PROBLEMS AND PROSPECTS OF SOYBEANS MARKETING IN BENUE STATE, NIGERIA

BY

Godfrey Obiesie Chuke

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Department of Agricultural Economics & Rural Sociology
Faculty of Agriculture
Ahmadu Bello University
Zaria

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DECLARATION

This report is entirely the outcome of the author's research efforts. Except for some ideas borrowed from a miscellany of sources and which have been duly acknowledged, the opinions expressed herein are the author's. They have not been taken from any other report that may be existing anywhere on the subject.

Godfrey O. Chuke

DEDICATION

This, but many more
To your loving memory
Dad,
Thanks for leaving chips
Of the star you were
You'll shine for ever.

Obiesie, 11/6/83

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ABSTRACT

A survey of sixty soybeans farmers in three Tivtspeaking districts, viz, Gboko, Katsina-Ala, and Vandeikya; and twenty soybean traders in two soybeans markets, namely Tyowanye and Wanune, in Benue State was carried out to identify and describe the problems in the marketing system for soybeans in the study areas; to determine the marketable and marketed surpluses of soybeans among the selected farmers; to determine the factors that affected both surpluses and to assess the prospects for an improved soybean marketing system in the state. The results of the study show that there were mainly problems of low pricing, transportation and unreliability of soybeans traders as farmers' main sources of market news and information; but also problems of poor market information system; inadequate storage facilities; and lack of grades and standards in soybean marketing system in the state.

The problem of poor pricing of the crop, especially as it relates to the Nigerian Groundnut Board (N.G.B) should ease if the board, in fixing producer prices, gives more weight to farmers' production cost and other relevant domestic market variables, while reducing or even completely removing the influence of world market prices on domestic producer prices (since the board no longer finds it necessary to export soybeans from

the country). The other problems identified were largely structural in nature, and would hopefully diminish as the state moves further along the road of development.

Using correlation analysis, the study found that factors such as "soybeans output", farmers' "family strength" and "soybean price" had positive and significant effects on marketed soybeans surplus. Increase in these factors should therefore result in increase of the surplus. The introduction of improved soybean lines, coupled with the possibility of supplementing human labour with machine labour in soybean cultivation is likely to bring about increases in soybean yields in the future. These factors therefore point to good prospects for increased soybeans supplies in future, other things being equal. The prospects for increased soybean demand are also assessed as good. This is due to the increasing use of soybeans for the production of the local food - seasoning material called "daddawa", the increasing use of soybeans by vegetable oil mills in Nigeria for the production of soybean oil and meal, and also due to the plan of the Benue State Government to establish a large soybean processing plant in the state. Entrance of the state government, as a major soybean buyer, in the soybean trade would help to stabilize the market.

Given good demand and supply prospects, and the expectation that the problems in the soybean marketing

system in Benue State will gradually reduce as more economic and infrastructural development occur in the state, the study concluded that prospects exist for increased and improved soybean marketing in the state.

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CHAPTER 1

INTRODUCTION

1.1 History of Soybean in Nigeria

Soybean (Glycine max (L) merr) is one of the oldest crops with documented history dating as far back as 5000 years ago (Mathew, 1977). Documented evidence about the origin of the crop is not quite conclusive, but it is believed to be a native of East Asia. The first recorded effort at growing Soybean in Nigeria was made in 1908 (Ezedinma, 1965), at the Moor Plantation in Ibadan. Soybean breeding then was not very successful because the exotic seeds in use had germination problems. Subsequently in 1928, Soybean was successfully grown in Samaru, Zaria (Faryna, 1978). Agronomic research on the crop has continued since then for the purpose of developing soybean varieties with high yield, good seed quality, low shattering tendency, and resistance to insects and diseases. However no lines of soybean seed were formally recommended by the Institute for Agricultural Research (IAR) Samaru until very recently, even though some six exotic varieties have been grown widely in the country (Leleji and Adedzwa, 1983). At the present time, the most commonly grown variety is called Malayan. The Malayan has a good number of useful characteristics; however it is often considered unsuitable for commercial soybean production because of its low yield quality. Two other lines M216 (Samsoy II)

and M79 (Samsoy I) are on the other hand, believed to yield higher than the Malayan. The two lines are also believed to be more resistant to shattering, and to be shorter season lines (Leleji and Adedzwa, 1983). They were in February 1983 recommended for multiplication and use on farmers' field around Benue State where trials with them had consistently given higher yields than the Malayan for about four years. Another variety, Jupiter, is believed to be more suitable for areas around Ibadan in Oyo State (Hawaiian-Agronomics, 1980).

1.2 Nutritional Importance of Soybean

Soybean is an excellent source of a number of important nutrients. It is 4% protein, and 20% fat by dry weight. It also contains some vitamins and minerals. Table 1 gives the percentage compositions of whole soybeans and soybean meal.

Table 1. Average composition of whole soybean and soybean meal.

Item	Protein	Oil	Carbohydrate	Ash
Whole soybean	39%	18%	25%	4.8%
Soybean meal	40%	50%	33%	6.0%

Source: Nyiakura, 1983.

Soybean protein has an amino acid profile which is close to the optimum recommended by the F.A.O. Its fat too,

is considered nutritionally desirable because it contains large amounts of unsaturated fatty acids. Legumes (Soybean inclusive) and cereals are both not classified as complete protein sources because legumes are low in sulphur amino acids while cereals are poor in lysine (Faryna, 1978). But when soybeans and cereals are combined in diet, the protein in the diet becomes enriched. Such reciprocal protein enhancement can serve to improve the diets of people who subsist on protein deficient foods. Soybean therefore has the potential of helping to ameliorate the incidence of protein deficiency and malnutrition in Nigeria where the entrenched staple foods, the cereals, roots and tubers are known protein - deficient foods. Table 2 shows how favourably soybean compares with some other food crops, as a source of nourishment.

Soybean protein and other nutrients can enter human diet in various forms. It is used in some parts of Nigeria as a substitute (for locust bean) in a locally prepared food-seasoning material called "daddawa", and also as a supplement in some local dishes. (Faryna, 1978; Knipscheer and Ay 1982). Another form in which it is used in the country, in human food, is as soybean oil. And apart from human diets, soybean is also used in Nigeria as soybean meal, for making livestock feeds. Knipscheer and Ay (1982) are of the opinion that the potential for increased soybean production in Nigeria

Table 2. Composition of the cereal grains, pulses, and other tropical food crops.

Food	Cals/ 100g	Protein %	Fat %	Carbo-hydrate %	Vit A	Vit BI	Nicot-nic Acid	Vit C
Millet (meal)	332	5.5	0.8	76	0	0.07	0.08	0
Maize (meal)	362	9.5	4.0	72	0	0.13	0.15	0
Rice (lightly milled)	354	8.0	1.5	77	0	0.05	3.00	0
Sorghum (flour)	353	20.0	2.5	73	0	0.10	3.00	0
Cassava (fresh)	153	0.7	0.2	37	20	0.03	0.70	30
G/nut (fresh)	104	2.0	0.2	24	20	0.03	0.70	10
G/nut (dried)	340	22.0	1.5	60	0	0.15	2.00	0
Cowpea (fresh)	367	18.0	6.0	60	0	0.10	2.00	0
Soybean (dried)	579	27.0	45.0	17	0	0.15	17.00	0
Soybean (fresh)	382	35.0	18.0	20	0	0.30	2.00	0

Source: B.S. Platt, M.R.C. special report No. 302, 1962
In S.I. Bichi, 1983.

today arises especially from the use of soybean as soybean meal in Nigeria's poultry industry. Thus, as a rich source of protein and some other important nutrients, soybean holds bright promises for both humans and animals alike.

1.3 Problems of Soybean development in Nigeria

The problems of soybean development in Nigeria can be group into three as, culinary problems, production problems, processing and marketing problems.

Soybean cannot be eaten raw. It must be prepared into edible form to be nutritionally useful. It however develops some problems during the process of cooking. Some of the most important of such problems of soybean have been summarised by S.I. Bichi (1983) as: the problem of difficulty in cooking because of the hard outer coat of soybean; the objectionable flavour of cooked soybeans which comes off as beany flavour, or bitter taste or grassy taste or astringent taste, and the presence of anti-nutritional factors in raw soybeans. These problems notwithstanding, soybeans can still be prepared into convenient foods if the "right" processes are followed (Ferrier, 1975; Onochie 1975; Faryna 1978).

The production problems of soybeans in Nigeria today derive mainly from the low yield characteristic of the

Malayan which is the most commonly grown variety of soybean in Nigeria at the present time; but also from the labour requirements of the crop. The Malayan is a tall late-maturing, intermediate shatter-resistant variety which yields low in traditional farming system, and is largely unresponsive to improved practices by which productivity can be increased (Hawain Agronomics, 1980). The Malayan, and any other variety of soybean for that matter, also requires a good deal of labour for weeding, harvesting (which for most farmers has meant manually pulling the plant completely out of the ground), and threshing. As was mentioned earlier, the low yield problem of the Malayan and other varieties of soybeans that are currently being grown in the country has led to the development, and more recently the release from the IAR of improved lines known as M216 (Samsoy II) and M79 (Samsoy I). Whereas the average soybean yield as recorded by the Federal Office of Statistics (F.O.S) for Benue State in 1980 was 500 kg/ha, the lines M216 and M79 are known to yield above 3000 kg/ha and 2000 kg/ha respectively, in the same state. It is thus reasonable to expect that soybean yields from Benue state will rise as the new high yield lines come into use on farmers' fields, other things being equal.

Scarcity of processing facilities is another problem which is affecting the development of soybeans in Nigeria. There are some vegetable oil mills in the country which can process soybeans, but there is no such facility in

Benue State at the present time. Because of this, industrial demand for soybeans produced in Benue State comes from outside the state, from the locations of the oil mills in Nigeria. These mills use groundnuts mainly as raw material. Demand for soybeans from the mills therefore tends to follow the fortunes of groundnut production in the northern states generally. When groundnut production goes up, processing capacity for soybeans comes down, and vice versa. In 1979 for instance, groundnut production in the country was unusually low, and demand for soybeans in Benue State was high as a consequence (Hawaiian Agronomics, 1980). Thus processing problems have been having an unsettling effect on the soybean market in Benue State.

Apart from this market-related problem of scarcity of processing facilities, there possibly are other marketing problems affecting development of soybeans in the country. Objective information on these problems does not yet exist. However some idea of what these problems may be, could be obtained from literature on the marketing of other agricultural commodities in the country. Most market research works in the country have been aimed at verifying what Uma Lele (1972) has referred to as the popular opinion about traditional marketing systems in less developed countries; which is that there are imperfections in the systems which tend to reduce the effectiveness of the systems in achieving desired results. Among the imperfections which many market

research works have verified are: the presence of too many intermediaries in the food marketing chain (Thodey, 1968, Ejiga and Robinson 1981); inadequacy of infrastructural facilities such as storage facilities, transportation facilities, credit; market information (Thodey 1968, Olayemi 1972; Adeyokunu 1980); price manipulation by middlemen to their advantage (Thodey 1968, Hays Jr 1975; Adeyokunu, 1980; Ejiga and Robinson 1981); restriction of entry into the market and collusion aimed at manipulating prices (Hays, Jr 1975; Ejiga and Robinson 1981). Writing in 1982, Knipscheer and Ay observed that information is scarce about soybean marketing in Nigeria, and that what information there is, is unreliable because soybeans are marketed mainly through traditional market channels. The authors also observed that many soybeans farmers in Benue State who were covered in their study that year were not happy about the facilities existing for soybeans marketing in the state. It is conceivable that the problems of soybeans marketing in the state are similar to the problems outlined in the foregoing review. However, objective information on the marketing system for the crop is indispensable for a good assessment of the prospect for increased soybeans marketing in the state.

1.4 The Problem and the Objectives of the Study

It was observed in the foregoing paragraph that the main production problem of soybean in Nigeria today

is the low-yielding quality of the most commonly grown variety of the crop, the Malayan. It was also suggested that the release of the two high-yielding varieties of the crop, M216 and M79 offers promises for increased soybean yields in Nigeria generally, but in Benue State in particular. And it was observed that a considerable amount of the current soybean production in Benue State passes through local marketing channels whose nature and extent were reported by Knipscheer and Ay (1982) to be uncertain. The authors also reported that many soybean farmers in Benue State complained about poor marketing facilities that exist in the state. If, as the authors' report imply, there are problems in the marketing system for soybeans in Benue State, what are the chances that the problems will permit the promises offered by newly released soybean varieties to materialize? This is a pertinent question to ask in view of the fact that adequate marketing channels and facilities are necessary within a marketing system in order to ensure that growing demand, stabilized prices and differentials for quality at the processing or consuming level are actually reflected in profit incentives to the producers of the crop. Unless the marketing system works in a way that product prices bear at least, a minimum relationship to production costs, farmers will be very reluctant to incur additional work and expense to increase output or raise its quality, no matter how much promise of higher yields new strains of seeds may hold. In order to answer this question, this study posed the following even more fundamental questions:

1) What are the problems in the marketing system for soybeans in Benue State?
2) To what extent do these problems constrain the amount of soybeans which farmers in the state are producing to sell?
3) How much of soybeans did the farmers produce to sell in the 1981/82 market season?
4) What are the prospects of improving the soybean marketing system in Benue State?

Consequent upon these questions, the study aimed at fulfilling the following specific objectives:

1) To identify and to describe the problems in the marketing system for soybeans in the study area, as seen through the marketing channels, the institutions, the intermediaries, and facilities for storage and transportation which exist in the system.
2) To determine the marketable* and marketed surpluses of soybeans among the selected farmers.
3) To determine the factors that affected both surpluses among the selected farmers.
4) To assess the prospects for an improved soybean marketing system in the state.

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*Marketable surplus is defined here as soybeans output plus soybeans carried over from the previous season short of the quantity used as food, gifts, seeds, as kind payment etc. Marketed surplus is the soybeans actually sold.

CHAPTER 2

RESEARCH METHODOLOGY

2.1 Theoretical Approach to the Study

The basic purpose of market analysis is to determine how well a marketing system is performing the functions that are necessary for fulfilling the goal(s) of the marketing system, and how the performance can be improved. Possible approaches to such analysis include the problem identification approach; the functional approach; and the performance criteria approach (Hill, 1965). The problem identification approach tries to find out the major problems that confront the industry, and to determine how the structure and organisation of the marketing system relate to those problems and their solutions. The functional approach views the marketing system through the specific functions that the system is expected to perform and determines how well these functions are performed; while the performance criteria approach specifies and uses various criteria to evaluate and compare marketing systems. These approaches could be used as alternatives, or in combination. Choice of any, or a combination of them is usually guided by considerations like the nature of the problem, complexity of the marketing system, and the availability of data and research resources to use in the analysis.

