like chips, and flour. Presently, the presidential initiative on cassava concentrates mainly on export of cassava flour and its use in baking industry, production of starch and cassava chips as well as export of gari. The need therefore, is to document the present experiences of farmers in processing and marketing of

cassava derivatives. With respect to rural economy, where most of the cassava productions take place and on which the Federal Government will rely to succeed in this reform initiatives, the questions are: which cassava derivative gives the highest revenue to farmers and what marketing channel should farmers adopt? This is because improving processing and marketing efficiency of cassava products will reduce food insecurity, poverty and enhance the success of the reform initiatives on cassava.

COMPARATIVE ECONOMIC ANALYSIS OF SELECTED CASSAVA DERIVATIVES IN UZO-UWANI LOCAL GOVERNMENT OF ENUGU STATE, NIGERIA

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