

Strategies for Resuscitating the Production of Jute Sacks in Nigeria

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Abstract- The use of jute sacks in Nigeria dates back to the 1960's when it was used for packaging agro raw materials like cocoa, groundnut, coffee, cotton, e.t.c for local consumption and export. Due to increased demand for jute sacks, the Federal Government was prompted to establish two factories in the Country, solely for the production of jute sacks. However, the production level could not meet the requirement of the industry due to a number of factors which include inadequate supply of raw materials which is basically kenaf fibre, lack of technological know-how and equipment, e.t.c. Consequently, the factories have since closed down and commodity exporters have switched to the use of synthetic sacks for packaging of agricultural produce. In the early 2000's, there was re-awakening of international interest in natural fibres following the ban on haulage of agricultural commodities and allied products in synthetic sacks in the international markets. The demand for jute sacks in Nigeria was therefore met through importation, leading to a minimum annual expenditure of 15 million US dollars. In addition, with the recent renewed interest by the government for expanded production of agricultural products for export, being part of the Federal Government Transformation Agenda, it has become imperative for the government to deliberately promote the production of kenaf and establish pilot plants for production of jute sacks from kenaf in the country. This paper therefore reviewed the strategies required for the resuscitation of jute sacks production in the country, which include; increase kenaf fibre production; improve technological know-how and innovation; increase investment in the sector through public-private partnership arrangement; increase consumer awareness by highlighting the environmental friendliness of kenaf products. With the proper harnessing of these factors, the great potential in kenaf plants and jute sacks production in Nigeria would be exploited towards enhancing the economic well-being of the farmers, processors, exporters and others involved along the value chain.

Keywords: Jute Sacks, Kenaf Fibre, Agricultural Commodity and Resuscitation

Introduction

Prior to the discovery of oil in the late 1950s in Nigeria, the main source of foreign exchange generation by the country was the export of agricultural produce. Between 1960-1969, Nigeria was a major exporter of cash crops like cocoa, coffee, cotton, cashew, groundnut, grains, etc., (Aribisala, 1993). The volume of agricultural commodity

export during the period increased from 1,220MT to 1,409 MT (FAO, 2013) with annual output growth rate for agricultural products being 3%-4% (Osuntogun et al., 1997). These agricultural products are usually packed in low cost sacks, commonly known as jute sacs for both the local market and export (Aribisala, 1993, Ogunwusi, 2003 and RMRDC, 2007). The jute sacks are made from fibre plants such as jute and kenaf plants, which are locally grown in Nigeria. The sacks are made in varying sizes to package agricultural produce in weight ranging from 50 to 100Kg.

As a result of increase demand for jute sacks for packaging agricultural produce and to reduce foreign expenditure on jute sacks importation, the Federal Government established two factories for producing jute sacks in Nigeria. The two factories, which were located in Badagry, Lagos State and Jos, Plateau State respectively had processing capacity of 20, 000 tonnes of retted fibres. It was expected then that the raw materials (kenaf) would be grown and sourced locally to feed the factories. However, production level could not meet the requirement of the industry partly due to lack of raw materials and other production problems. Consequently, the two factories have since closed down and commodity exporters have switched over to the use of synthetic sacks for packaging agricultural produce in Nigeria (Ogunwusi, 2003 and Fadare and Amusa, 2005).

However, the re-awakening of international interest in natural fibre, following the ban on haulage of agricultural commodities and allied products in synthetic bags in the international market in 2002, provided hope for increased demand for sacks made from kenaf in haulage of industrial and agricultural produce all over the world (Ogunbodede, 2012 and RMRDC, 2007). Sequel to this development, the demand for jute bags in Nigeria is being met through importation, leading to expenditure of a minimum of \$15 million annually (This day newspaper, 2004). The situation became worse in 2007, when the Federal Ministry of Finance abolished the import duty waivers on jute bags in an attempt to prevent fraudulent deals between importers and corrupt officials with respect to the tax revenue. This situation was further compounded