Since the primary aim of the study was to find out and document the problems of soybean marketing in Benue State, the problem identification approach was used. The approach is a fairly comprehensive one as it not only tries to find out the major problems afflicting a marketing system, but also tries to find out how these problems derive from the structure and organisation of the system. Examination of structure and organisation of a marketing system has itself developed into an elaborate framework for market analysis which is often called the market structure model.

A version of this model due to N.T. Pritchard (1969) has the following four components: (a) market structure analysis, (b) a set of economic theories, (c) the theory of economic growth (Hays, Jr, 1975). This model uses the theory of perfect competition as a comparative norm for market analysis which it does by examining (a) the structure of the market or its organisational characteristics which might significantly influence the behaviour of marketing agents within the market; (b) the conduct of the market or the behaviour pattern followed by agents in adjusting to the market in which they operate and (c) the performance of the market which has been broadly defined as appraisal of the extent to which the interactions of buyers and sellers in the market as influenced by market rules and

institutions, stimulate results that are consistent with social purpose (Economic Research Service, USDA, 1973).

Ideally these two components (the actual identification of problems, and explaining and suggesting solutions to the problems in terms of the structure and organisation of the market) of the approach should be considered together in any market analysis research which employs the approach. Often times however, scarcity of time and other research resources constrain research on market analysis into concentrating on one of the two components of the approach. In this respect, the tendency among research works into traditional marketing systems in underdeveloped countries has been to assume or hypothesize the existence of some problems in marketing system, and then analyse the system using the market structure model in order to deny or confirm the problems, and to explain them. This tendency has the merit of conforming to established scientific investigative procedure of passing from hypothesis to conclusions through observation and analyses. However, it would appear reasonable to argue that market structure analysis would yield more useful results if it is preceded by actual identification of problems in a marketing system. Hypothesizing problems of a marketing system can, at best, lead to explanations of, and suggestion of solutions only

to those problems that have been hypothesized and confirmed. Other problems may be missed by the procedure which might be as important, or even more important than those investigated, the non-removal of which might mar the achievement of good result from the application of the findings of research. For this reason, this study emphasized actual identification of the problems in the marketing system for soybeans in Benue State. The structure and organisation of the system were not analysed because the time and other resources available for the study were not enough to permit such analysis.

The problem identification approach categorises most problems of a marketing system as one or more of the following: pricing relationships and price differentials through time, form and space; communication between buyer and seller; management and operation of market facilities; and inadequate volume of commodity (Hill, 1965). In this study, the problems of pricing relationships and price differentials were limited to those over time and space only. Form was not considered because there are no established processing plants for soybeans in Benue State, and the only form in which soybeans are significantly marketed in the state is just as the unprocessed soybeans. Problems of communication between buyers and sellers were investigated by finding out farmers' sources of price information and also the adequacy and reliability of the

sources in farmers' opinions. Problems of management and operation of market facilities are usually considered in a situation where a marketing system has seen the development of publicly or privately owned marketing organisations or where processing plants exist in the system to complement it. In that case the problem may be analyzed as broad problems of management personnel, or it may be approached as series of specific problems such as the use of credit, the need for vehicles for transporting produce, need for weighing and standardization equipment etc. In Benue State there are neither processing plants, nor specialised marketing organisations (such as marketing cooperatives) for soybeans. The Nigerian Groundnut Board in the state could however, be considered as a public organisation for soybean marketing in the state by the extent to which the board's transactions cover soybeans. This study therefore looked at soybean transaction problems of the groundnut board, and also the problems of produce standardisation among the farmers and traders in the sample. Problems of inadequate volume were considered as those of marketable and marketed surpluses.

2.2 Choice and Description of the Study Area

The Guinea Savannah Zone is the main soybean growing zone in Nigeria. Rainy season in the zone lasts for about five months and discourages groundnut cultivation

(Faryna, 1978). Benue State is the major soybean growing state in the country. For this reason, and also because the state falls within the area covered by the research mandate of the Institute for Agricultural Research (IAR), it was chosen for the study. The study covered three of the thirteen former divisions in the state. These are Gboko, Katsina-Ala, and Vandeikya. The three divisions were selected on the basis of soybean acreages as shown in Table 3. This table shows that by 1979 when the acreage estimates were recorded, the three divisions had the largest acreages under soybeans than the other divisions where soybeans were grown. Restriction of the study only to these three divisions was necessitated by time and financial constraints.

Benue State is located between longitude 6° 35'E and 10°E and Latitude $6^{\circ}30'$N and $8^{\circ}10'$N in the middle belt of Nigeria. It is to the east of the Rivers Niger/Benue river confluence, and covers an area of 46,300 km^2. Its estimated population is 3.3 million people of which 2.94 million are rural (MANR, Benue State, 1982). There are three major categories of tribal and language groups in the state. These are Igala (and Bassa), Idoma and Tiv. The three divisions covered in this study are all Tiv-speaking.

Agriculture is the main economic activity in the state. It accounted for about 62% of the gross product and around 78% of total employment in the state in 1981/82.

Table 3. Estimated area of Soybeans in Benue State by division, 1979.

	Divisions	Area ('000 ha)
1.	Ankpa	-
2.	Dekina	-
3.	Idah	-
4.	Bassa	-
5.	Okpokwu	-
6.	Oju	-
7.	Otukpo	0.1
8.	Vandeikya	7.0(?)
9.	Makurdi	-
10.	Gboko	6.4
11.	Kwande	0.4
12.	Gwer	0.1
13.	Katsina-Ala	0.8

Source: Benue State Regional Plan Inception Report by Dar Al Handash, 1979.

The farm economy of the state is characterised by small-sized, fragmented land holdings. The average farm size is estimated at between 2 ha and 5 ha each farming season although farmers may have usufructory control over two to three times the average size of farm land in some districts. Cultivation is done predominantly by traditional hand and hoe method, and crop production is still largely subsistence in orientation (MANR, Benue State, 1982).

The most important crops traditionally grown in the state include yam, cassava, rice, maize and guinea corn. Other crops include millet, the legumes such as soybeans (which is the most prominent at present) cowpeas, groundnuts and benniseed. Tree crops, particularly oil palm (in the west) and citrus are valuable sources of income. Livestock, mainly poultry and other small stock, play a relatively minor role in the farm economy.

One important pre-requisite for a bouyant traditional marketing economy is good road network, especially feeder roads. In Benue State roads form the most important mode of transportation. The road network is however constrined by Rivers Niger, Benue and Katsina-Ala. The state has paved Federal and State roads, and some 1720 km of gravel/ earth roads also under the jurisdiction of the state and Federal governments. The total extent of local government (feeder) road available to complement the traditional marketing economy is thought to be some 3690 km of which only 29% is passable all year round (MANR, Benue State, 1982).

2.3 Selection of Farmers and Traders

Sixty farmers and twenty traders were used in this study. Both groups were selected purposively and randomly in the following way. In each of the three divisions covered, one hundred soybean farmers were identified who were considered likely to be amenable to the study. This was done with the assistance of some staff of the Ministry of Agriculture in each of the places.

Twenty out of the hundred farmers were then randomly chosen in each area, giving a total of sixty farmers. The twenty traders interviewed were chosen in a similar manner from two important markets along Makurdi-Katsina-Ala road. These markets are at Wannune and Tyowanye. Preliminary visits were made to the markets to identify twenty traders in each market who were willing to answer questions. Ten were then randomly chosen from each of twenty, giving a total of twenty traders.

2.4 Method of Data Collection

The required data were collected between November 1982 and January 1983. Two different sets of structured questionnaires were used for the two groups of respondents, the farmers and the traders. Each respondent was interviewed at his home, and the traders were interviewed outside market days when they were found less busy, and readier to grant audience to the enumerators.

Secondary data were also collected from the offices of the Ministry of Agriculture in the three divisions, from the office of the Groundnut Board in Makurdi and also from the Agricultural Development Project office at Ayangba.

CHAPTER 3

SOYBEAN PRODUCTION, STORAGE PRACTICES AND PROBLEMS

3.1 Characteristics of the Study Farmers

Farming is a way of life with most traditional farmers in Nigeria, and elsewhere in Africa. As such, it is rarely possible to draw a sharp line between purely farming activities and purely home and family management activities of any traditional farmer. For this reason, it is often necessary in research involving traditional farmers, to ascertain information about the farmers and their families. Such personal information often prove indespensable to good understanding of the farming systems, practices and problems observed among the farmers. The personal characteristics of the sixty farmers covered in this study were therefore ascertained and the results are presented below.

Age and Experience

Table 4 gives the distribution of the farmers according to age. More of the sixty farmers (41% of them) were in the 40-50 years age bracket than in any of the other age groups.

There was no farmer in the "less than 20 years" group. Table 4 thus reveals that most of the farmers

Table 4. Age distribution of the study farmers

Age Group	No. of Farmers	Relative Frequency (%)	Cummulative Frequency (%)
<20 years	-	-	-
20-39 years	10	16.7	16.7
40-59 years	41	68.3	85.0
60-79 years	09	15.0	100.0

Source: Survey Data.

studied were fairly advanced in age. The absence of relatively younger people in the group suggests that the areas studied have seen a good deal of movement of young people out of agriculture, probably to non-agricultural jobs in the areas and elsewhere.

The majority of the farmers (90% of them) have been farming for more than ten years, while 85% of them have been growing soybeans for six years or more. Being so experienced, these farmers can reasonably be expected to give knowledgeable information about soybean production and marketing in the state.

Associative Characteristic

The idea of cooperative as an important vehicle for bringing majority of Nigerian farmers to effectively participate in, and adequately benefit from the process of national economic development is a widely held one

in Nigeria (Oshuntogun, 1974; King, 1975; Arua, 1980; Ijere, 1981). Consequently the development plans which have been drawn up so far to guide the development process in the country have continued to appreciate and emphasize the role which cooperatives can play in the national economy.

As early as 1935, farmers' cooperative were introduced into Nigeria, to improve the standards of living of communities, to ensure increase in agricultural output and to provide storage and marketing facilities (Anonymous). This study also tried to find out the extent to which the farmers associate with one another as an indirect way of assessing the farmers' awareness of the possibility of tackling their market and other problems by group and cooperative actions. The farmers were thus asked to indicate what associations they belong to. Their responses are shown in Table 5. Table 5 indicates strong associative tendencies among the farmers generally. Tiv Bams and Farmers' Association which have the largest membership, are apparently the most popular associations.

Although they are not cooperative societies, the Bams and Farmers' Associations have features which make them potentially good starting points for the formation of viable agricultural cooperative societies among the farmers in the areas. Tiv Bams are indegenous savings and credit groups found throughout the Tiv-speaking divisions of Benue State. The groups have their

Table 5. Farmers' Memberships of various associations

Type of Assc. and Code No.	No. of Farmers belonging to									
	(1)	(2)	(1)&(2)	(1)&(3)	(2)&(3)	(2)&(4)	(1),(2)&(3)	(1),(2)&(4)	(1),(2),(3)&(4)	None
Tiv Bam (1) Farmers' Assc (2) Church Assc. (3) School Board (4)	4	13	18	2	1	2	8	9	2	1

Source: Survey Data.

Note: The numbers in brackets against the types of associations (column 1) are codes representing the associations. The codes are used at the heads of the other columns to represent these associations. The numbers within the columns proper represent the numbers of farmers belonging to any association or group of associations. E.g., column 4 shows that 18 farmers belong to both Tiv Bams and Farmers' association.

historical origin in the early 1950's when availability of government credit and support depended largely on political loyalty. They are annual associations, and they provide consumption andproduction credit to members, and also participate in the planning and execution of community development efforts. Farmers' associations in the areas are similar to the Bams in pattern. Essentially, they are routes through which members receive technical assistance from the Ministry of Agriculture and Natural Resources (Moss et. al, 1976).

2.2 Production Practices and Problem

Soybean is best produced on sandy loam soils with good drainage such as are found in Benue State, especially in the areas around Gboko, Kwande, Katsina-Ala and Makurdi. These areas receive rainfall which has a double maxima occuring between September and October, and in June. They have good elevation, ranging between 150 m and 300 m high, and temperatures ranging from 21.70c to 35.90c (Nyiakura, 1983). Soybean cultivation in the state follows a fallow system whose interval has been put at 4 years on the average. A sorghum-based cropping system in which sorghum/soybean appears for 2 to 3 years at the end of a 4 to 5 year fallow period has been reported (Knipscheer and Ay, 1982). The cropping system observed in the present study contains soybean and sorghum.

The author however prefers to call the system a soybean-based one. The reason is that soybean was the principal crop in the mixture in all the cases observed.

Data on the sizes of lands with soybean/sorghum mixtures are not available, but the average number of plots per farmer in the state has been put at 2.4 (Knipscheer and Ay, 1982), and these are usually cultivated with simple hoes. Soybean yield figures in the state are available from a number of sources: 500 kg/ha (Federal Office of Statistics, 1980), 400 to 1200 kg/ha, probably from the most popular variety Malayan, in some L.G.As; and 900 kg/ha in M.A.N.R. demonstrations of improved practices on farmers' control plots in Benue State in 1978 (Hawaiian Agronomics, Coy, Int, 1980). By 1980 the amount of soybeans produced in the state was estimated at 14,000 tons, and this quantity was reportedly lower than in 1979.

Generally farmers in the state use the techniques of intercropping and staggering of planting in order to reduce the peaks and troughs of labour needs. As was mentioned earlier, in all the cases covered in this study, soybean was found to be the principal crop in soybean/sorghum mixtures. Record of comparison of the labour requirements of soybean/sorghum and groundnut shows that soybean requires more labour than sorghum, but less than groundnut for planting, weeding and harvesting (Knipscheer and Ay, 1982). The record also indicates the relative importance of different labour sources for

farming activities in the state. This is shown in Table 6. Table 6 shows that the family is the most important source of labour for all activities except land preparation for which hired labour is highest.

Table 6. Relative importance of different sources of labour by activities in Benue State

Activity	Labour Source		
	Family (%)	Hired (%)	Community (%)
Land preparation	7.7	13.3	3.4
Planting	7.8	3.9	0.5
Fert. application	4.0	0.1	0.3
Weeding	15.4	3.1	1.3
Insecticide appl.	0.4	-	-
Bird scaring	2.4	0.1	-
Harvesting	16.7	19.4	1.2

Source: Adapted from Knipscheer and Ay (1982), p. 36.

