SOCIO-ECONOMIC ANALYSIS OF A FAILED PROJECT: THE CASE OF KENAF CULTIVATION IN WESTERN NIGERIA

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Abstract

Cultivation of industrial crops as an import substitution device is one of the received strategies for achieving rapid economic development in developing countries. This study reports the evidence of an empirical study on Kenaf project carried out in three Local Government Areas of Oyo State during 1995 and 1996. It examined the organisational structure of the project, why farmers took initial interest, reasons for its failure and what can be done to reactivate the cultivation of the crop.

Introduction

i. Brief History of Kenaf Cultivation in Western Nigeria

Kenaf (Hibiscus cannabinus. L.) was amongst the earliest industrial crops cultivated in Nigeria to provide raw materials for the domestic industrial plants. Opeke (1990) reports that the first recorded attempt at experimental production of Kenaf in Nigeria was at the defunct. Ebute-Metta Economic Botanical Garden, Lagos which was created by the early colonialists as a plant museum for the collection and study of economic plant species of Anglophone West African Countries. The Garden was transferred to Moor Plantation, Ibadan when the latter was established around 1894. At Moor Plantation, Kenaf was multiplied and the seed was distributed to farmers mostly in the northern parts of old Oyo province.

A more organised and important effort at commercial production and processing of Kenaf in the former Western Nigeria was spurred in the late 1950's by the boost in the Nigerian export crops as a result of the emerging regional government structure. Consequently, the Western Regional government took interest in the prospect of a sack manufacturing company which was to be fed with Kenaf produced on the Nigerian soil.

The technical feasibility proved favourable and hence the Western Region started production of Kenaf fibre in the early 1960's as an input into the industrial production of jute bags.

On account of its inherent qualities, jute bags were exclusively used for packaging cocoa beans not only in Western Nigeria but also in most parts of the world. In an effort to complement cocoa bean production in the Region, the government incorporated the Nigerian Fibre Industries Company Limited (NIFINCO) with headquarters at Ibadan, and the Jute Bag Processing Factory at Badagry was commissioned in 1966.

The government had earlier in 1962 started Kenaf cultivation at three levels: plantation, absentee farmers with adequate financial resources, and peasant production. Under the peasant production arrangements, massive cultivation was undertaken under contract with farmers to produce fibres to keep the factory going. However, NIFINCO soon ran into series of problems and the running of the project consequently became uneconomical both to the company and the farmers, as kenaf was produced by farmers but this was either not purchased by the factory or the price was not remunerative. The whole project therefore collapsed.

Today, kenaf-based products are being manufactured in Nigeria by private firms using imported kenaf fibres. Similarly several thousand tonnes of long fibre pulp are being currently imported annually into the country to keep the existing mills functioning at less than 50 per cent installed capacity. [Opeke (op. cit), Esuru-Oso (1990) and Oyeneye (1990).]

ii. Kenaf as an Economic Plant

Kenaf is a non-woody annual plant with a very short growth cycle (100 to 130 days), but good long fibre yield. It is a leading substitute for jute (cochorus capsularis) and is a fibre of industrial importance.

Ogunlela and Adeoti (1990) captured it all by asserting that there is scarcely any part of kenaf plant that is wasted. The leaf which contains between 25 and 30 per cent crude protein is harvested green and eaten as vegetable in parts of the savannah zone of Nigeria; the leaf is also acceptable to cattle as silage. The fibre has various uses such as in making sacks and ropes, while the stripped woody stem is generally used for fuel, fence-making, chicken pens and paper. Kenaf seed contains edible oil which can be used for making margarine and high-protein stock feed. The cake obtained after oil extraction can be used for compounding animal feeds, and the roots are also useful for pulping in paper manufacture.