when the National Cocoa Development Committee (NCDC) withdrew subsidies on cocoa. This led to soaring of new bags from N40, 000- N45, 000 per bale of 300 pieces at the beginning of the year to N85, 000 Naira (www.vanguardngr.com). This high cost of jute sacks made growers and exporters to resort to the use of old sacks, with the attendant risk of spreading disease and pests, thereby endangering the quality of the commodity. As a result, there was fear that the Nigerian cocoa may face rejection in the international market, since European Union countries, the main consumers of the beans for making chocolate, ice cream, liquor, cakes, cosmetics and beverages, do not allow the use of substandard sacks for exports (www.vanguardngr.com). The International Cocoa Organization, which has no power to ban cocoa imports from any country, had recommended that cocoa producing countries should stop using synthetic sacks and begin to use hydrocarbon-free bags for exports.

In addition, as part of the Federal Government Transformation Agenda, there is a renewed interest by the government for expanded production of agricultural products such as cocoa, cashew, groundnut, cotton, e.t.c. for export so as to regain its prominent position as a prime producer and exporter in West Africa. In view of the above and as a result of Federal government intention of promoting increased export of non –oil products in Nigeria, it is imperative that sustainable facilities be put in place to promote local production of jute sacks in Nigeria. This has become important as a result of the loss incurred by farmers and exporters, the increasing cost of imported jute sacks, the need to develop local industries and increased job opportunities in the country. This paper examines the challenges of the moribund jute bags

production factories and highlights the strategies for promoting jute sacks production locally.

Economic Significance of Jute/Kenaf Sacks

Jute sacks are old traditional sacks made from jute and kenaf fibres (Plate. 1). They are extensively used for packaging materials in the Middle East, Africa, Asia and many less developed countries. They are large, strong and coarse material bags normally used for carrying or holding heavy quantity objects. They are traditionally called sacking bags. Even though jute sacks are replaced by synthetic materials (Plate 2), some applications take advantage of jute's biodegradable nature, where synthetics would be unsuitable.

The specifications and standards of classic jute sacks have remained unchanged for decades. Jute sacks are in demand due to their properties, some of which include: they allow the commodities to breath, resists condensation and keep the pack materials protected for longer time. In addition jute sacks are easier to mark, print and resist wear and tear. Due to their biodegradable nature, jute sacks are also eco-friendly. Comparative analysis of jute sacks with High Density Polyethylene (HDPE) woven sacks shown in Table 1, indicated that jute bag is more superior to its synthetic counterpart in all ramifications. During the last decade, one major innovation made in jute sacks production was treating the bags with vegetable oils products in order to ensure destruction of harmful products (IJIRA, 2012). The bags are therefore referred to as hydrocarbon free bags, which make them more acceptable by importers of cocoa and coffee beans (www.vanguardngr.com).

Table 1: Comparative performance of jute/kenaf and synthetic sacks

S/N	Properties	Jute sacks	High Density Polyethylene (HDPE) woven sacks
1	Seam Strength	Strong	Poor
2	Stack Stability	Excellent	Poor
3	Storage space utilization	Excellent	Poor – Storage space utilization is affected due to low stack height (to avoid stack collapse).
4	Resistance for Hooking	Fair	Poor – Hook holes generally irrecoverable.
5	Drop Test performance (On dropping from minimum height of 16')	Good (all bags survived)	Poor – All bags severally damaged.
6	Surface Texture	Rough (Suitable for stack stability)	Smooth
7	Operational Convenience	Good	Poor – Abrasive nature of bag causes palm injury during manual handling besides the griping inconvenience and laborers are prone to accident risks during stacking and destacking due to slippery surface texture.
8	End-use performance (w.r.t. bursting damage spillage and replacement)	Good	Poor – bags are prone to irreparable damage resulting in spillage and replacement
9	Grain preservation efficiency	Excellent	Poor – due to low air permeability and non hygroscopic nature.
10	% seepage of cement during field trial	1.18%	1.16%
11	Effect of atmospheric temperature and sunlight	Unaffected	Prone to rapid deterioration
12	Dimensional Stability	Good	Poor
13	Reusability	Excellent	Poor
14	Weight	Heavier than HDPE woven bag.	Lighter
15	Cost	Higher compared to HDPE bags but jute bags have attractive resale value	-