Most farmers in the state use fertilizer on soybeans, but figures of use rates are not available. The types of fertilizer used include single superphosphate compound fertilizer, and urea. These are obtained from private as well as government sources. The use of insecticide on soybean is limited to the dressing of seeds with Aldrex T prior to planting.

All the farmers grew soybeans primarily for commercial reason. Forty-three of them or 71.7% grew more soybeans in the 1981/82 cropping season than in the previous season, and seventeen or 28.3% grew less. Those who grew more did so to make more money and those who grew less did so because they could not get the services of a tractor, and they did not have enough money to hire the necessary labour.

3.3 Storage Practices and Problems

Soybean seed is a rather delicate seed, and somewhat different from the seeds of most other crops like millet, sorghum, maize, rice etc., with which farmers are familiar. The seed often has quality problems which relate to germinability and vigour. It is inherently short-lived and structurally weak compared to most other kinds of seeds. It could essily be harmed by hot dry weather during maturation, weathering from rainfall, warm temperatures during harvest, mechanical abuse during harvesting and handling operations. To obtain high quality seed, it is necessary to harvest timely from about 15% moisture content (M.C.), and air and/or dry the seed to about 11% MC prior to storing (Delouche, 1975; Hawaiian Agronomics, 1980). Careful handling in storage is also necessary in order to minimise damage to the seed, and storage should ideally take place in structures with

temperature conditions of 20°C to 22°C or less, and 60% relative humidity or less, to maintain seed quality from harvest to planting (Delouche, 1975).

In Benue State, soybean, following harvest, is sun-dried, threshed, bagged by most farmers, and stored mostly in farmers homes. Fifty-nine (or 98.33%) of the farmers covered in this study stored soybeans during the 1981/82 market season. Of this number, fifty-three or 88.3% stored soybeans at home and six (or 10%) stored in the market. The reasons given by the farmers for storing soybeans are given in Table 7. This table shows that the major reason why most farmers stored soybeans was to get higher prices at some future date(s). Table 8 indicates that most of the farmers actually sold their soybeans stocks between April and June 1982, that is between five and seven months after the commencement of harvesting in November 1981. Only 11.67% of them sold the bulk of their stocks of soybeans between October and December, or in a period starting shortly before 1982 harvests and streching well into the harvest time. Apparently therefore, the common belief that traditional farmers dispose of most of their farm produce soon after harvest was not true of the majority of the study farmers in the 1981/82 market season. The commonest storage problem expressed by the farmers was inadequacy of storage spaces in their homes.

Table 7. Frequency distribution of farmers according to their reasons for storing soybeans.

Reason	No. of Farmers	% of Total
To obtain higher price in future (1)	41	68.33
For use as seeds (2)	9	15.00
For domestic food seeds (3)	0	00.00
1 & 2	8	13.33
1 & 2 & 3	1	01.67
Don't store	1	01.67
Total	60	100.00

Source: Survey Data

Table 8. Classification of the farmers according to the periods when they sold most of their soybeans

Period	No. of Farmers	% of Total
Jan. - March	9	15
April - June	25	41.67
July - September	19	31.67
October - December	7	11.67
Total	60	100.01

Source: Survey Data

Among the study traders, the storage practice was to put soybeans in jute bags and keep the bags in stores located in the market places until the soybeans are re-sold. The traders indicated that storage loss due to rats and rot, and high cost of storage were the two storage problems they had with soybeans. The occurence of rot in soybean storage suggests poor handling, and physical damage of the soybeans. It can be minimised by handling the soybeans more carefully to avoid physical injury to them. The other problem of rats is a common one in the storage of most grains. It can be reduced by use of poison dusts, and rat traps.

3.4 Estimates of Cost of Production of Soybeans

Commodity prices are often set on the basis of production cost, but it is sometimes argued that using production costs as the basis for setting prices is neither realistic nor economic because of the difficulties in estimating the cost of jointly produced commodities. How, for instance, should cost be apportioned between soybeans and sorghum or maize which are grown together? Another problem is that cost of production varies from farmer to farmer, and this creates the difficulty of how to determine one cost of production figure to use. Each farmer's cost of production is a function of the farmer's efficiency. Due to these problems, freely determined market price, or that price which equates supply and demand in the market is often considered a more realistic

and economic basis for commodity price setting. Nevertheless, production costs is useful in many other ways, but especially in revealing the extent of relationship which any given price of a commodity at any given time, bears to the whole exercise of production. It is necessary that cost of production should bear at least, a minimum relationship to produce price in order to make production worth the while of its undertaker.

Soybean production costs in Benue State have not been objectively determined, but the farmers covered in this study complained that soybean prices tend to be low during most soybean marketing seasons (see 4.4). Two estimates of cost of production of soybeans have therefore been made below for the purpose of understanding how soybean prices in the state are related to the cost of producing the crop.

A. Estimate with data from IAR sources

Labour cost

The labour requirements and cost for growing one hectare of soybeans are given in Table 9A.

Notes:

(1) Bird scaring which is an important activity in soybean production in the state has been omitted from the calculation for want of data.

(2) Labour values given in column 3 of the table has been calculated at the rate of ₦5.00 which is the un-official wage rate for casual/daily labour in Samaru, Zaria during the period of this study.

(3) Figures of labour requirements were obtained from the Department of Agronomy, IAR, and they were recorded for experimental plots in Samaru.

Table 9A. Estimates of labour requirements and cost of growing 1 ha of soybeans (IAR)

Activity	Labour requirement (man-days/ha)	Value (₦)
Land preparation	20	100.00
Planting (sowing)	10	50.00
Two hoe-weedings (at 3-4 and 6-8 weeks after sowing)	25	125.00
Harvesting	10	50.00
Threshing	15	75.00
Total	80	400.00

Seed Cost

Using the average seed requirement calculated from data collected from Gboko in 1981/82 cropping season, and a price of ₦0.2/kg, Seed cost equals ₦16.88/ha.

Note:

The data referred to here were collected between June and November 1982 in Gboko, Benue State under the auspices of the socio-economic arm of the Grain Legumes Research Program of the IAR.

Fertilizer Cost

The cost of fertilizer obtained from the study referred to above was ₦34.88.

Total Cost

Putting these cost items together, average total cost of production per hectare equals ₦400 + ₦16.88 + ₦34.88

= ₦451.76/ha

B. Estimate with labour data from IITA sources

Labour

Table 9B. Estimates of labour requirements and cost of growing 1 ha of soybeans (IITA)

Activity	Labour requirement (man-days/ha)	Value (₦)
Land preparation	42	210.00
Planting	15	75.00
Weeding	28	140.00
Harvesting	35	175.00
Total	120	600.00

Knipscheer and Ay (1982), p. 32.

Note:

Activities like fertilizer and insecticide applications, bird scaring and threshing are not in the calculation for want of reliable data. The figures for the other activities were derived by the authors by comparing the labour

requirements of soybeans and those of sorghum and groundnut as recorded in literature. The comparison was done after getting farmers' rankings of the three crops in terms of labour needs.

Seed:

The same figure used in estimate A is being used here. Doing so could be justified on the grounds that the seed data were collected from the same area as the labour data, even though they were collected at different times. The figure is ₦16.88.

Fertilizer

For the same reason given for seed, the fertilizer figure used in A is also being used in B. The use of these figures is further justified by the unavailability of any more reliable data. The fertilizer figure is ₦34.88.

Total cost/ha

₦600 + ₦16.88 + ₦34.88 = ₦651.76

These cost estimates provide a basis for estimating the level of output that a farmer would require for profitable soybean production in the state. Using a sale price of ₦38.40 per bag of 77.943 kg weight (this price was the average price recorded in four markets in December 1982 - see Chapter 4, section 4.4), the number of bags required to cover the cost of cultivating one hectare of soybeans will be

$$\frac{451.76}{38.40} = 11.76 \text{ bags (using cost estimate A)}$$

or

$$\frac{651.76}{38.40} = 16.97 \text{ bags (using cost estimate B)}$$

One standard bag of soybeans contains 76.923 kg soybeans, so 11.76 bags amounts to 904.61 kg soybeans, and 16.97 bags to 1305.38 kg soybeans. Thus a farmer requires a yield of either 904.61 kg (if cost estimate B is applied) from one hectare of soybeans, if he must at least, cover his cost of production. He would require even higher yields in order to make profit.

As was observed earlier in this section, labour requirements of some vital operations in soybean cultivation have been omitted from the calculations. The actual production cost figures might therefore be higher than those presented here. Only 11.67% of the farmers covered in this study sold soybeans between October and December. Most of them (41.67%) sold the bulk of their stocks of soybeans between April and June (see Table 8). April-June corresponds to the beginning of a new soybean cultivation season. Since the prices of most agricultural commodities usually attain their peaks towards planting time (Uma Lele, 1971; Hays, Jr. 1975), it is reasonable to expect that the average price which most farmers received for soybean was higher than the new season, December average price which has been used in the calculations. The combined effects of higher production cost and higher sale price would be to reduce the yield requirement for profitable soybean production.

The other handicap which the estimates have is that the labour figures which have been used were obtained partly from research trials where soybean was grown alone and partly subjectively. Since soybean is usually intercropped with sorghum or maize on farmers' plots, the actual labour figures from farmers' plots might be different from those used in the calculations.

CHAPTER 4

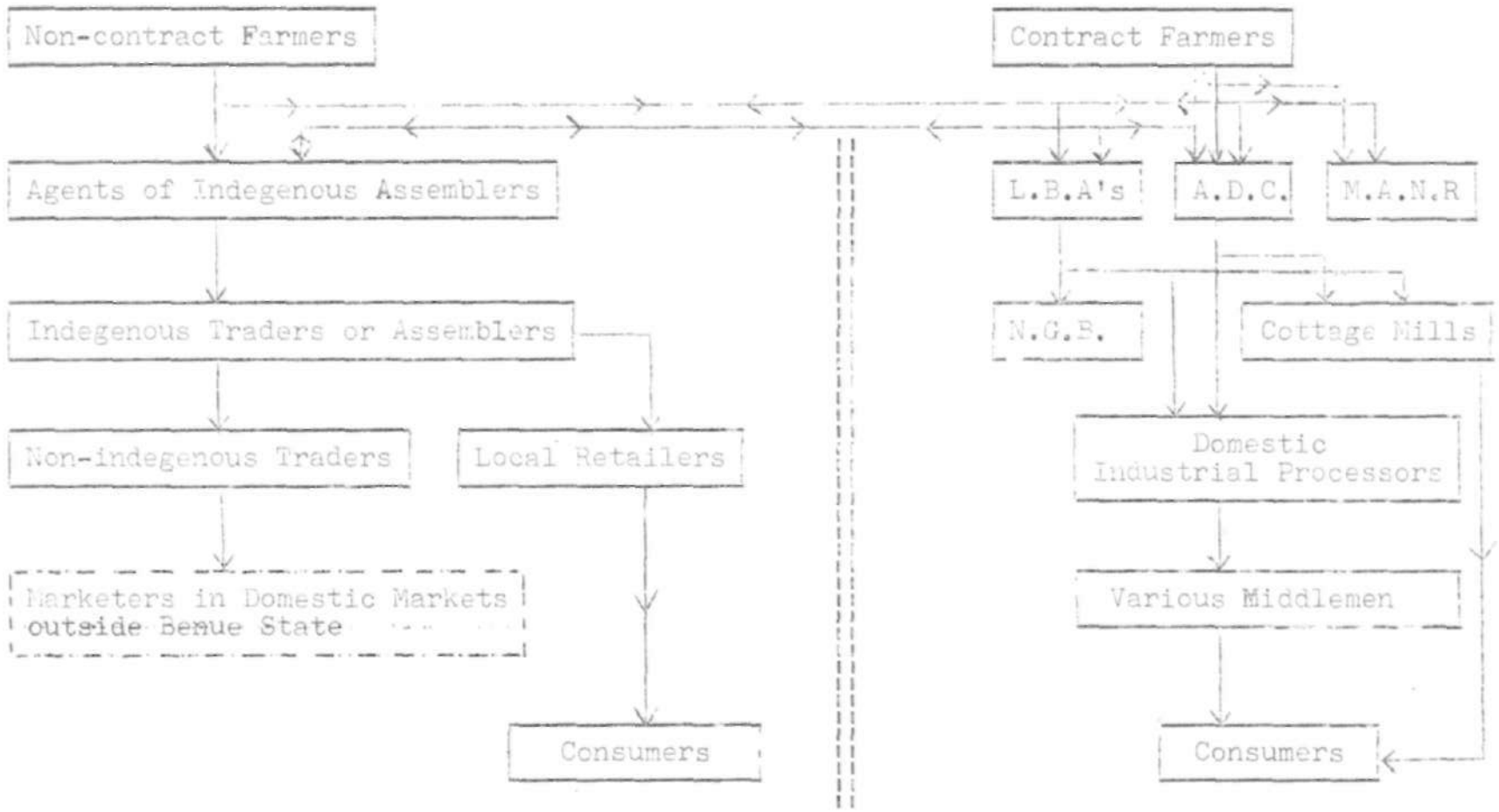
DESCRIPTION OF SOYBEAN MARKETING SYSTEM IN BENUE STATE

4.1 The Marketing Channels

The first step in understanding the relationships in a marketing system is to describe the system and the existing relationships within it. Diagrams that show the flow of commodities from producer to consumer in terms of physical products or market channels or both, are useful in indicating the relative importance of specified sources of supply, kinds of outlets, and the sequence of market channels (Hill, 1965).

Market channels themselves are the paths which commodities follow from producers to consumers, including the mode of transportation, and the kind of facilities involved. The channels identified in the marketing system for soybeans are illustrated in Figure 1. The channels shown in this figure could be grouped into two broad categories as official and unofficial channels. The official channels consist of a group of farmers known to the Ministry of Agriculture and Natural Resources (M.A.N.R.) as "contract farmers" or "outgrowers"; the M.A.N.R. itself; the Agricultural Development Corporation (A.D.C.) in the state, the Nigerian Groundnut Board (N.G.B.), Licensed Buying Agents (L.B.A's), and Domestic Oil Mills.

Figure 1. Soybeans Market Channels



Note: The channels represented with broken lines fall outside Benue State and so are not shown in detail.

The unofficial channels comprise farmers (both the contract and non-contract ones); agents of local (indegenous) assemblers; indegenous assemblers; non-indegenous traders, indegenous retailers, cottage soybean processors outside the state, domestic consumers in the state, domestic consumers outside the state, and consumers outside Nigeria. These channels are discussed in details below.