Esuru-Oso (op. cit) lists other uses of kenaf retted fibre which include hessian cloth, tying cords, carpets and rugs. Oyatoye (1990) went further to include such other uses as in making hard cardboards, asbestos ceilings, roofing sheets, camouflage clothes for soldiers, as well as jeans and canvass shoes.

iii. The Problem And Objectives of Study

As earlier mentioned, the kenaf crop is a commodity of great value with a wide range of uses. Apart from its use in long and medium fibre pulp, paper and paper products and in making ropes, kenaf is also used in making sacks for bagging products such as cocoa (both for local processing and export), coffee, rice, kolanuts, beans, maize, groundnuts, palm kernels, livestock feeds, wheat flour and many other grain and root crops. All of these food and industrial crops have profound economic impact on the national economy and one of the kenaf's finished products (sacks) plays a vital role in providing containers that facilitate commercial transactions in these crops. The other finished products of kenaf, as mentioned above, are paper and paper products on which the nation spends huge amounts of money every year to import. The economic importance of paper and paper products in the national economy lies in their contributions to education, research and information dissemination.

According to the Raw Materials Research and Development Council Report (1991), the most critical raw materials-related problem in the Pulp, Paper and Paper Products, Printing and Publishing Sector of Manufacturers' Association of Nigeria (MAN) revolves around the sourcing of long fibre pulp. The report added that there has been an ever-increasing demand for, and the usage of paper in Nigeria since independence which is reflection of the development pattern in the country.

The pulp and paper mills at Jebba, Oku Iboku and Iwopin have not been able to meet local demands, while importation of long fibre pulp continues to rise from year to year.

Table 1 presents data on Nigeria's import of selected wood pulp, waste paper and jute, 1981 to 1991. The table shows that Nigeria has been spending huge sums of money annually on the importation of these products which the country is naturally endowed to produce.

Given the fact that the kenaf crop is a commodity of great value with a wide range of uses particularly in making sacks, paper and paper products, and in view of the large market created by the immense domestic demand, there are strong economic arguments for Nigeria to rescucitate the cultivation of kenaf as an import-substitution crop, which can be processed into the various uses as enunciated above.

However, the issue of resuscitating kenaf cultivation raises several questions, particularly with regard to the failed attempt by the former Western Regional government to encourage farmers to grow the crop. In this connection, the questions to be asked are: how was the government project organised? Why did it fail? What problems did the farmers encounter in kenaf cultivation? Are farmers willing to resume production and, what are their suggestions for reactivating the crop in their area?

Subsequent to the above questions, the objectives of the study are the following:

- (a) to examine the organisational structure of government's Kenaf Production/Processing Project in Western Region of Nigeria in the 1960's:
- (b) to find out why farmers in the savannah area of Oyo State showed initial interest in the project;
- (c) to examine the reasons why farmers in the study area discontinued kenaf cultivation;
- (d) to find out the farmers' perception of how the problems of kenaf cultivation in the area could be solved in order to reactivate the crop.

iv. Kenaf Production, Processing and Marketing Systems

(a) Cultivation System

Kenaf is a crop that easily adapts itself to a wide range of climatic and soil conditions in the tropical and subtropical regions. It normally requires a well-drained sandy-loam soil and gives the greatest response to nitrogen, potassium and phosphorus in that order. It performs well in areas with about 600mm of rainfall over a period of four to five months, but because of the problems of lodging and subsequent difficulty in harvesting, kenaf should not be cultivated in areas that experience strong winds or heavy rains (Soyinka, undated).



Table 1: Nigeria's Import of Selected Wood Pulp, Waste paper & Jute, 1981 - 1991 (N)