Source: www.jute.org (2012)

The total volume of jute sacks traded globally in the previous decade was estimated at 3.8 million tonnes and about 80% of the traded volume was imported into African countries including Nigeria and Ghana for packaging agricultural produce for local market and exports (IJIRA, 2012). It is expected that with the establishment of jute sacks production plants in Nigeria; the country will be able to export sacks to other ECOWAS countries that are producing and exporting agricultural commodities. In addition, the production of jute sacks locally will lead to expansion in kenaf production and processing in the country, thereby leading to generation of more income to Kenaf Growers Association of Nigeria, formed to boost kenaf production

in Nigeria (Ogazi et al., 1997). Likewise, a number of research institutes in the country have carried out research on kenaf processing facilities in Nigeria. Examples of these include the fabrication of small (farmer friendly) and pilot scale kenaf decorticating machines. The initiation and expansion in production of kenaf processing facilities in Nigeria will promote skill acquisition and technological development of jute sacks industry locally (RMRDC, 2007). According to Aribisala (1993), Ogunwusi (2003) and RMRDC (2009), the development of a virile kenaf industry in Nigeria will promote higher net returns for commodities exporters, improve local competence in kenaf growing and processing, as well as saving the nation up to \$25 million annually in foreign exchange equivalent.



Plate 1: Samples of Jute bags used for packing agro products



Plate 2: Samples of synthetic (polypropylene) woven bags

World Production of Jute/Kenaf Sacks

The average annual global production of kenaf and similar fibres in the previous decade was about 3.5 million tonnes.

The major international producers and exporters of jute sacks are Bangladesh, India and China. These countries have significant influences on the international pricing of the commodity (www.alburyenvobags.com and Sixsigma,

2013). Jute sacks production has contributed significantly to agricultural development and employment of these countries. Kenya and Ethiopia are the only Africa

Countries involved in jute sacks production, while other countries including Nigeria, source jute sacks through importation (www.southinvest.gov.et).

Table 2: World production of Kenaf & Allied fibre from 2003/2004 to 2010/2011 in '000 Tonnes (1 tonne = 1000 Kg)

Kenaf & Allied Fibre:	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011
								(provisional)
World	377.29	351.83	327.58	314.4	329.12	279.8	290.1	284.1
Developing Countries	370.29	344.83	320.58	307.4	322.12	272.8	283.1	277.3
Far East	329.88	302.02	264.32	250.51	266.06	217.3	227.6	234.5
China	99.78	86.92	82.82	68.8	86.8	80	80	75.0
India	167	156.4	153	144	139.7	120	131.2	140.0
Indonesia	7	7	7	3.1	4	3.8	3.8	4.0
Thailand	41.33	35.66	4.6	3.6	2.2	2.9	1.8	1.8
Vietnam	12.5	14.2	15	10.6	31	8.8	9	12.0
Cambodia	0.65	0.65	0.65	0.83	0.85	0.3	0.3	0.2
Pakistan	1.62	1.19	1.25	1.59	1.51	1.5	1.5	1.5
Latin America	24.01	25.91	39.37	39.91	39.07	38.5	38.5	27.5
Brazil	10.5	12.65	26.1	25.95	25.66	25.1	25.1	15.0
Cuba	10	10	10	10	10	10	10	10.0
Other	3.51	3.27	3.27	3.96	3.41	3.3	3.3	2.5
Africa	12.7	13.2	13.19	13.29	13.29	13.3	13.3	11.7
Near East	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.6
Developed Countries	7	7	7	7	7	7	7	6.8

Source: Food and Agriculture Organization (FAO, 2012)

Between 1980s and 1990s, jute and kenaf sacks lost their market share to synthetic sacks as a result of improvement on technological changes in the packaging sector. The declining trend in consumption is also reflected in the declining trend of prices of both jute and kenaf raw materials and their products (www.southinvest.gov.et). The image of jute and kenaf as a regional commodity confined to a few countries namely, India, Bangladesh, Nepal, Myanmar and to some extent Thailand and China has also affected their growth. Although, jute's contribution to total export earnings has declined in these countries, its contribution to agriculture and employment generation remains significant. In spite of low prices, farmers have continued to grow jute and kenaf mainly for want of suitable alternatives (Aimin, 2000).