The Unofficial Channels

1. Farmers

Essentially two groups of farmers are involved in the trade. Those who cultivate soybeans solely on their own initiative, and those who cultivate some soybeans under the aegis of the M.A.N.R., apart from the soybeans they cultivate on their own private accounts. The latter farmers are known to the M.A.N.R., as "contract farmers" or "outgrowers". Farmers in the first group have been discussed earlier in Chapter 3, section 3.1. The contract growers grew part of their soybeans under the soybean seed multiplication program. This is a federal government program, but it is housed in the state Ministry of Agriculture. Under the program, farmers are sold seeds and all other complementary inputs at subsidized rates. They are then required by the Ministry to return specified quantities of the produce they realize. The ministry pays the farmers

for any soybeans received. Whatever the farmers realize over and above the quantities which they are required to return could be sold any where within the country.

2. Agents of Indegenous Assemblers

The agents are employed by indegenous or local soybean assemblers to boost the assemblers' share of soybean arrivals to soybean markets. Their employment is mainly on daily basis, and their function expires after every market day. They do not acquire ownership of the soybeans they collect.

3. Indegenous Traders (Yan Blanda)

These are mainly soybean assemblers and are called "blanda" (Trader) in the local language. Twenty traders in this category were selected from two markets, Tyowanye and Wanune, and interviewed. All the twenty were men who had varying numbers of years of experience in soybean trade. Table 10 shows that 50% of them have been dealing on soybeans for between five and ten years, and 10% for more than fifteen years. Apart from soybeans, the traders also sold other crops like groundnuts and rice. Table 11 shows that 65% of them derived less than half of their annual sales incomes from soybeans during the 1981/82 season.

Most of the traders obtained their soybean stocks from farmers' homes, and from the local markets (that is from farmers who came to the local markets). They considered farmers' homes the most important soybean

Table 10. Classification of the study traders according to trading experience with soybeans

Experience (yrs)	No. of Farmers	% of Total
Less than 5 years	3	15
5 - 10 years	10	50
11 - 15 years	5	25
More than 15 years	2	10
Total	20	100

Source: Survey Data

Table 11. Classification of the study traders according to fraction of total sales income derived from soybean sales

Income Fraction	No. of Farmers	% of Total
0 - 25%	1	5
26% - 50%	6	30
51% - 75%	13	65
76% - 100%	-	-
Total	20	100

Source: Survey Data

sources because these homes were the cheapest and the most reliable sources. Disposal routes available to the assemblers include:- other traders (especially the non-indegenous ones), the A.D.C., the N.G.B; small retailers and consumers. The most important disposal routes indicated by the traders, were the non-indegenous traders, the A.D.C. and the N.G.B. in that order.

4. Non-indegenous Traders

The non-indegenous traders constitute another identifiable group in the soybean trade. These traders come mainly from Kafanchan in Kaduna State. To this group the indegenous traders act as contacts, indeed as commission agents since the "outsiders" are not allowed to buy directly from the farmers in the market, but are constrained to buying soybeans through the indegenous assemblers, on any market day. Traders in this group who were interviewed informally, indicated that they carry their wares to Kafanchan where there is a thriving industry of cottage soybeans processing firms.

The Official Channels

5. Ministry of Agriculture and Natural Resources (M.A.N.R)

The office of the M.A.N.R. in Makurdi houses the soybean seed multiplication program of the Federal government.

The farmers who are involved in this program are the contract farmers or outgrowers discussed in section 4.2.1. The role of the M.A.N.R. in the trade is only a partial one since it does not compete for the soybeans in the open market, but only collects part of the produce of its contract growers at a price which is specified at the beginning of every season.

6. The Agricultural Development Corporation (A.D.C)

The ADC came into soybean trade about 1980 after the government of Benue State conceived a plan to establish a big soybean processing plant in the state. Its role has been to buy and store soybeans in readiness for the take-off of the proposed industry. With the delay in the execution of the project, the A.D.C. has been selling some soybeans from its stocks. Buyers from the corporation include domestic soybean users. The ADC operates with a license, so it is like a licensed buying agent.

7. Agents of Licensed Buying Agents

These agents are employed by Licensed Buying Agents (L.B.A's) to help the latter to catch as much of the soybean arrivals to the market as possible. The agents also provide other services such as rebagging soybeans and loading delivery vehicles. They are employed

and paid according to the volume of work done, and in varying numbers by the L.B.A's, according to the latter's financial strength and volume of business.

8. Licensed Buying Agents (L.B.A's)

The L.B.A's are the operational arms of the Nigerian Groundnut Board which is the principal official channel for soybean commercial transactions in the country. They are required by law to operate with two licences; one, a commodity licence issued by the groundnut board, and the other, a store licence issued by the produce inspectorate division of the state Ministry of Agriculture. L.B.A's are also required to carry out their transactions in gazetted buying stations where producers are supposed to bring their wares to. This requirement is hardly met now. L.B.A's could be private firms or corporations (such as the A.D.C), or cooperative organisations.

9. The Nigerian Groundnut Board (N.G.B)

The N.G.B. is a statutory marketing organisation charged with the responsibility of coordinating commercial transactions on a number of crops, including soybeans. The crops under the Board's mandate in Benue State are groundnuts and soybeans. The board works through L.B.A's. While it has a monopoly on exporting soybeans from the country, it has a standing policy which permits soybean producers to sell their produce anywhere they

wish, but within the country. The Board could sell its soybean collections to domestic oil mills, other domestic soybean users such as cottage poultry feed mills, and to overseas users when there is surplus.

10. Domestic Industrial Processors

These are mainly oil mills which utilize soybeans as raw material. Notable ones are the Kano, Gusau and Gombe mills. These produce soybean oil (Soy oil) and soybean meal for domestic markets.

11. Cottage Feed Mills

These use soybeans as an ingredient in poultry feeds. The feeds are sold to domestic poultry farmers who in turn produce poultry products for domestic markets.

12. Other Domestic Processors

Discussions with a number of traders who came from outside Benue State (the non-indegenous traders, see 4.1.4) to the two markets studied, revealed that there is a thriving soybean processing industry in Kafanchan, Kaduna State. The product of this industry is "Dadawa", a local food-seasoning material. The material is used in various parts of Nigeria; and a lot of it, according to the traders, is exported to neighbouring African countries from Kafanchan by rail.

4.2 The Study Markets and their Structural Features

There are many markets located at various places in Benue State where soybeans are traded. The traders interviewed in this study were however drawn from two markets, in Wanune and Tyowanye villages only. The two markets, but especially Tyowanye market, are reputed as very important soybean markets in the study areas. Both markets are located along the road running between Makurdi and Katsina-Ala. They are both five-daily markets.

Market structure refers in a descriptive way, to the physical dimensions of a marketing system; to size, kind and number of firms and various measures of concentration (Hill, 1965). But there are four market structure characteristics that are mutually important determinants of the conduct (or behavioural relationships among buyers and sellers) which prevails in all markets. These are (a) the number and size of firms, (b) nature of the product (as viewed by buyers), (c) entry and exit conditions, and (d) status of knowledge about costs, prices and market conditions among the participants (Dahl and Hammond, 1977). These four structural characteristics as they were observed in the two markets are discussed below:

(a) Kinds, Sizes and Concentration of Firms

The kinds of firms observed in the markets are all outlined in Figure 1. They include the producers, or farmers;

indegenous assemblers and their agents, non-indegenous traders, licensed buying agents and their agents, the Agricultural Development Corporation and their agents, the Nigerian Groundnut Board and retailers. In both markets there were relatively large numbers of both buyers and sellers. Among the buyers however, the indegenous assemblers behaved as members of an informal, unwritten association, and in a way that reduced the extent of free transactions in the markets. They had reached an understanding among themselves to prevent the non-indegenous traders from purchasing directly from farmers, and acted as commission agents to the "outsiders". Thus any non-indegenous trader who wanted some soybeans was constrained to hand over the transactions to some indegenous assembler(s) who provided the services for some commission.

Many of the indegenous assemblers were also L.B.A's at the same time. Thus apart from earning commissions from their intermediative activities, they also earned money from doing transactions on behalf of the groundnut board. Although none of them would admit, it is not impossible that some if not all of them use the facilities provided by the board in doing private trade to the detriment of the board. Considering their commercially discriminative behaviours, the dual status of commission agents/private traders cum L.B.A's which they enjoy in the market, and also the fact most of the other groups

of buyers do not command the kind of power that they command in the market, these local or indegenous assemblers (Yan Blanda) could be considered as representing the most powerful group in the local soybean trade. Their activities suggest the presence of veritable oligopsonistic forces in the markets.

(b) Nature of Product

Raw, unprocessed soybean was the only form in which soybean was significantly traded in the markets. But for seldomly occuring cases of differentiation by colour, the soybeans sold in the markets were more or less standardised. Most buyers observed behaved in manners which revealed that they did not consider the soybeans sold by any one seller as being significantly different from those sold by any other seller.

It was not clear however, how the non-indegenous traders chose who among the local assemblers were their agents on any market day. There was nothing to suggest that the quality of soybeans purchased for them by the local assemblers played any part in their choices. Rather the choices seemed to have been made on the basis of social considerations.

(c) Entry and Exit Conditions

Entry and exit conditions refer to the ability of firms to enter or leave a market. The discriminative behaviours of the indegenous traders (this was discussed in section 4.3a), restricted entry and exit into and from

transactions in the markets by the extent to which the behaviour prevented the "outsiders" or non-indegenous traders from engaging freely and directly in transactions with soybean producers who come to the markets. The markets cannot therefore be said to be totally free.

(d) Status of Knowledge about Costs, Prices and Market Conditions among the Participants

Market knowledge refers to information held by market participants (buyers and sellers) which permit them to make informed, and rational decisions in the market environment in which they operate.

Among the firms observed in the markets, there appeared to be free flow of price information. Even the non-infegenous traders were always around and observing the transactions being done on their behalf by commission agents. So they were always aware of the correct amounts of money to pay back to the commission agents to cover the latter's costs and commissions.

The degree of price awareness among the farmers who preferred to stay and sell their produce at home was also verified and the results obtained are presented in the subsequent sections of this chapter.

4.3 Price Formation in the Study Markets

The techniques by which the forces of demand and supply are translated into transactions and prices in real

market situations have been referred to as the "mechanisms of price discovery" (Tomek and Robinson, 1972). These mechanisms have been classified into four categories as - individual negotiation, organised markets, administered prices, and collective bargaining approaches to pricing (Dahl and Hammond, 1977). Individual negotiation is a simple bargaining process between individual buyers and sellers for each transaction. The bargaining process does not follow any established procedure or formal rule. Rather each seller strives to get the highest price from the bargain, and each buyer the lowest price.

Organised markets involve formalized rules aimed at cutting down the number of individual transactions so as to make bargaining less cumbersome, less time consuming and less costly. Administered prices refer to prices which are unilaterally fixed by a group of sellers, or an authorised agency of a government, or by the government itself. Such prices often involve the use of formula which ties prices to other economic variables. Collective bargaining often arises as a result of sellers' dissatisfaction with the price of a commodity as determined in freely competitive markets.

Transactions in the two markets studied were carried out mainly through individual negotiations. Most of the farmers observed and/or interviewed in the markets revealed that they came to the market armed with knowledge of prices from previous transactions. Most of them also endeavoured, as soon as they entered the market, to "shop

around" for the reigning prices before disposing of their wares. They also claimed that they watched the supply and demand situation each day before selling. But in spite of all the efforts they made to get good bargains, most of them always ended up complaining about the outcomes of the transactions they had engaged in. Apparently they were always out-manoeuvred by the traders, especially the indegenous assemblers (the blanda) who always appeared better informed than the farmers about prices both in markets within the state and outside it.

The complaint was especially bitter among farmers who preferred to stay and sell their crops at home. Sixty of them who were interviewed indicated that their main sources of price information were the same traders (blarda) who came to their homes to buy soybeans. None of the farmers was aware of the prices offered by other buyers such as the Groundnut Board and the A.D.C. Thus these farmers at home based their marketing decisions on information gathered from their "customers" or those traders with whom they had established friendship. As such they were at the mercy of the traders in any transactions the two groups had. The farmers also indicated however, that they were aware of the disadvantages they were suffering due to their dependence on the traders for market information, but that they were being handicapped in their efforts to break free from the traders' hold by the inadequacy of the

storage facilities at their disposal. They also would not take their crops to the market either within or outside the state because it was more convenient for them to stay and sell at home. These facts point again to the existence of oligopsonistic powers among the indegenous assemblers in soybean trade.

Even though the open market prices of soybeans are reached through individual negotiations, soybean also has an administered price. This is the statutory price as set by the Nigerian Groundnut Board at the beginning of every season. The price however receives very little response from farmers, most of who prefer to sell to local traders at higher prices.

Table 12 shows monthly average prices of soybeans in five markets between October 1982 and January 1983. The table shows that during this period, soybean price was lowest in January; that is two months after harvesting of the crop usually commences in the state. The January average price for the five locations was ₦18.40/bag of 77.943 kg weight. In contrast to this price, the statutory price for soybean during the season was ₦175/tonne or ₦13.46/bag. The difference between the two prices is ₦4.94/bag or ₦5 approximately. Obviously, the farmers covered in this study had a good reason for avoiding the Groundnut Board, even though they complained that they were being cheated by the local traders.

Table 12. Monthly average prices of soybeans in 5 markets in Benue State between October 1982 and January 1983

Month	Prices (₦) at				
	Wanune	Agasha Yelwata	Gboko	Asukunya/Tse/Kucha	Makurdi
October 1982	35	40	40	37	40
November 1982	17	25	18	19	35
December 1982	20	19	19	20.50	23
January 1983	17	18	17	17.50	22.50

Source: N.G.B., Makurdi Field Office.

4.4 Major Problems in the Marketing System

This section discusses the major marketing problems of soybeans in Benue State as were ascertained through interviews and discussions with farmers; local soybeans traders; and various officials involved in the statutory component of soybean marketing in the state.

Pricing

The price of an oilseed such as soybean is determined by the price of its oil and meal components. This is especially true in a situation where a parent oilseed is not directly utilized as food in significant quantities, but is used mainly in its component forms. The component of an oilseed which forms the bulk of the seed determines the price of the parent product, and largely influences its future price prospects (U.S.D.A., 1971). The bulk of the soybean seed is made up of soybean meal. The value of soybean seed is therefore influenced mainly by the value of soybean meal, but also by the value of soybean oil. The bulk of soybean oil and meal used in Nigeria is not produced domestically, but imported. This being so, the price effects of the domestic demand for soybean meal and oil are felt more outside the country than within it. Domestic soybean prices currently derive from two main sources. These are the demand of the Nigerian Groundnut Board (which itself derives from the limited demand of domestic oil mills), and the

demand of local soybean processors whose main output is the material called "daddawa". The difficulties associated with these demand sources are discussed below.