Items/Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Pulp & Waste Paper	3,203,555	8,147,410	1,572,358	1,679,265	金なく	- 33	5 E m	n.a	n.a	n.a	12.2
Sulphate Wood pulp	297,060	472,383	0 0 0		17,623,923	2,502,330	23,168,345	n.a	n.a	n.a	
Semi-chemical Woodpulp	550,852	462,661	2,378,528	1,396,116	1,075,699	3,742,783	4,843,269	n.a	n.a	n.a	1000
Jute	2,637,995	1,445,152	2,978,998	*3,692,284	7,515,404*	*3,456,827	*1,079,084	n.a	n.a	n.a	1 0 m
Pulpwood, chips & Wood Waste	A de la		1 1 8		10 TO	- 8	alen.	n.a	na o	n.a	668,673
Mechanical Wood pulp	DIC OF	SE LO		LIPA, SI	116 m		one one	n.a	n.a	n.a	2,988,328
Chemical Woodpulp	[2.U	DOG TO THE STATE OF THE STATE O	- 8	3.86	9 3 3 1 S	- 1		n.a	n.a	n.a	9,576,738
Total	6,689,464	10,527,606	6,929,884	6,767,665	26,215,026	9,701,940	29,090,698	n.a	n.a	n.a	13,233,739

Source: Nigeria Trade Summary, December Issues

* = Including jute cutting & waste

not available

Land preparation for kenaf entails a lot more finesse than for most other crops, hence it is essential to clear and preferably burn all debris before ploughing and harrowing the land. Fertiliser is applied by broadcasting, and after germination it is essential that seedlings are thinned to one plant per stand in order to achieve a close spacing of three to four inches apart along the rows so as to encourage fast growth and enhance bark-fibre production (Opeke, op. cit.).

In the savannah areas of Southwestern Nigeria, the best period for planting kenaf is between 2 to 3 weeks after the beginning of rain in an area. A sharp drop in potential yield occurs if it is planted later than 3 to 4 weeks of its optimum planting date. With timely planting and adequate rainfall, a yield of one tonne retted fibre per hectare is achievable (Ogunlela & Adeoti, 1990 and Soyinka, *op. cit.*).

Weeding is minimal and there may be no weeding at all from planting to harvesting if land is thoroughly prepared; and if adequate moisture exists, kenaf is planted in relay, which makes it possible to grow two crops on a piece of land in one calendar year (Opeke *op. cit.*). Kenaf is susceptible to some pests and diseases, such as nematode and insects, such as leaf defoliators, stem borers, flower and capsule borers (Soyinka, *op. cit.*).

(b) Harvesting and Processing Systems

To harvest, the plants are cut at ground level, usually by hand and are tied in bundles. However, the use of machine is preferable for better harvesting, as well as and to cut down on labour expenses. The tied bundles are piled and left in the field for some days to permit defoliation. Defoliated stems ret more evenly and produced cleaner fibre than leafy ones.

One of the major constraints of kenaf production is water for processing. Kenaf plants have to be retted to obtain fibre. The areas of kenaf production should therefore be very close to sources of water supply.

Two methods are possible for extracting the fibre from the stalks. The first is the initial decortication of freshly harvested plants followed by ribbon refiring. This is a more laborious method of fibre extraction. This method has the advantage that all residues are left in the field, less weight is transported, less water is required for retting and fibre washing is easy; however, best quality fibre is not produced. The second method is initial retting followed by decortication of dry retted stalks. This method produces better quality fibre [Ogunlela and Adeoti (op. cit.)] and Soyinka, (op. cit.)].

Materials and Method

This study was carried out in three local government areas of Oyo State, namely, Ogbomoso North, Ogo-Oluwa and Afijio. These areas lie in the derived savannah zone with a mean annual rainfall of about 1000mm. The crops grown are typically maize, cassava, cowpea, yam, tobacco, guinea corn and soybean.