The loss of market share by jute and kenaf to synthetics has been attributed mainly to the price factor. In addition, the growth of synthetics, as an industry, has been more progressive in terms of technological advancement which enables new products to meet exact end user specifications. Also, substantial sums of money have been expended on research and development of synthetics, as the industry is dominated by huge multinational and national companies. They have, therefore, been able to displace jute and kenaf from many segments of the market by superior product specifications and financial strength.

However, with the new rule requiring the use of hydro-carbon jute sacks instead of the synthetic fibre sacks for packaging of exports in the early 2000s, the demand for

jute sacks has been growing in the international market. It was reported that, India exported about 40 million jute sacks, mainly to Europe between 2008 and 2009 and the number is likely to cross 75 million by 2011-2012 (Rashedul, 2011). A number of jute mills in Bangladesh are also producing jute sacks for packaging cocoa and coffee beans to meet the demand from African countries. Closely allied with this, the consumer demand for eco-friendly products has increased in both developed markets such as Western Europe, the United States and Australia, as well as, new markets with emerging opportunities in the Middle East mainly because of heightened awareness of the ill effects of environmental pollution and global warming.

Demand and Supply of Jute Sacks In Nigeria

The five major agricultural commodities being exported by Nigeria in the last decade include cocoa, beniseed, cotton, cashew and soyabeans, among others (Fig. 1.) According to FAO (2012), the average exports of these agro commodities in the 2000s are as follows: 2,170, 685, 194, 163 and 114 metric tonnes (MT) respectively. These figures indicated that the over 3,350 metric tonnes of these commodities were exported using jute sacks of various sizes being imported from Brazil, USA, and Asian countries including India, Bangladesh, China, etc. The imported jute sacks mostly come in 100Kg capacity; with a projection that approximately 3.4 million pieces of jute sacks will be required on annually for exportation of these agricultural commodities.

With the renewed interest by the Federal Government for expanded production of these agricultural products for export, it is expected that the demand for jute sacks would increase by 2020. This development would result in improving the economy of the country through increased foreign exchange earning capacity and further diversification of the country's export base (Balogun, 2012, Dambatta, 2012 and Adelaye, 2012).

As a result of the expected high demand for jute sacks in the nearest future and the foreign exchange involvement, it becomes necessary to meet the supply of jute sacks through domestic production. This could be achieved

through investment in small scale production of jute sacks in Nigeria. The major advantage of small scale plants is the low initial capital requirement which makes it more attractive to small scale investors. The government, however, needs to support this development by putting in place policy measures that will allow for small scale industries to flourish. Such policy measures should include tax cut for local production of jute sacks, improved access to credit by kenaf farmers and private investors, technology, skills and market information, promotion of clusters and cooperatives. The processes constraining optimal production of jute sacks in Nigeria are subsequently discussed.