Eighty-five percent of the study farmers ranked pricing problem as the most important problem they had in the marketing season covered by this study (see Table 13). Particularly, low prices was their major pricing problem (see Table 14). The problem of low prices of soybeans is a two-pronged one. This is because at any given time, there are at least two distinct prices of the crop; the statutory or official price and the open market price. By January 1983, the 1983 statutory price of soybeans was lower than the open market price even though the latter was yet low because the period was shortly after fresh soybeans harvests had been made (see section 4.3). As was suggested in section 3.4, the problem of low statutory price of soybeans is probably due to the fact that statutory price fixing for the crop is more respectful of world market conditions than it is of domestic production and marketing conditions. Tying soybean price to world market conditions is bound to cause pricing difficulties in the domestic markets because there are cheaper sources of soybeans (such as the U.S.A. and Brazil) to the world market than Nigeria. World market prices are therefore likely to reflect the production and marketing conditions in the countries where the bulk of soybeans to the world market comes from more than they reflect the conditions in Nigeria.

Table 13. Distribution of the study farmers according to three major marketing problems experienced in 1981/82 soybean marketing season.

Type of Problem	No. of Farmers that ranked problem as most important	% of Total No. of farmers	Relative importance of problem
Pricing	51	85	1st
Transportation	6	10	2nd
Unreliable Traders	3	5	3rd
Total	60	100	

Source: Survey Data.

Table 14. Distribution of the study farmers according to the nature of pricing problems experienced in 1981/82 soybean marketing season.

Nature of Pricing Problem		No. of Farmers	% of Total
Low Prices	(1)	47	78.33
Uncertain prices	(2)	10	16.67
(1) and (2)		3	5.00
Others		-	-
No response		-	-
Total		60	100.00

Source: Survey Data.

Most of the farmers also believed that the prices they received from soybean traders, both at home and in the markets, were low compared to prices obtainable outside the state during the same period. This notion suggests that soybean traders earned above normal profits when they carried soybeans to markets outside the state. This aspect of soybean trade was however not examined.

The other pricing problem experienced by the farmers was that of uncertain prices. Table 14 shows that 16.67% of the farmers had this problem. The problem of uncertain prices arose mainly from the fact that most of the farmers were either inaccurately informed about the prices in markets within the state, and almost totally uninformed about prices outside the state.

Transportation

Table 13 shows that transportation problems were ranked next in seriousness to the problems of low and uncertain prices. The particular nature of transportation problems are given in Table 15. This table indicates that the most pressing transportation problem was high transport cost (45%). Bad roads (23%) was the next problem, followed by infrequent availability of vehicles. The problem of high transport cost derives mainly from the problem of bad roads. Where raods are bad, transporters tend to charge high fares for their services. As was mentioned in Chapter 2 (Section 2.2) roads form the most important mode of transportation in Benue State, but only

Table 15. Distribution of the study farmers according to the nature of transportation problems experienced

Nature of Transportation Problem		No. of Farmers	% of Total
High transport cost	(1)	27	45.00
Infrequent availability of vehicles	(2)	4	6.70
Bad roads	(3)	14	23.30
(1) and (3)		3	5.00
No problem		12	20.00
Total		60	100.00

Source: Survey Data.

29% of the 3,690 km of feeder roads in the state is passable all the year round. It is not surprising therefore that the farmers complained about their roads and the high cost of transport which the roads attract. One consequence of the existence of transportation problems within the marketing system was that most farmers preferred to stay and sell their produce at home. Fifty-seven or 95% of them sold their soybeans at home. Table 16 shows that their main reason for doing so was high transport costs. Produce evacuation from farms was also affected by transportation problems. Forty-eight or 80% of the study farmers evacuated their produce by head portrage while eleven or 18.33% did so by means of wheel barrows.

Table 16. Distribution of the study farmers according to their reasons for selling soybeans at home

Reason	No. of Farmers	% of Total
Needed money urgently	8	13.30
Had contract agreements with buyers	10	16.70
Convenience of avoiding payment of transport cost	39	65.00
Total	57	95.00

Source: Survey Data.

Only one farmer had access to a tractor to evacuate his produce. The troubles which produce evacuation by head portrage involve certainly cannot be a fillip to soybean farmers to produce more soybeans. Provision of transport services at lowest possible cost to facilitate easy and prompt evacuation of produce from farms to homes and markets is essential for sustained increase in soybean production.

Unreliable Traders

Table 13 shows that the third most serious problem which faced the farmers was the problem of unreliable traders. Five percent of the farmers ranked this problem as the most serious. The traders meant here are mainly the local (indegenous) soybean assemblers discussed in section 4.1.3. These traders are the main buyers of soybeans

from farmers. Because most of the farmers did not bother to go to the market, they more often than not, relied on these traders both for business and for general market information. Table 17 shows what was mostly unreliable about the traders from the farmers point of view. As people who had vested interests in soybean transactions with farmers, the traders often gave false and inaccurate market information generally, but price information particularly, to the farmers in order to foster their (the traders') commercial interests. The reliance of the farmers on traders for market information was partly responsible for the problems of low and uncertain prices which the farmers faced.

Table 17. Distribution of the study farmers according to the nature of problems they had with local soybean traders

Nature of Problem		No. of Farmers	% of Total
Unreliable market information	(1)	53	88.33
Low volume of purchases	(2)	1	1.67
Payment delays	(3)	3	5.00
(1) and (2)		1	1.67
No problem		2	3.33
Total		60	100.00

Source: Survey Data.

Lack of Information

Closely related to the problem of unreliable trader was the problem of poor information system in the marketing channels. The farmers relied so much on the traders for market information because they did not have alternative sources of reliable information. The absence of good roads and the resultant high cost of transport discouraged free and ready movement of farmers in search of market information, and so worsened the dearth of accurate information among them. In the absence of the latter, farmers found it difficult to plan their production and marketings. Table 18 shows the main sources of market information to the farmers. It also shows that most of the farmers (80% of them) relied on local traders for market information.

Lack of Grades and Standards

Lack of grades and standards can limit the expansion of commercial markets. For a crop like soybeans whose producers deal directly with consumers on a very negligible scale, but which is distributed through groups of traders in local markets, and on a more national scale through the N.G.B., an acceptable and workable system of grades and standards is very important. Standardization was completely missing in the transactions between farmers and local traders. As a result, farmers were always exploited by local traders who endeavoured every time, to stuff soybean bags with as much soybeans as possible for as little money as possible.

Table 18. Distribution of the study farmers according to their major sources of market information

Source of Information		No. of Farmers	% of Total
Extension staff	(1)	6	10.00
Local trader	(2)	48	80.00
L.B.A's	(3)	1	1.67
Farmers' Assos.	(4)	2	2.33
Others	(5)	1	1.67
(2) and (4)		2	3.33
Total		60	100.00

Source: Survey Data.

L.B.As also partook in cheating the farmers. The agents transacted with farmers in open markets and not in official buying stations as required by law. Just like the other category of traders, they would buy very well filled soybeans bags at on-going market prices, and then re-bag and standardize the soybean bags to the officially required weight of 77.943 kg/bag. That way they would realize more bags of soybeans than they had paid for. Many of them would then sell part of their purchases for private gains, and supply only part of their purchases to the board in order to retain their agency. In this manner many L.B.As did private business with the board's resources. The dishonesty of the board's agents coupled with problem of low statutory prices may be having a depressive effect on soybeans returns to the board (see Table 19).

Table 19. Soybeans returns to the NGB in Makurdi between 1979 and 1982

Year	Returns (tons)
79/80	4,000
80/81	2,262
81/82	600
82/83	140*

*Returns as between November 1982 and 14th January 1983.

Source: N.G.B. Field Office, Makurdi.

CHAPTER 5

PROSPECTS FOR INCREASED SOYBEANS MARKETING IN BENUE STATE

5.1 Marketable and Marketed Surpluses of Soybeans: Implications for Increased Soybeans Supplies in Benue State

This section discusses marketable and marketed surpluses of soybeans among the study farmers; the factors which affected the surpluses, and the implications of their effects for increased soybeans supplies in the state.

Marketable surplus of a commodity has been interpreted as the quantity of the commodity sold (Uma Lele, 1971; Hays Jr, 1975). Discussing marketable surplus of grains among farmers of Northern Nigeria, Hays wrote that gifts of grains and similar uses of grains are, in a way, surpluses since they are not consumed by the individual who produces them; and that a "refined" definition of marketable surplus requires knowledge of purchases made by the farmers as well as the quantity of grains remaining at the end of the year, or the beginning of next harvest. The discussion of marketable surplus in this report has taken the above observations into consideration. Marketable surplus has therefore been defined as the total soybeans output of a cultivator short of any soybeans reserved for use as food in the home, gift uses, and seeds in the next planting season, plus any soybean carried over from

the previous season for sale in the current season. Marketed surplus is defined here as the quantity of soybeans which a cultivator actually sold. For clarity, marketable surplus is illustrated in symbols below:

Let

Marketable surplus	=	A
Farmers total output	=	B
Food uses of soybeans at home	=	C
Gift uses of soybeans	=	D
Seed reserves of soybeans	=	E
Stock of soybeans from previous year	=	F

Then

Marketable surplus (A) = (B) - (C + D + E) + F

The actual values of the various components in the above relationship are given in Table 20 below.

Table 20. Average soybeans production and uses among the study farmers in 1981/82 cropping season

Item	Average Quantity (kg)
Production	1961.54
Kind-payment of labour	0
Gift uses	17.69
Seed reserves	46.92
Stocks from previous season	0
Food uses	22.31

Source: Survey Data.

Putting the figures in Table 21 in the relationship for marketable surplus,

Marketable surplus = 1961.54 - (17.69 + 46.92 + 22.31)
= 1874.62 kg.

Average marketed surplus amounted to 1739.23 kg.

The factors which affected marketable and marketed surpluses were examined by means of correlation analysis. The factors were determined in the first place by giving the farmers a check-list of possible factors, and asking them to indicate the factors in the list which they considered in deciding the quantities of soybeans to produce, and to sell. Farmers were also asked to indicate any other factor that went into their soybeans production and sales decisions, but which were not in the check-list. The relationships of the identified factors with marketable and marketed surpluses are given below (Tables 22 to 24).

The r-values in Table 22 represent correlation coefficients for marketable surplus (Y10) and the corresponding variables listed. The coefficients measure the strength of relationship between marketable surplus and the corresponding variables. The r^2-values* in column

*"r^2", or the square of Pearson's correlation coefficient is a more easily interpreted measure of association when the strength of relationship rather than the direction is the major concern. It is usefully, a measure of the proportion of variance in the variable "explained" by the other (N.H. Nie et al, 1975).

Table 21. Summary of factors which affected marketable and marketed surpluses

Variable	Meaning of Variable	Mean Value	Unit of Measurement
X_6	Farmer's family strength	13.93	Persons*
X_{17}	Farmer's output	1961.54	kg
X_{18}	Quantity of soybeans sold (marketed surplus)	1739.23	kg
X_{19}	Sale price per bag	30.48	Naira
X_{20}	Quantity used at home	22.31	kg
X_{21}	Quantity reserved as seed	46.92	kg
X_{22}	Quantity used as gifts	17.69	kg
X_{23}	Size of soybean plot	5.77	ha
X_{24}	Distance to nearest market	3.35	km
X_{10}	Marketable surplus	1874.61	kg

*Persons refer to people in farmer's household from 15 years of age who were active and available for farm work.

Source: Survey Data.

Table 22. Summary of results of correlation between marketable surplus and the factors that affected it

Variable	Var Name	No. of Cases	r*	r^2	Sig Level
X_6	Farmer's family strength	60	0.3994	0.1595	0.002^{+}
X_{17}	Farmer's output	60	0.9987	0.9974	0.000^{+}
X_{20}	Quantity used at home	60	-0.2012	0.0405	0.123^{++}
X_{21}	Quantity reserved for seed	60	0.0557	0.0031	0.672
X_{22}	Quantity used as gift	60	-0.0570	0.0032	0.665
X_{23}	Size of farm land	60	0.2516	0.0633	0.005^{+}

* r = correlation coefficient

+ = Significant at 5% level or less

++ = Significant at 12% level

Source: Survey Data.

four of the same table show the proportion of variance in marketable surplus that is explained by the corresponding variables, while column five gives the level of significance of the r-value under the null hypothesis that "r" is equal to zero (Ho: r = ó; Ha: r ≠ o).

Generally, the closer the value of "r" to unity, the stronger the covariation between the pair of variables. The sign of "r" indicates the direction of variation; with a positive sign showing movement of the variables in the same direction, and a negative sign, movement in opposite directions. Table 22 shows that the variables "family strength" (X_6), "output" (X_{17}); "farm land size" (X_{23}) affected marketable surplus significantly at 5% level or less. "Quantity used at home" (X_{20}) affected it less significantly, at 12%; while "quantity reserved for seed" (X_{21}), and "quantity used as gift" (X_{22}), did not significantly affect the surplus. As would be expected a prior, output, land size, and family strength had positive effects, and home use of soybeans, a negative effect on marketable surplus. The statistically non-significant results for seed reserves and gift uses suggest that these two quantities were too small to have appreciable effects on marketable surplus.

These results have important implications for the future of soybean supplies in the state. The significant effect of output suggests that marketable surplus will mostly be affected in future by factors which promote higher outputs. Thus the introduction of the high-yielding

varieties of soybeans, M216 and M79 should lead to higher soybean yields, and therefore to more marketable surplus, assuming other complementary factors will be adequately available, and properly employed. The high significance of family strength on the surplus means that labour availability for cultivation, harvesting and marketing of soybeans could have a limiting effect on the size of the surplus. Considering that a good deal of man-hours go into the cultivation of soybeans normally, labour may indeed become more limiting as the new high-yielding varieties of soybeans are adopted by farmers; since higher yields imply that more labour hours will be required to harvest and thresh the crop. This result therefore indirectly raises a question about the chances of meeting labour needs of soybeans in future. Soybeans will normally attract available agricultural labour if it is a profitable crop to grow. However, the increasing importance of off-farm employment and the erosive effects of urbanisation and rural-urban migration on virile agricultural labour do not complement the prospects for meeting the labour requirements for agricultural production generally. Thus it might become necessary to supplement available man-hours with machine hours to meet the increase in demand for labour hours which is likely to arise with the introduction to, and adoption by farmers, of improved varieties of soybeans.