The survey took place between September 1995 and February 1996 with the aid of structured questionnaire administered by research assistants. None of the respondents is currently growing kenaf, but they are either previous growers or their relations who know much about kenaf cultivation. The extension agents in the Oyo State Agricultural Development Project Office in Ogbomoso, Igbo-Ile together with farm settlers in Ogbomoso and Ilora helped to locate the respondents. These farmers were met during their fortnightly meetings and all of them so reached were interviewed, giving a total of 50 respondents. The field survey data were complemented with secondary data obtained during literature search

Results and Discussion

i. Organisational Structure of Government Kenaf Project

Evidence from secondary sources [(Esuru-Oso, op. cit.), Ogunfowora (1973) and Opeke, (op. cit.)] reveal that the government of the former Western Region, having recognised the need to produce kenaf on the Nigerian soil, embarked on an extensive experimentation in the late 1950's, the results of which proved that kenaf fibre production was Consequent technically feasible in some parts of the Region. this favourable result, a kenaf fibre production project was begun in the early 1960's. The peasant production aspect was organised on the basis of a variant of a supervised credit scheme to ensure that farmers used The Ministry of Agriculture and Natural recommended practices. Resources (MANR) and NIFINCO were jointly responsible for the management of the project. The latter was responsible for research, seed multiplication and distribution, extension education, land preparation, planting, fertiliser distribution and application. In order to facilitate adoption by farmers, payments for services and materials provided by the government were made at the end of the production season. In addition, the costs of these services and materials were highly subsidised as shown in Table 2:

Table 2: Level of Input Subsidy in Kenaf Production

Input	Subsidy rate (%)
Seed	40.00
Fertiliser	42.90
Ploughing	37.50
Harrowing	41.67
Planting & Fertiliser	33.33
Decortication	100.00

Source: MANR, Ibadan

NIFINCO, on the other hand, was responsible for the distribution and maintenance of decorticating machines, the organisation of purchases, and the retting of fibre.

Each farmer was required to harvest his own crop at his own expense after which NIFINCO would arrange to purchase the decorticated kenaf ribbons. However, kenaf fibre quality produced by peasant farmers were not uniform from farm to farm, hence there was need for grading to enable premium price to be paid for better quality fibre. In most cases, it was reported that grading was largely left too much to the visual judgement and discretion of NIFINCO buyers or their agents and this caused overpayment or underpayment to farmers.

ii. Reasons for Farmers' Initial Interest in the Crop

In order to feed the jute bag factory at Badagry with raw materials, massive cultivation of kenaf commenced in the former Western Region in 1962. According to Opeke (op. cit.) the factory had a capacity to produce 12 million jute bags per annum. In order to elicit the interest of the farmers in the crop, NIFINCO backed its operation with one of the best ever organised extension advisory services in Nigeria, an effort which put nearly 30,000 acres of land into kenaf production around Ibadan/Oyo areas of the Region.

In this study respondents were asked why kenaf cultivation was adopted in the area. Various reasons were given as contained in

Table 3: Reasons for Farmers' Adoption of Kenaf Crop

Reasons	No of Farmers	% of Total
Government provided extension services	26	no 52 sons
Government provided incentives for its cultivation	25	50
It is a cash crop	23	46
It is a very useful crop	18	36
It was introduced as a new and profitable crop	16	32
It replenishes the soil and controls weed growth	12	24

Source: Field Survey 1995/96.

The responses as indicated in Table 3 reveal that all of them individually and collectively exhibit significant spirit of entrepreneurship by promptly availing themselves of perceived economic opportunities offered by the kenaf crop. In a virtually traditional agriculture, one could easily recognise the economic rationality exhibited by the farmers in adopting kenaf crop (a new crop) on account of (i) the cash earnings (46%), (ii) the extension service provided by government (52%), (iii) the cost savings offered in form of government input subsidies (50%), (iv) the industrial usefulness of the crop which tends to guarantee assured markets for the kenaf crop (36%), (v) the potential profitability of the crop as assured by government (32%) and (vi) the advantages that the defoliation of the kenaf plant on the field restores the nutrient removed from the soil, and the weed control advantage of kenaf cultivation (24%).

Available time-series data tend to lend support to the cross-sectional evidence reported above. According to Ogunfowora (*op.cit.*) the level of kenaf fibre production by farmers in the Region increased steadily from 1,479 tons in 1966 to 2,700 tons in 1969, an increase of about 183% in four years.

iii. Respondents' Perceived Reasons for the Failure of the Project.