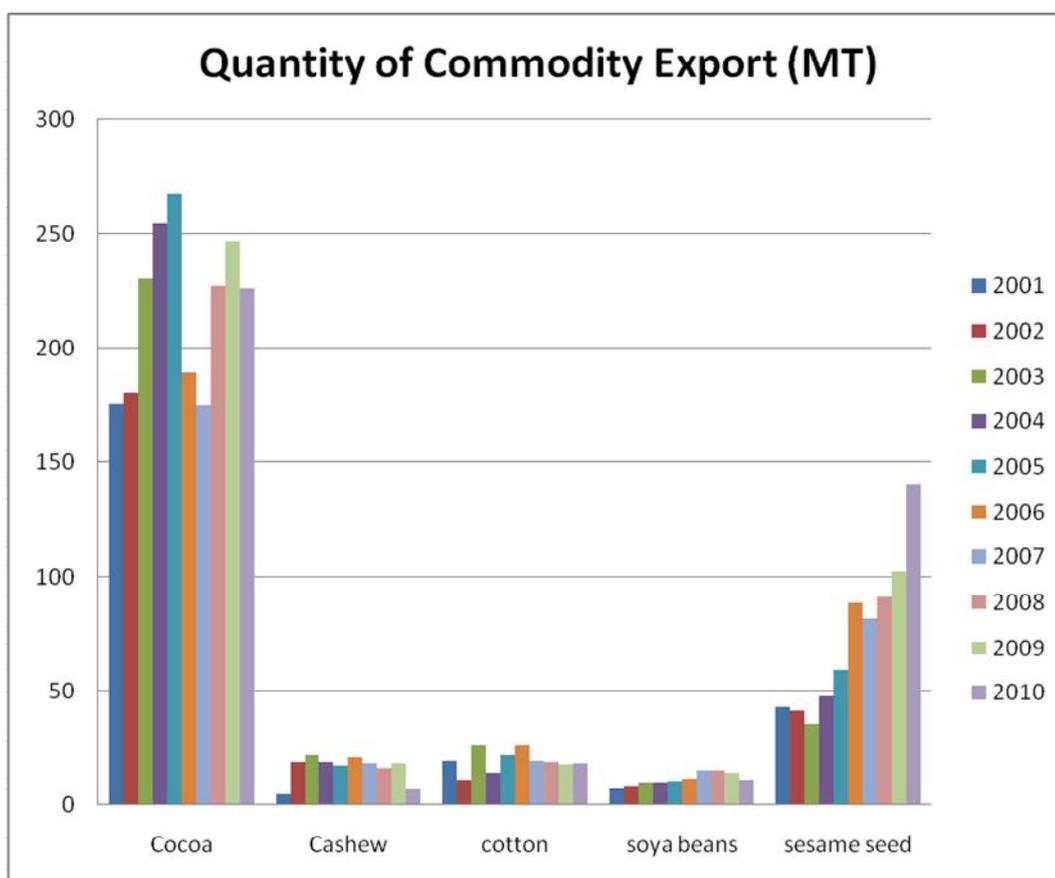


Fig. 1: Nigerian Commodity Export from 2001-2010 (FAO Stat, 2013)

Challenges and Prospects of Jute Bags Production in Nigeria

- **Inadequate Supply of Raw Materials**

The production of kenaf in Nigeria is still at subsistence level and has been declining from 2005 to date. This may be attributed to under utilization of this crop resulting in farmers planting other profitable crops. Meanwhile, Kenaf varieties being cultivated in Nigeria have low yield capacity (11 tonnes/ hectare) when compared to those of China and USA, with yield capacity of 22 tonnes/ hectare (100% different) (RMRDC, 1992).

- **Lack of Technology Know How and Equipment**

The processing technology and machinery for processing kenaf fibres are not locally available (IRAC, 2005 and RMRDC, 2011). Kenaf is being processed in Nigeria using the traditional method of retting, a tedious and time consuming practice. In addition, most of the kenaf processing equipment for production of jute sacks are not locally available; the local fabricators only have the capacity to fabricate kenaf decorticating machines (RMRDC, 2011).

- **Lack of Marketing Outlets**

Lack of market outlet for kenaf products in Nigeria has seriously affected its production, resulting in low level of kenaf production among Nigerian farmers. Efforts by RMRDC in the early 1990's promoted the utilization of kenaf for long fibre pulp production. This was however not back up by adequate private sector investment. As a result, the initiative died down and contract farmers lost interest in kenaf production (RMRDC, 1991, 2003 and 2009).