The result for size of farm land means that marketable surplus will rise as more land is brought under soybean cultivation and vice versa. Whether more or less land will come under soybeans cultivation however depends on the profitability, from farmers points of view, of soybeans vis-a-vis other crops that the farmers cultivate. In terms of land therefore, the prospects for increased marketable surplus of soybeans in Benue State depends on how strongly soybeans compare economically (since it is not yet used much as a food crop among the farmers) with other crops. Comparative economic analysis of soybeans and the other major crops that compete for land in the state has not been done, but judging by the problems, especially pricing problems (these were discussed in 4.4) of soybeans, and also by the fact that food crops such as yam, guinea corn, maize etc., are attracting increasingly higher prices in the country today, it may not be unreasonable to say that the prospects for increase in marketable surplus of soybeans through devotion of more land to its cultivation, are not very bright.

The negative effect of "home use" of soybeans on marketable surplus means that as more soybeans is used in farmers' homes less of it becomes available for the market. It was mentioned in Section 3.1 that soybean consumption directly as food is not yet much in the country.

That being the case, the effect of "home uses" on marketable surplus can only mean that home uses may reduce marketable surplus in future only if soybean rises in importance in food and other domestic uses.

Table 23 shows the results of correlation analysis of marketed surplus. The variables, "family strength","output" in the table affected marketed surplus significantly at 5% level or less, while "distance to the market" affected it less significantly at 10% level. Farmers' output had the most significant effect on marketed surplus just as on marketable surplus. The result thus indicates, given the promises of the new high-yielding varieties of soybeans, bright prospects for increase in marketed surplus of the crop. The effect of "family strength" on the surplus also has similar implications for the surplus as it has for marketable surplus. The effect of price was positive and next highest to that of output. It suggests that at higher prices farmers made more marketings of soybeans than at lower prices. The implication of this for the future of soybeans supplies in Benue State is that farmers will respond to good prices by releasing more of their soybean produce to the markets.

The significant but negative effect of market distance on marketed surplus suggests that the location of markets had an important influence on the quantity of soybeans which farmers took to the markets themselves.

Table 23. Summary of results of correlation between marketed surplus and the factors which affected it

Key Variable = X_{18} = Marketed Surplus					
Variable	Var Name	No. of Cases	r	r^2	Sig Level
X_6	Farmer's family strength	60	0.3542	0.1255	0.005^{+}
X_{17}	Output	60	0.9975	0.9950	0.000^{+}
X_{19}	Price/bag*	60	0.6328	0.4004	0.002^{+}
X_{24}	Distance to nearest market	60	-0.1531	0.0234	0.104^{++}

*Price/bag in the open market

+Significant at 5% level or less

++Significant at 10% level

Source: Survey Data.

The result implies that farmers were more reluctant to carry soybeans to distant markets than to proximate ones. Most of the study farmers sold their soybean at home. This result suggests that distant location of markets contributed to this occurence, even though most of the study farmers mentioned high transport cost as the greatest deterrent they had in this respect. Transport cost was not included in the correlation analysis because most farmers did not go to the market, and so could not give actual figures of costs, which would be necessary if transport cost would enter as a variable, in the analysis.

While location of markets at distant points from farmers' homes may not have the direct effect of reducing marketed surplus of soybeans (since local soybean assemblers can always search out soybean surpluses from farmers homes, and carry such surpluses to the market), it may continue to have the adverse effect of leaving farmers inaccurately informed about soybeans prices and other market variables generally; unless alternative and more reliable sources of market information (than the traders on whom farmers presently rely mostly for information- see section 4.4) are made available to the farmers.

5.2 Prospects for Increased Soybean Demand in Benue State

It was pointed out in section 1.3 that soybean becomes edible and useful to both man and animal only

after it has undergone some form of processing. Thus the bulk of the demand for raw soybeans in Nigeria is a derived one, arising from the demand for processed forms of the crop. Soybean oil and soybean meal are the two major forms in which processed soybeans is consumed in Nigeria. However, "daddawa" which is another processed form is increasing in importance as another source of derived demand for soybeans, especially in Benue State. This is suggested, if not implied, by the decreasing quantities of soybeans which is reaching the Nigerian Groundnut Board since 1979 (see Table 19).

Unless soybean production in Benue State is decreasing, Table 19 implies that more soybeans are passing through other channels than are going to the board. The responses of the traders covered in this study indicate that soybean buyers from outside the state (mostly from Kafanchan area) constitute a more important outlet for soybeans than the groundnut board. Twenty of the respondents (or 100%) gave this opinion. If soybean production is not falling, and the local soybean processing industries are growing as Table 19 indirectly suggests, then the development of the local industries indicates good prospects for increased soybean demand in Benue State.

According to Knipscheer and Ay (1982), imports of soybean oil alone to Nigeria by 1980 (see Table 24) represented a production possibility of about 333,000 metric tons of soybeans. They also estimated that the

Table 24. Imports of soybean oil in Nigeria - 1977/80

Year	Amount (metric tons)
1977	70,777
1978	61,900
1979	50,000
1980	60,000*

*Preliminary estimate.

Source: Knipscheer and Ay, 1982, p. 19.

supply of soybean meal to the country must grow at a rate of about 30% per annum to keep pace with an estimated growth rate of 7.2% annually of the Nigerian poultry industry. These growth figures represent large potential demand for raw soybeans. However, the demand and the production possibilities which they represent could only be realised within the country if there were enough processing capacities for soybeans in Nigeria. Otherwise, the bulk of this demand would continue, as it were, to be satisfied with imported soybean oil and meal. Some promise nevertheless currently exists for part of these demands to be satisfied from Benue State in future.

About 1980, the government of Benue State commissioned a reconnaisance and feasibility study of the potential for production and processing of soybeans, rice and

maize in the state. This project has been commissioned, and it will have the capacity to process 78,000 tons of soybeans per annum (Nyiakura, 1983). The project represents a potential demand of 78,000 tons of soybeans. It therefore points to some additional good prospects for increased soybean demand in Benue State.

5.3 Prospects for Improved Soybeans Marketing in Benue State

The last two sections highlighted some factors which could lead to increases in demand and supply of soybeans in Benue State. An efficient and effective marketing system is however necessary for any such increases to occur. The marketing system must function in a manner that permits prompt and proper linkage between the forces of demand and supply. Provision of this linkage can take place only if the problems which tend to weaken effective functioning of the system are at least minimised. The prospects for improved soybean marketing, and therefore for the realisation of the demand and supply promises discussed above depend largely on the extent to which the marketing problems in the soybean marketing system can be overcome.

To a large extent the type of marketing system that exists at anytime, or that which could be evolved, is dictated by "social capital", or the resources which society creates for itself (Uma Lele, 1972, U.S.D.A, 1972; Adeyokunu, 1980). Thus most of the

problems of the soybeans marketing system reflect the developments in a transitional economy in which urbanization is increasing and resulting in greater market-orientation. In any marketing system, price is the fundamental link between the forces of demand and supply. As was pointed out in Section 4.4, soybean price was the most problematic market variable in the period covered by this study. Soybean farmers considered both the statutory or official and the unofficial prices of soybeans to be low. The producer price for the season was lower than the open market price even during the months just after harvests.

Low official soybean price derives basically from the marketing policy of the Nigerian Groundnut Board. The board's mandate is to support and stabilize the price of soybeans and other crops under its jurisdiction. By this mandate, the role of the board in soybean marketing is essentially that of a residual buyer. Viewed against this role, the relatively lower prices which the board offers to soybean producers is justifiable, since farmers are free to sell soybeans to anybody, anywhere in the country, and to come to the board only in the event of gluts and attendant low prices. If however it is considered that the underlying objective of the board's marketing policy is not only to save farmers from incurring big losses whenever soybean market goes soft,

but also to stimulate increases in production of the crop, then the relatively uncompetitive statutory soybean prices could be considered ineffective, judging by the decreasing amounts of soybeans that the board has purchased since its inception in 1977 (Table 25). Nevertheless, it is difficult to say categorically, that the board has been ineffective in the respect since the board's purchases do not show the total volumes of soybeans produced in the country in the years listed. Parts of the production in each of the years passed unmonitored through local market channels.

Part of the responsibility of the board is to export soybean surpluses from the country. For this reason world market price of soybeans is one of the factors that is always taken into consideration in fixing soybean producer prices. It is reasonable to argue that relating domestic soybean prices to prices in foreign markets was only relevant while the board exported soybeans from the country. Table 25 shows that 1977 was the last time the board exported its soybean purchases. The ever-increasing importance of domestic soybean markets is making soybean exportation increasingly unnecessary. Thus the board should, in the face of this development, reduce, or completely drop whatever influence it lets world market prices have on domestic price fixing for the crop. Variables such as the cost of production of soybeans vis-a-vis

Table 25. Official soybean purchases and sales 1977-1982

Year	Purchases (tons)	Producer Price (₦/ton)	Local Sales (tons)	Sale Price(₦/ton)*	Export (tons)	World mkt. price (₦/ton)+
1977/78	259	130	0	128	250	150
1978/79	Nil	135	Nil	N.A.	Nil	182
1979/80	4,746	135	4,746	125	0	185
1980/81	2,330	150	2,330	215	0	175
1981/82	Nil	155	Nil	N.A.	Nil	160
1982/83	2,047	175	N.A.	N.A.	N.A.	N.A.

N.A. = Not available.

*This price is the Free-on-Board (FOB) price, and the price which the board charges local processors who buy soybeans from it.

+This price is the cost-Insurance-Freight price. It is the price which the board earns from exporting soybeans.

Source: N.G.B., Kano 1983.

the production cost of other crops like groundnut and maize with which soybeans compete for processing facilities, and farmers' production resources respectively, should be given more weight in order to enahance the development of soybeans in the country.

The other aspect of the low pricing problem is the notion of the study farmers that the prices they received from soybean traders were lower than what they could obtain from outside their immediate locations. This problem stemmed very much from the absence of a good information system in the soybean marketing system in the state which caused undue reliance of the farmers on the traders for market information. The need for better market information about prices and commodity flows increases as commodities move over greater distances. An appreciable volume of soybeans produced in Benue State apparently moves outside the state. Therefore the kind of informal information system found in the soybean marketing system no longer suffices. At the same time, for market information to be meaningful, there should be acceptable and widely known information on standards of quality and quantity of the commodity. There also should be policies aimed at ensuring conformity with, and confidence in the standards of all parties involved in transactions on the commodity.

Inadequate facilities are among the principal problems of a marketing system in a transitional economy.

Thus the existence of storage and transportation problems in the soybean marketing system were also other consequences of the state of development of the economy of Benue State. As was mentioned in Section 2.2 only 29% of the 3,690 km of feeder roads in the state are passable all year round. This low percentage points to a need for a more extensive road network to facilitate produce transportation from farms to homes, and from areas of surplus to deficit areas. Provision of more good roads will help to bring down the cost of transportation and also encourage farmers to more more freely in search of information and better markets.

The need for more storage facilities will arise as more soybeans are produced with the high-yielding strains of the seed. Since the capital and credit requirements of building and operating storage facilities are high it may be necessary for the government, through its agencies (such as the Groundnut Board and the ministry of agriculture), to set up storage facilities which farmers can use at some manageable costs. Such facilities should be located in strategic positions in farmers villages.

It was suggested in Section 3.1 that some of existing associations such as Tiv Bams and "Farmers' Associations" in the state could serve as good starting points for cooperative action among the farmers. Cooperation will help the farmers to reduce marketing costs, improve capacities to collect and use information, improve their

selling power and reduce market related uncertainties for them. Farmers will be willing to participate in cooperative organisations if doing so can effectively reduce their dependence on traders by efficiently handling the trading functions which the traders usually perform. Doing this cannot however be an easy task in the face of the constraints imposed by poor infrastructure and poor market information system. But these constraints will diminish, and eventually peter out as more development occurs in the state. Thus the prospects for the formation of effective marketing cooperatives to help farmers in tackling their market-related problems is also partially tied up with the prospects for general, but especially infrastructural development in the state.

CHAPTER 6

CONCLUSION

6.1 Summary of Findings

Soybean provides protein meal for use in livestock and poultry feeds, and oil for use in a variety of foods in Nigeria. Increase in the use of soybeans in the country could help to ameliorate the occurence of protein deficiency and malnutrition because soybean is a high protein crop.

Soybean was introduced into Nigeria about 54 years ago. However the crop has not developed rapidly in the country due to problems associated with its preparation into edible forms; production problems, and also marketing problems. Food scientists and nutritionists in the country and elsewhere have identified ways of processing soybeans into convenient foods. Its use as food in Nigeria may thus grow in future as more people become educated about its usefulness, and about the ways to prepare it. With the release of high-yielding lines of soybeans, poor yield which has been the major production problem of the crop may be overcome with time.

Identifying the most important problems of soybeans marketing in Benue State; estimating marketable and marketed surpluses of the crop and determining what factors

affected the surpluses, as well as assessing the prospects for improved soybeans marketing in the state were the major objectives of this study. Using the "problem identification approach" to market research, sixty farmers selected purposively and randomly from three Tiv-speaking districts of Benue State, viz Gboko, Katsina-Ala and Vandeikya; and twenty traders also selected purposively and randomly from two popular soybean markets in Tyowanye and Wanune, were interviewed using two sets of structured questionnaires. Data for the 1981/82 soybean marketing season were collected between November 1982 and January 1983. The major findings from analysis of the data so collected are given below.

a. Soybean Marketing System

Unlike many other crops which farmers produced for home use and for sale, soybean was produced primarily for sale by the farmers covered in this study. The usual starting point for soybean commercialization was mainly sale by farmers to local soybean assemblers known as Yan Blanda in the vernacular of the areas. Some farmers also sold soybeans in local markets. Sales occured after harvest or later in the year after a period of storage. More of the farmers (25%) stored and sold soybeans between April and June, than in any other period of the year. Soybean storage among the farmers took

place mostly at home, but many soybean traders stored the crop in the local markets.

Two major categories of marketing channels were identified in the system; viz, the official and the unofficial channels. The official channel comprised soybean contract farmers, agents of licensed buying agents, licensed buying agents, the Benue Agricultural Corporation (ADC), the Benue State Ministry of Agriculture and Natural Resources (MANR); the Nigerian Groundnut Board, domestic vegetable oil mills, and users of soybean meal and soybean oil. The unofficial channels comprised non-contract soybean farmers, contract soybean farmers, local soybean assemblers, non-indegenous soybean traders, domestic soybean markets outside Benue State, local soybean retailers and consumers.