Inspite of the initial enthusiasm shown by farmers in adopting kenaf cultivation, the whole project collapsed within a short period of its inception. In this study, respondents were asked to state the problems which they encountered and to give reasons for the failure of the project from their own perception of the situation. The responses given by the respondents are summarised in Table 4.

As contained in Table 4, many factors were responsible in the eyes of the respondents, for the collapse of the project. First, farmers expressed the fact that kenaf production was very labour intensive. From our knowledge of kenaf production system as provided in the earlier section of the paper, we saw that kenaf cultivation require a lot of labour inputs especially with regard to bush clearing and burning, ploughing and harrowing, fertiliser application, thinning, harvesting, and processing. It is in the light of its labour intensity that Opeke (op. cit) asserts that kenaf is not a crop of 'cutlass and hoe' farming, but a crop that is culturally suited for mechanised agriculture.

The respondents also complained that the price offered by NIFINCO was very low. This, in part, had contributed to the unprofitability of the crop to the growers. NIFINCO even went further to make matters worse when as mentioned by the respondents, it failed to purchase the kenaf fibre produced by the contract farmers. As the farmers had no alternative market or use for kenaf, they ultimately demonstrated a sense of economic rationality by shifting resources back to foodcrop production which have alternative uses as subsistence goods as well as cash crops. Processing problems were another factor in the failure of the project as the respondents claimed that they were unable to overcome the difficulties posed in the discharge of these functions. The processing functions of kenaf consist of decortication of stalks, ribbon refiring/retting, washing and drying. Decortication requires the use of machinery which had to be provided by NIFINCO, while retting requires water and involves transportation of fibre to retting tanks or pools. Farmers encountered great difficulties in citing their farms very close to water. Another important problem of processing is its itching effect on the skin, thus making processing an unpleasant task for growers.

Table 4 also indicates that respondents complained about NIFINCO's continued importation of kenaf fibre in preference to local production. This, indeed, constituted a contradiction of the government's initial and ultimate aim to supply the raw materials requirements of the company from the high quality locally produced fibre in an attempt to conserve foreign exchange (Ogunfowora Op.Cit.). The reported attitude of

NIFINCO also amounted to a breach of the contract made with farmers to grow kenaf to feed the factory.

The last reason in Table 4 is the political interference in government's selection of farmers and company workers. The implication is that the most suitable applicants were not selected for the various arms of the project. This could have led to inefficiency, cost ineffectiveness, and poor performance both at the factory and the farm levels.

Table 4: Respondents' Perception of the Reasons for the Failure of the Project

Reasons Expressed by Respondents	No of Farmers	% of Total
Production was too labour-intensive	42	84
Price offered was not remunerative	33	66
Processing problems could not be overcome	28	56
Cultivation became unprofitable	26	52
We had no alternative use for kenaf	21	42
We produced but government failed to purchase	18	36
We encountered transportation problems.	15	30
The factory preferred to import its inputs.	13	26
Political interference in selecting farmers and company workers.	13	26

Source: Field Survey, 1995/96

iv. Respondents' Perception of how to Resuscitate The Crop.

Since a large number of the respondents are contemporaries of the events which led to the failure of the project, it was decided to seek their own perception of how the kenaf cultivation could be revived in the area. In this regard, it was decided to first ask them whether or not they would be willing to resume kenaf cultivation, and if so under what conditions, and if not, why? In response to this question, 47 respondents (94%) answered in the affirmative, provided the government or any agency interested in the crop continues with the incentives in order to make it profitable. The remaining three farmers (6%) would not be willing to cultivate kenaf either because of old age or because of their lack of faith in government-sponsored projects.

The 47 farmers who would be willing to resume kenaf cultivation, however, explained further what they felt government should do to rekindle the interest of farmers in kenaf cultivation (Table 5).