- **Inadequate Research and Development Network**

While the government of Malaysia earmarked RM 12 million (equivalent of \$3.6M) for kenaf development programme in its rapid development plan (Ogunwusi, 2012), R&D on kenaf production and processing has received little or no attention in Nigeria. Although, the mandated research institutes often have developmental plans for kenaf, lack of funds has been a major constrain in realizing such plans.

Strategy for Kenaf Fibre Development In Nigeria

- **Increase Kenaf Fibre Production**

To ensure sustainable supply of kenaf in Nigeria, the government should formulate policies that would make kenaf one of the crops of national priorities like cocoa, cotton, cassava, rice, etc, as well as encourage all categories of small scale farm holdings, independent large scale farming and even large scale plantation establishment by kenaf processing industries for sustainable supply of raw materials.

The Relevant research institute should develop improved seed varieties of kenaf and collaborate with the Kenaf Farmers Association for the distribution and multiplication of the developed improved seeds. Capacity building should be organized for the farmers on the best evitable cultural practices.

- **Improve Technological Know-How and Innovation**

The process technology and machinery for processing jute and kenaf fibres have not kept pace with modern demands in Nigeria. The skill of jute yarn weaving may not be lacking, though may not be well developed in the country as there are plants already engaged in cotton/textile production. However, the capacity building should be provided for machinery operators in either Kenya or Ethiopia, being the only Africa countries engaged in jute sacks production.

- **Improve Fibre Quality**

The quality of the fibre produced to some extent affects the quality or durability of jute sacks made. More emphasis should be laid on high yielding

varieties in order to ensure the production of quality fibres. To achieve this, seed production, certification and distribution mechanism with private sector participation should be improved upon. There should also be improvement on the conventional retting practices as is obtainable in major producing countries.

- **Investment in Establishment of Pilot Plants**

The supply of jute sacks in Nigeria today is met through importation, in which the country spends minimum of \$15 million annually to import jute sacks from Asian countries. Therefore, investment in production plants for jute sacks will create employment opportunities for millions of persons up stream and kenaf farmers downstream and as well increase the country's foreign exchange savings. Jute and kenaf production provide substantial employment opportunities in the agriculture sector. In addition, production of diversified jute products provides employment in the handicraft and small industry sectors. Many of the production processes of these products do not require power or high cost machinery, and are done in eco-friendly conditions.

- **Increase Consumer Awareness by Highlighting the Environment Friendliness of Jute and Kenaf**

The market promotion programme will adequately highlight the environmental advantages of jute and kenaf over synthetic fibres and while there is the need to work closely with environmental groups to promote the crop.

- **Create a Research & Development Network**

Research and Development (R&D) is the key to diversified growth in the sector. R&D should however be market-oriented and industry focused. Industry inputs and participation should be encouraged and R&D in Government/Public Research Institutions in Nigeria needs to be strengthened to provide maximum benefits to primary producers. Projects undertaken with donor support should incorporate a definitive role for these institutions. With the increasing emphasis on Intellectual Property Rights, a definite framework of cooperation would be established between research institutions under this project.

Create Marketing Outlets within the Country

There is need to create market structures for kenaf products and also provide market information desk for kenaf and its products in Nigeria.

Conclusion

The supply of jute sacks in Nigeria today is met through importation in which the country spends minimum of \$15 million annually to import these products from Asian

countries. The demand for Jute bags, which are mainly used in Nigeria for packaging of agricultural produce such as cocoa, cotton, coffee, cashew seeds, groundnut, etc., for both local market and export is on the increase, as production and exportation of these crops are expanding.

To resuscitate the production of jute sacks in Nigeria, it is imperative that concerted efforts should be made to promote production and processing of kenaf into fibres locally, since inadequate supply of raw materials was one of the factors that affected operation of the moribund jute bags production factories established in the 1960s. As there is no functional jute bags production factory in the country, there is need to establish pilot plants for production of jute sacks in areas where there is comparative advantage for kenaf production by the government or through public-private partnership arrangement. With these strategies and others discussed in this paper, jute sacks production would be resuscitated and if sustained as well, Nigeria may turn out to be a major exporter of jute bags to other West African Countries.

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