The two markets studied were located in Tyowanye and Wanune. Both are five-daily markets. In both markets there were relatively large numbers of buyers and sellers. Among the buyers however, the indegenous assemblers (the Yan Blanda) exhibited competition - reducing tendencies. They behaved in the markets like members of an unwriteen association designed to give members as many advantages as possible over other buyers of soybeans. But for seldomly occured cases of differentiation on colour grounds, raw unprocessed soybeans was the only form significantly traded in the market. The discriminative

behaviour of the local assemblers, especially towards traders from outside the state, reduced entry into the markets. Price information flowed freely in the markets, and transactions on soybeans were carried out through individual negotiations.

b. Major Problems in the Marketing System

The three most limiting problems in the system, in the opinion of the farmers, were pricing problems (ranked 1st by 85% of the farmers), transportation problems (ranked 1st by 10% of the farmers), and unreliable soybean traders (ranked 1st by 5% of the farmers) in that order. Other important problems in the system were lack of market information, lack of grades and standards, and inadequate storage facilities.

The pricing problem expressed by the farmers was bi-natured. The first aspect was the low level of soybean producer price relative to the open market price of the crop in the same period. The open market average price recorded in five markets in January was ₦18.40/bag of 77.943 kg weight while the statutory price for the season was ₦13.46/bag. The other aspect of the pricing problem was the farmers' notion that the prices they received from the local traders were too low compared to the prices obtainable outside the farmers location in a place like Kafanchan, for instance. This aspect of the

problem however appeared to be more a result of farmer misinformation by local traders than anything else.

The most important transportation problems experienced by the farmers was the problem of high transport cost; followed by poor availability of good feeder roads. Sixty-five percent of the farmers stayed and sold soybeans at home due to high cost of transport. Such farmers sold to local assemblers who went to meet the farmers at home. The traders served as the farmers major sources of price and general market information. 88.33% of the farmers however believed that information received from the traders was seldom reliable.

Lack of grades and standards was another problem in the system. Whereas the official standard weight of a jute-bag full of soybeans is 77.943 kg, this weight was not at all observed in the transactions between the trades and the farmers. Rather traders had soybean bags filled to the brim every time a transaction occured. The other aspect of this problem concerned L.B.As. These bought unstandardized bags of soybeans, and re-bagged the soybeans before delivering to the board. Both the L.B.As and the other groups of traders were therefore equally engaged in diddling the farmers.

The farmers also had storage problems. The most serious handicap they faced in this respect was the inadequacy of storage space.

c. Marketable and Marketed Soybean Surpluses

The estimated size of marketable surplus among the sixty farmers was 24.37 bags (or 1874.61 kg soybeans) while marketed surplus was estimated to be 22.61 bags (or 1739.23 kg soybeans).

Using correlation analysis, the factors which affected marketable and marketed surpluses were examined. "Family strength", "Farmer's output" and "land size" affected marketable surplus significantly and positively; "home uses" of soybeans affected it significantly but negatively, while "seed reserves", and "gift uses" of soybeans did not have significant effects on the surplus.

The significant and positive effect of soybean output on marketable surplus implies that output and the surplus move in the same direction. So any output-raising development such as the introduction of high-yielding strains of soybeans should result in an increase in marketable surplus. Similarly, increases in farmer's family strength and land size will also result in increases in marketable surplus. The significant but negative effect of "home uses of soybeans" implies that less soybeans will be marketed by farmers as more of soybeans is used at home.

Marketed surplus was significantly and positively affected by "family strength", "output" and "soybean price" in the open market. "Distance" of market nearest to the farmer affected marketed surplus significantly but negatively. The results for family strength, output

and soybean price imply that marketed surplus will rise with a rise in any of the three factors; and the result for "distance" says that the further away from farmers' homes a market is, the less willing farmers will be to carry soybeans to the market.

d. Prospects for Increased Soybean Marketing in Benue State

The prospects for increased demand and supply of soybeans in Benue State as well as the possibility of minimising the problems in the soybean marketing system were assessed in order to assess the nature of prospects for improved soybean marketing in the state.

The demand prospects are considered bright; and the factors which have encouraged this opinion are the high domestic demands for soybean meal and soybean oil; the increasing importance of the "daddawa" or local-maggi-producing concerns in Kaduna State, the declining trend in groundnut production and consequent increase in processing capacity for soybeans in the country; and the plan to build a big soybean processing plant in Benue State by the state government.

On the supply side too, the prospects are considered good. Relevant factors that encourage this opinion are the introduction of high-yielding soybean lines, the possibility of supplementing human labour with machine labour in soybean cultivation and the stabilizing effect

which the entrance of the Benue State government as a major buyer in the soybean market will have on soybean prices.

Among the problems that are effecting the marketing system for soybeans in the state, low pricing was the most serious, followed by high cost of transport, and unreliable local traders as sources of market information to traders. The relatively lower prices which the groundnut board offers soybeans farmers was considered justifiable on the grounds of the fact that the board is only a residual buyer. It was however suggested that in fixing producer prices, the board should increase the emphasis on domestic market conditions since the board no longer exports soybeans. Doing so is likely to improve statutory soybeans prices by making them competitive in domestic soybeans markets. More competitive prices will stimulate greater production of soybeans, other things being equal.

The problem of low open market prices as presented by the farmers was rather too notional, and appeared to be one of the consequences of the existence of poor market information system in the state. However the problem of lack of information, as well as those of high cost of transport, poor and inadequate feeder roads, lack of grades and standards and lack of adequate storage facilities will diminish as the economy grows.

Conclusion

Given the good prospects identified for increases in both demand and supply for soybeans in the state, and the high possibility that the problems identified in the soybean marketing system in the state will ease as the state goes forward on the road of development, this study concludes that there are good prospects for increased and improved soybeans marketing in Benue State.

6.2 Limitations of the Study

The problem identification approach to market research was used in this study. Ideally the two aspects of the approach, viz: direct problem identification, and determining how the structure and organisation of the marketing system relate to the problems and their solutions should be covered in the study. However, the necessity for the researcher to collect the required data within a short period of time, and also to keep the whole study within the confines of a slim budget, made it imparative to compromise comprehensiveness. Since no information was available on soybeans marketing in Benue State prior to this study, it was considered more useful to concentrate on the description of the system and the problems which were afflicting it. Analysis of the structure and organisation of the marketing system was therefore left out of the study. The result of this omission is that the marketing system has not been quantitatively evaluated.

The study further lacks in comprehensiveness by its limited geographical coverage. Only three out of six districts which produced soybeans in the state in 1979 were covered in the study. This limited coverage was again necessitated by budget and time constraints. And it means that the study cannot be considered a comprehensive examination of the soybean marketing system in Benue State.

Lastly, data collection for the study was guided principally by the primary objective, which was to describe the existing marketing system. The nature of data collected did not therefore allow for much statistical tests. Thus the study is also limited in statistical strength.

6.3 Suggestions for Further Research

Bearing the above limitations in mind, the author is of the opinion that the comprehensiveness, and therefore the usefulness of this study will be greatly enhanced if the study is carried further by doing the following:

(1) extending its coverage over all the soybean producing areas of Benue State,

(2) evaluating the marketing system in terms of its structure, its conduct, and its performance through the use of quantitative data objectively collected over a period of at least one marketing season,

(3) doing an on-farm production cost study in order to better appreciate the economic implications of the prices which soybean farmers are given for the crop,

(4) since the local soybeans processing businesses outside Benue State are veritable sources of demand for soybeans produced in the state, it would be useful, in order to get a very complete picture of soybeans marketing in the state, to monitor the movement of the crop out of the state to the processing businesses. This will also help to ascertain the actual size of soybeans produced in the state at any time.

REFERENCES

1. Adeyokunu, T.A., 1980
"Agricultural Marketing and Small Farmers in Nigeria", Nigerian Small Farmers: problems and prospects in IRD, p. 88. S.O. Olayide, J.A. Eweka; V.E. Bello Osagie (eds). Centre for Agric. and Rural Development (C.A.R.D), Univ. of Ibadan.

2. Anonymous,
"Agricop 101". Federal Department of Agricultural Cooperatives, Lagos.

3. Arua, E.O., 1980
"Towards the promotion of Effective Membership of Agric. Coops. in Nigeria", Nigerian Journal of Coop. Studies, Vol. 1 No. 1, 1980.

4. Bichi, S.I.
"Position (past, present and future) of Soybeans among the Oilseed Crops in Nigeria". Paper presented on behalf of the General Manager, Nigerian Groundnut Board at the 3rd Annual Conference of Nigerian Soybean Scientists, Makurdi. February 1983.

5. Central Bank of Nigeria, 1981
Agricultural Credit and Finance in Nigeria
Proc. of a Seminar organised by the C.B.N, April 27-30, 1981.

6. Delouche, J.C. 1975
"Seed Quality and Storage of Soybeans", Soybean Production, Protection ... (38) p. 86.

7. Dahl, D.C. and J.W. Hammond, 1977
Market and Price Analysis. The Agricultural Industries. McGraw-Hill Book Coy, N.Y., U.S.A.

8. Ejiga, N.O.O., K.L. Robinson, 1981
The Economics of Cowpea Marketing in Nigeria.
Dept. of Agricultural Economics, Cornel University, Ithaca, N.Y.

9. Ezedinma, F.O.C., 1965
"The Soybean in Nigeria". Proc. of the Agric. Soc. of Nigeria 3. 13 - 16 Soybeans in the Nigerian Diet (10).

10. Faryna, P.J., 1978
Soybean in the Nigerian Diet, Extension Bulletin No. 21. Home Economic Series, AERLS, Ahmadu Bello University, Zaria.

11. Ferrier, L.K., 1975
"Simple Processing of whole soybean". Soybean Production, Protection ... (38) p. 178.

12. Federal Office of Statistics, Lagos, 1979
Digest of Statistics Vol. 27.

13. _____ 1980
Nigeria Rural Economic Survey 1978/79.
Provisional Report on Crop Estimates 1978/79
Vol. 1 Nos 1 and 2.

14. Handash, D.A., 1979
Benue State Inception Report, Hawaiian Agronomics Soybean, Rice and Maize ... (16) p. 8.

15. Harrison, K. and K. Shwedel, 1974
"Marketing Problems Associated with Small Farm Agriculture". Report on an ADC/RTN Seminar held at Michigan State University, June 7-8, 1974. The Agric. Dev. Council Inc. N.Y., U.S.A.

16. Hawaiian Agronomics (Int.) Coy Ltd, 1980
Soybeans, Rice and Maize. Feasibility Report for Agric. Dev. Corporation, Benue State, Nigeria.

17. Hays, H.M., 1975
The Marketing and Storage of Food Grains in Nigeria. S.A.P.P. No. 58, IAR/ABU, Zaria.

18. Hill, L.D. 1975
Agricultural Marketing Planning in Resource Development. University of Illinois, College of Agriculture Special Publication No. 9, December 1975.

19. Ijere, M.O., 1981
"The Role of Cooperatives in Nigerian Agriculture", Agric. Finance in Nigeria, C.B.N., 1981 (4) p. 316.

20. King, R., 1975
"Experience in the Administration of Credit and Marketing Societies in N/Nigeria", Agric. Admin. (2), 3rd July 1975 pp. 195-208.

21. Knipscheer, H.C. and P. Ay, 1982
The Potential of Soybeans in Nigeria and Results of an IITA Survey in two Principal Production Areas (Benue State and Zonkwa-Abuja), IITA (Agric. Econ.), Ibadan.

22. Lele, Uma, 1971
Food grain Marketing in India: Private Performance and Public Policy. Cornell Univ. Press, Ithaca N.Y., 1971.

23. _____, 1972
"Role of Credit and Marketing Functions in Agric. Development". Paper written for International Conference on Agric. in the Development of Low Income Countries. Germany, August, 1972, pp. 16-20.

24. Leleji, O. and Adedzwa, D.K., 1983
"Two Soybean Lines M79 and M216 proposed for Release". Department of Plant Science, IAR/ABU. Paper presented at the Conference of Nigerian Soybean Scientists - Makurdi, 1983.

25. M.A.N.R., Benue State, 1982
IADP; Preparation Report; Final Report Vol. 1; Main Report and Summary. Prepared by A.A.D.P. Benue State on behalf of M.A.N.R.

26. Mathew, I.P. 1977
Evaluation of Growth Yield and General Performance of join Varieties of Soybeans (Glycine Max (L) Merr) at different populations. Unpublished Ph.D. thesis. Department of Agronomy, Ahmadu Bello University, Zaria, 1977.

27. Moss, E.R.; J.K. Hatch; D.R. Mickelwait and C.F. Sweet, 1976
Strategies for Small Farmer Development Vol. II. Cases studies in Social, Political and Economic Development. Westview Press Inc. Boulder Colorado 80301, U.S.A., p. 222.

28. Nyiakura, O., 1983
"Soybeans Production in Nigeria - problems and prospects." Paper presented at the 3rd National Seminar of Nigerian Soybean Scientists, Makurdi, February, 1983.

29. Olayemi, J.K., 1972
"Improved Marketing as a Strategy for generating increased Food Production: The Nigerian Experience", West African Journal of Agricultural Economics, Vol. I No. 1, 1972 pp.

30. Onochei, B.E., 1965
"The Potential Value of Soybean Supplement in Nigerian Diet". Proc. 3rd Annual Conference of Agricultural Society of Nigeria 4: 43-45
Soybean in the Nigerian Diet, Faryna, 1978 (10) p. 5.

31. Oshuntogun, C.A., 1974
"Cooperative and the Nigerian Experience". Paper presented at a Symposium on the Nigerian Cooperative and the National Agric. Dev., Ibadan, Feb. 1974.

32. Pritchard, N.T., 1969
"Framework for Analysis of Agricultural Marketing Systems in Developing Countries". Agric. Econ. Research Vol. 21 No. 3 (July 1969) pp. 78-85; Food Grain Marketing and Storage ... H.M. Hays, Jr 1975 (17) p. 2.

33. Thodey, A.R., 1968
Marketing of Staple Foods in Western Nigeria S.R.I. Calif. (March 1968), Chap. XI.

34. Tomek, N.G. and K.L. Robinson, 1972
Agricultural Product Prices, Cornell University Press, Ithaca, N.Y., U.S.A.

35. U.S.D.A., 1971
World Supply and Demand Prospects for Oilseeds and Oilseeds Products in 1980 with emphasis on Trade in the L.D.C's. Foreign Agric. Econ. Report No. 71, USDA Econ. Research Service.