From the information contained in Table 5, it is clear that the farmers still have fresh memories of the problems of the project and were forthright in suggesting what can be done to remove those relating to kenaf cultivation in the area of study. Adequate funding was suggested by 96% of the respondents. Although this could be interpreted broadly to include provision of input subsidy, this issue cannot be argued strongly because input subsidy is currently not in line with government policy as the various subsidies on agricultural inputs are gradually being removed to allow for free market operations. However, adequate funding is expected to imply among other things, provision of credit and other critical inputs such as water supply to facilitate production and processing.

Table 5: Respondents' Perception of how to Resuscitate Kenaf Cultivation

	No of Farmers	% of Total	
Adequate funding	45	96	
Mechanisation	34	72	
Ready Market	31	66	
Extension Services	25	53	
Government Faithfulness	24	51	
Competitive producer prices	amel 17 q nousne	36	
Assistance with water supply	import its 01 purs.	t bemelen21/inth	

Source: Field Survey, 1995/96

Mechanisation is a *sine qua non* for kenaf cultivation and it is important that the farmers recognised this fact. Mechanisation is required for bush clearing and land preparation; it is also required for kenaf harvesting and processing.

Ready market and competitive producer prices are related issues which guarantee that adequate arrangements are in place to lift the crop when produced, and to pay prices that are not only sufficiently high to cover costs of production but also attractive compared with prices of competing crops in the area.

The respondents have rightly mentioned extension services. These are still needed to educate farmers on the agronomy of the crop and to assist the farmers in having access to delivery of inputs such as fertiliser, seeds, chemicals for disease control, farm machines, etc.

The mention of 'government faithfulness' is perhaps a reflection of

the farmers' experience with the government under the defunct kenaf project. For example, it was reported that NIFINCO and MANR failed to effectively provide most of the extension services contained in the contract agreement made with the kenaf farmers. The respondents are suggesting that this kind of situation should be avoided in any future attempt to resume kenaf cultivation.

IV. Summary and Implications

This study has shown that the failure of the kenaf production and processing schemes in the former Western Nigeria could be traced to poor project management by the supervising authorities. Though the initial response by farmers was enthusiastic because extension was good and the necessary supplies were readily available, this initial impetus was however not sustained due to some critical factors. For instance, the Region's Ministry of Agriculture and Natural Resources (MANR), and the Nigerian Fibre Industries Company Limited (NIFINCO), who were the managers of the project failed to discharge their responsibilities as contained in the contract arrangements they had with the participating farmers.

In the first place, the necessary materials and support services provided by MANR were often very late, resulting in considerable loss of yield. In the second place, decorticators were similarly not distributed by NIFINCO, consequently, many farmers left their crops in the field to dry. In addition, NIFINCO reneged on the agreement to purchase fibres from the farmers. Instead, it started to import raw fibre from abroad. Another major problem was the factory location at Badagry which was obviously too far away from the fibre producting areas, thus allowing the farmers to accumulate huge transportation costs.

The only reasonable option left for the numerous farmers under the above circumstances was a complete abandonment of the project. This unfortunate situation dealt a serious blow to the morale of the numerous resource-poor farmers who often exhibit significant spirit of entrepreneurship by promptly availing themselves of perceived economic opportunities.

Notwithstanding this disappointing performance of the project, the study has also revealed that the kenaf crop is still very relevant to the present-day economic situation in Nigeria. This is made evident by the presence of kenaf-based products being manufactured in the country, as well as the regular importation of long fibre pulp to feed the various mills. It is also pleasant to discover that farmers are still interested in growing the crop, provided that favourable conditions exist

In view of the large market created by the immense domestic demand, there are strong economic arguments for the rescusitation of the cultivation of Kenaf as an import-substitution crop in Nigeria. However, any efforts in this regard must be made to pass through the full project circle management. In particular, more attention should be focused on the four areas of the appraisal stage, viz technical, institutional, economic and financial. Such efforts should also be devoid of unnecessary political interference.

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