36. _____, 1972
Improving Marketing Systems in Developing Countries: An approach to identifying problems and strengthening technical assistance. U.S.D.A. in cooperation with U.S. Agency for International Development (Feb. 1972).

37. _____, 1973
Market Performance: concepts and measures. Agric. Econ. Report. No. 244. Econ. Research Service U.S.D.A. (1973) chapters 1 and 2.

38. Whigham, D.K. (ed), 1975
Soybean Production, Protection and Utilization Proc. of a Conference for Scientists of Africa, the M. East and S/Asia. Addis Ababa, Ethiopia (Oct. 1974). International Program for Soybeans (INTSOY), Univ. of Illinois at Urbana Champaign, INTSOY Series No. 6, 1975.

APPENDIX A

Department of Agricultural Economics and Rural Sociology
Institute for Agricultural Research
Ahmadu Bello University
Zaria

Grain Legumes Research Project
Soybean Marketing Component

Title: Problems and Prospects of Soybean Marketing in Benue State, Nigeria.

Farmer Questionnaire

Name of Enumerator:.....

Date of Interview:.....

Farmer Number:..... 1-2

A. General Information

1. Name of Farmer .....
2. Village of Farmer 3-4
3. Local Government Area 5-6
4. How old are you?
   1. Less than 20 years 7
   2. _____ 20 to 39 years
   3. _____ 40 to 59 years
   4. _____ 60 to 79 years
5. Are you married? 8
   Yes 1
   No 2
6. How many wives have you? 9

_____

7. Please provide the information required below about your children, and your other dependants who live, eat and work with you on the farm.

Category	Male	Total No.	No. active	Female	Total No.	No. active	
Children	1. 0- 6 yrs			1. 0- 6 yrs			10-12
	2. 7-15 yrs			2. 7-15 yrs			
	3. Above 15 yrs			3. Above 15 yrs			13-15
		Total	No.		Total	No.	

Other Dependants	Male	Total No.	No. active	Female	Total No.	No. active	
	1. 0- 6 yrs			1. 0- 6 yrs			16-18
	2. 7-15 yrs			2. 7-15 yrs			
	3. Above 15 yrs			3. Above 15 yrs			19-21

To Enumerator: *'No. active' (cols. 3 and 6) means the number of people in the specified category who work with the farmer on the farm.

8. How many of your wives work with you on the farm? 22

9. Please indicate which of the following forms of organisation you belong to:

   1. Bam 23
   2. Farmers' Association 24
   3. Church Council 25
   4. School Board 26
   5. Others (specify) 27

B. Farmer's Experience with Soybeans

10. For how long have you been farming: 28

   1. Less than 5 years
   2. More than 5 years
   3. Less than 10 years
   4. More than 10 years

11. For how long have you been growing soybeans? 29

   1. For less than 5 years
   2. For more than 5 years
   3. For less than 10 years
   4. For more than 10 years

12. Why do you grow soybeans? 30

   1. It fetches good price in the market
   2. It is relatively easier to grow than other crops
   3. It is what other people are doing.
   4. Others (specify) .....

13. Are you growing more or less soybeans now than you did in the previous season?

    1. More 31

    2. Less .....

14. Why?

    .....

    .....

    .....

C. <u>Soybeans Output, Sales and Utilization</u>

15. What crops did you grow together (inter-crop) with soybeans during the last season? (Please list the crops in order of importance to you). 32-34

    1. .....

    2. .....

    3. .....

    4. .....

    5. .....

16. Please give the information required below about the crops you have listed in question 15.

    Note: In column 1 below, enter the crops in the same order as they were listed in question 15.

Crop	No. of units produced	No. of units sold	Price per unit	Amount received	Place(s) sale

17. If you also grew soybean alone (as a sole crop) in the last season, please give the information required below:

No. of bags produced	No. of bags sold	Price per bag	Amount received	Place of sale

18. If you got some soybean from any other sources, apart from what you produced yourself, please indicate so in the table below.

From where	No.of bags	Cost per bag if bought	No of bags sold	Sale price per bag	Amount received	Place of sale

19. Why did you get more soybeans from these other sources? 35

    1. To meet your customers' demands.
    2. To meet your family's needs.
    3. To meet the needs of both your customers and family.
    4. Others (specify) .....

20. Out of the total number of bags of soybeans you produced in the last season, how many bags did you: 36-41

    1. Consume at home ..... bags
    2. Feed to livestock ..... bags
    3. Use to pay off labor ..... bags
    4. Reserve as seeds ..... bags
    5. Use as gifts ..... bags
    6. Others .... bags
       .... bags
       .... bags

D. Determinants of Marketable and Marketed Surpluses

21. Could you indicate the sizes of the plots where you grew soybeans together with other crops, in the last season.

Plot No.	Size (ha)	Fraction occupied by soybean

22. If you also grew soybean alone in some plots, please give the information called for below:

Plot	Size (ha)

23. Which market did you take your soybeans to most often in the last season?

_____

24. How far is this market from your home? _____km.

25. What price did you get most often for a bag of soybeans in this market?

_____₦/bag.

26. Please look at the factors listed in the table below, mark 'X' (in column 2) against those factors you believe affect the amount of soybeans that you are willing to market; and rank the factors which you have marked according to their importance to you (do the ranking in column 3).

Factor	X	Rank
1. Area of land you have under soybeans.		
2. The amount of soybean you harvested.		
3. The size of your family (including your dependants)		
4. The price of soybean in the market.		
5. The distance of the market from your home.		
6. Others (specify)		

E. Market Outlets

27. Please identify which of the following outlets that you use in disposing of your soybean by marking 'X' in column 2. Also rank the outlets you have identified by using the numbers 1,2,3 etc., in column 3.

Outlet	X	Rank
Local trader at your hom		
Local assembler at the local market		
Urban trader at Kafanchan		
LBA		
Bam		
Farmers' association		
Others (specify)		

28. Please describe the processes you usually follow to sell your soybeans.

.....

.....

.....

F. Seasonality and Storage Practices

29. During which of the following periods did you sell most of your soybeans in the last season? 42

1. Between January and March.
2. Between April and June.
3. Between July and September.
4. Between October and December.
5. Others (specify) .....

30. Do you often sell your soybean at your compound? 43

    1. Yes
    2. No

31. If 'yes', why? 44

    1. Because you needed money urgently.
    2. Because you entered into an agreement with the buyer.
    3. Because it was more convenient than going to the market.
    4. Others (specify) .....

32. Did you store soybeans?

    Yes/No 45

33. If 'yes', why? 46

    1. to get a higher price in future.
    2. to keep seeds for next season.
    3. to give your family a regular food supply.
    4. Others (specify) .....

34. Where did you store soybeans? 47

    1. At home.
    2. In the market.
    3. In the farm.
    4. Others (specify) .....

35. How did you store soybeans? 48

    1. In rumbu.
    2. In sacks.
    3. In clay pots.

4. In baskets.

5. Others (specify).....

36. If you were to advise somebody on the best way to store soybeans, what things would you ask him to do?

.....

.....

.....

G. Transportation Modes and Costs

37. How did you take your soybeans home from the farm after harvest? 49

1. by head portrage.

2. by bicycle.

3. by wheel barrow.

4. by motorcycle.

5. by other motor vehicle.

38. If you usually took soybeans to the market, please give the information required below for the last five occasions you did so.

Qty (bags)	From where	To where	Mode of Transportation	Amount paid if any
1.				
2.				
3.				
4.				
5.				

39. What prices were offered for a bag of soybeans in the last season by the following: 50-51

(A) (1) M.A.N.R. ____N; (2) _____ don't know.

(B) (1) Groundnut Board ____N; (2) ____ don't know.

40. How do you usually find out the price that a bag of soybeans is attracting in a season?

1. Through agric. extension officers. 52
2. Through local traders.
3. Through licenced buying agents (L.B.A's)
4. Through farmers association.
5. Others (specify) _____

41. What is the most serious problem you are having in marketing your soybeans? 53

1. Pricing problem
2. Storage problem
3. Transportation problem
4. Problem of unreliable soybean traders
5. Others (specify) _____

42. If you have pricing problem, is it 54

1. _____ low prices, 2. uncertain prices ____
3. or what? (specify) _____

43. If you have storage problem, is it 55

1. Inadequate space
2. High storage cost
3. Storage losses
4. Or what? (specify) _____

44. If you have transportation problem, is it 56

1. High transportation cost
2. Vehicle difficulties
3. Bad roads
4. Or what? (specify) _____

45. If you have problem with soybean traders, is it that 57

1. The traders don't tell you the correct price
2. The traders don't buy as much of your soybeans and you want them to buy
3. The traders often owe you money after they have taken crop
4. Or what? (specify) _____

46. Are there any other problems you have in marketing your soybeans? (Please say what these problems are)

_____

_____

_____

APPENDIX B

Department of Agricultural Economics and Rural Sociology
Institute for Agricultural Research
Ahmadu Bello University
Zaria

Grain Legumes Research Project
Soybeans Marketing Component

Title: Problems and Prospects of Soybeans Marketing in Benue State, Nigeria.

Trader Questionnaire

Name of Enumerator: .....

Date of Interview: .....

Questionnaire Number: 1-2

A. General Information

1. Name of Trader: .....
2. Trader is .....a wholesaler; ..... a retailer 3
3. Trader is .....a man; ..... a woman. 4

B. Trader's Experience with Soybean

4. For how long have you been selling soybeans? 5
   1. For less than 5 years.
   2. Between 5 and 10 years.
   3. Between 10 and 15 years.
   4. For more than 15 years.

5. What crops, including soybean, do you sell?

Crop	For regular sale (Mark X)	For occasional sale (Mark X)
Soybeans		

6. What crop, among the crops you named in question 5, do you sell most often?
..... 6

7. About what part of your total income comes from selling soybeans?

..... more than $\frac{3}{4}$; ..... more than $\frac{1}{2}$;

..... about $\frac{1}{4}$; ..... no response.

C. <u>Sources of Soybeans and the Problems Encountered in</u>

8. How do you obtain the soybeans you sell? (Please mark 'X' against any answer applicable to you). 7-12

1. ..... You buy from farmers at their homes and store them until you need them.
2. ..... You buy from farmers who come to the market.
3. ..... You buy from people (who are not farmers) in the village.
4. ..... You buy from other traders in other markets when necessary.
5. ..... Others (specify):.....
6. ..... No response.

9. Which of the ways you have marked in question 8 is the most important way you obtain soybeans?

.....

10. Why do you consider this way (in question 9) the most important way of obtaining soybeans? 13

1. ..... It is the cheapest way.
2. ..... It is the most reliable way.

3. ..... The people involved in it are your friends/relatives.

4. ..... Others (specify) .....

5. ..... No response.

11. Have you been experiencing any problems in obtaining soybeans to sell? 14

1. Yes

2. No

12. If 'Yes', what are these problems? 15-18

1. ..... Supplies from most soybeans are irregular and unreliable.

2. ..... You are facing competition from other buyers.

3. ..... The sources of soybeans are too far away from you.

4. ..... Others (specify): .....

5. ..... No response.

13. Please briefly describe the processes you go through to obtain the soybean you sell.

.....

.....

D. <u>Soybeans Outlets, Selling Practices and Problems</u>

14. To whom do you sell your soybeans? (Please mark 'X' against any answer applicable to you). 16-26

1. ..... To other wholesalers in the market.

2. ..... To assemblers who take soybeans to other markets.

3. ..... To consumers in the market.

4. ..... To some industries around.

5. ..... To the groundnut board.

6. ..... To the MANR.

7. ..... To retailers in the market.

8. ..... Others (specify):.....

9. ..... No response.

15. Please which three of the ways you identified in question 14 are the three most important ways you sell soybeans? (Use the numbers 1, 2, 3, etc., as corresponding to the ways listed in question 14 to indicate your answer for question 15 here; and put the three in order of importance).

1. .....

2. .....

3. .....

16. If you are a whole saler, what is the biggest measure you use for soybeans.

1. ..... bag

2. ..... basket

3. ..... sack

4. ..... others (specify):.....

Enumerator: Please randomly select 5 of the measure identified in question 15, and weigh their soybean contents. Record the weights below:

1. .... kg; 2. .... kg; 3. .... kg; 4. .... kg;

5. .... kg.

17. If you are a wholesaler, give the prices called for below:

a) Cost at which you buy one measure (the biggest measure you mentioned in 16) full of soybeans in the following periods.

1. ..... ₦ just after harvest.

2. ..... ₦ 3 months after harvest.

3. ..... ₦ Towards planting time for soybeans.

b) The price at which you sell this same measure of soybeans.

1. ..... ₦ just after harvest.

2. ..... ₦ 3 months after harvest.

3. ..... ₦ Towards planting time for soybeans.

18. Do you consider soybean trade a profitable trade? 27

1. Yes

2. No

19. How many bags of soybeans did you buy and sell?

a) Last season: (i) bought ___bags (ii) sold ___bags

b) This season: (i) bought ___bags (ii) sold ___bags

20. If 'Yes', why? 28

1. ..... It fetches a lot of money.

2. ..... It sells fast.

3. ..... It requires less troubles than other crops.

4. ..... Others (specify):.....

5. ..... No response.

21. If No, why? 29

1. ..... It does not fetch enough money.

2. ..... It does not sell fast enough.

3. ..... It involves more troubles than other crops.

4. ..... Others (specify):.....

5. ..... No response.

22. What are the popular soybean markets you know?

.....

.....

.....

23. Which of these markets is the most important soybean market to you?

    .....

24. Are you having transportation problems in your soybean trade? 30

    1. ..... High transportation costs.

    2. ..... Inadequate vehicles.

    3. ..... Bad roads.

    4. Others (specify):.....

       .....

    5. ..... No problems.

25. Do you often store soybeans before selling? 31

    1. Yes

    2. No

26. Where do you store it mostly? 32

    ..... at home.

    ..... in the market.

    ..... other places (specify):.....

27. If you pay stall rent, how much do you pay each month?

    _____ ₦

28. Does this include storage space? 33

    1. Yes 2. No

29. Does the stall have a lockable store room, or an open store space? 34

    1. ..... lockable room.

    2. ..... open store space.

30. What problems, if any, are you having with storing soybeans? 35

1. ..... Inadequate space.
2. ..... High storage cost.
3. ..... Storage loss.
4. ..... Others (specify):.....
5. ..... No problem.
6. ..... No response.

31. If you are having storage losses, what are the causes of the losses? 36

1. ..... insects.
2. ..... rot.
3. ..... rats.
4. ..... others (specify):.....
5. ..... No response.