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MARKETING PEANUTS IN THE KINSHASA AND BANDUNDU REGIONS OF ZAIRE

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GREENSBORO

1984

ABSTRACT

The purpose of this study is to assist the government in the identification of projects that will help improve the performances of the peanut marketing systems--and the delineate constraints in the marketing systems.

Primary data collected through an interview questionnaire constitute the major source of information. Farmers were interviewed about their production and marketing activities. Likewise, middlemen were interviewed to determine the types of services provided and to evaluate their charges. Finally, the retail operators were interviewed to analyze their retail prices and activities.

The study is based on a random sample of 67 farmers, 7 wholesalers, 24 market middlemen and 27 retailers.

The principal characteristic of the peanut marketing system in Kwilu and Kinshasa is that there are generally three intermediaries between the producer and the final consumer: wholesalers, market middlemen and retailers. The major constraints in peanut production and marketing are:

- 1) Lack of improved seed
- 2) Impoverishment of the land
- 3) Disrespect for ancestral beliefs
- 4) Sickness
- 5) Lack of agricultural equipment
- 6) Lack of good relationship among peasants and among villagers
- 7) Lack of extension services

PN-AAR-805

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A thesis submitted to the Graduate Faculty of the North Carolina Agricultural and Technical State University in partial fulfillment of the requirements for the degree of Master of Science in Agricultural Economics.

Greensboro
1983

Approved by:

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Dean of the Graduate School

ACKNOWLEDGMENTS

This study of "Peanut Marketing in the Kinshasa and Bundundu Regions of Zaire" is a more extensive analysis than would have been possible without such assistance from many people.

I express my sincere gratitude to Dr. Hari Marhatta, Chairman of my supervisory committee, who helped me to develop my research skills. Dr. Marhatta displayed a considerable amount of patience and understanding in addition to providing invaluable guidance and advice from beginning of this study.

Special appreciation is extended to Dr. Jack Thompson for extensive assistance given during the phase of the work conducted in Zaire to the completion of the study.

I would have my father who returned his soul to God during my stay abroad accept in this work my profound apologies.

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CHAPTER I

INTRODUCTION

STATEMENT OF THE PROBLEM

Peanut production in Zaire grew at an annual rate of 2.4%, but during that period, the population of Kinshasa increased at the rate of 8.1 percent annually. In Bandundu, the study area, the agricultural production increased at the rate of only 2.1 percent; not nearly enough to keep up with the population growth in its principal market, Kinshasa, when you note that peanut yield increased at a rate of only 0.5 percent (Appendix Tables A and B).

Although actual retail prices of peanuts in Kinshasa increased sharply from 1978 to 1982, these prices, when deflated, were actually on a downward trend (Appendix Table C). This in itself was a boom to consumers; however, during that period, there is considerable evidence that consumer purchasing power was declining (Appendix Table D). Furthermore, Mukuna (1982: p. 11) reported that among city families, there was a high rate of unemployment. His thesis reported an average family size of nine persons of whom five were classed as adults.¹ Of those five, only one was employed. If we assume that the wife is employed with housework and with

¹These were not necessarily the children of a husband and wife. These family members included others who came in from the village--perhaps relatives, but not necessarily children.

small children, his survey data shows only one of the four available adults was employed. This exceptionally high rate of unemployment was due to current economic conditions and to the great exodus from the country to the city. In any event, the purchasing power of the city population is not high. Since peanuts are the lowest price, widely acceptable, source of protein (Mukuna, 1982: p. 32), there is a great need to increase the efficiency of peanut marketing so as to lower the price to Kinshasa's low-income consumers. This needs to be done without lowering the price to farmers, since farmers need an adequate incentive to produce.

The national planning goals, which include improving the wellbeing of both the city population and the rural population, have generated considerable interest in the distribution of peanut income among farmers and among the different marketing agents. An analysis of marketing margins is needed to determine the extent of excessive exploitation, if any, by one or all of the middlemen. Since there are substantial gaps in our knowledge about the present Kwilu and Kinshasa marketing systems and margins, policymakers cannot decide on the actual and future course of peanut distribution and pricing on a rational basis.

The peanut shortages in Kinshasa can be attributed to: (1) the productivity per capita which did not increase in Kinshasa's adjacent farm areas enough to compensate for the loss of the rural labor force by immigration, (2) the increase in the population in Kinshasa, and (3) the marketing system which did not adjust to meet increasing needs for larger quantities on time and at places that need it most (Ongala, 1978).

OBJECTIVES

Historically, the marketing of food crops has presented a problem to the Republic of Zaire. About ten years ago, the government established some marketing boards (ONACER in 1973 and ONPV in 1978)² to offset this food marketing problem. However, this did not solve the problem. Those boards handled only a small amount of total production that was sold-- around four percent annually. That did not justify the government investment in these boards. The failure of these institutions in 1977 and 1981 respectively for ONACER and ONPV was due to the lack of farmer acceptance, misunderstanding of their functions, low prices at the farmgate, bad management, and a host of other marketing problems. In an attempt to answer some of the questions raised about the marketing problems in Zaire, this study provides an understanding of the extent to which the existing peanut marketing system in the Bandundu and Kinshasa Regions satisfies consumers' needs at satisfactory prices and provides farmers with an acceptable production incentive.

The purpose of this study is to assist the government towards the identification of projects that will help improve the performances of the peanut marketing systems--and to delineate constraints in the marketing systems. Specific aims of this study are as follows:

1. To determine the economic role of peanut production in the Bandundu Region.
2. To describe and analyze the marketing channels and activities in peanuts for the Bandundu and Kinshasa Regions.

²ONACER is the Office National des Cereales. ONPV is the Office National des Produits Vivriers.

3. To evaluate the roles of marketing middlemen, and
4. To compare marketing margins with specific marketing services provided in order to determine whether the services justify the costs.

PROCEDURES

Primary data were collected through a short interview questionnaire which constituted the major source of information. Farmers in the Kiwilu sub-region were interviewed about their production and marketing activities. Likewise, middlemen were interviewed in order to determine the types of services provided and to evaluate their charges. Finally, the retail operators in Kinshasa were interviewed to determine their retail prices and activities. A random sample of farmers was selected from seven agricultural regions or zones of the largest peanut producing region. The Kwilu sub-region produced 83.6 percent of the peanuts produced in the Bandundu Region in 1980 (Appendix Table H). Each of the samples was chosen based upon the politico-administrative division of the country called Zone. As a matter of fact, the republic of Zaire is divided into nine regions. Each region is divided into small divisions called, respectively, sub-region, zone, collectivity and locality. A total of 13 farmers were selected from each zone using the report of the Agricultural Census of 1976 as follows:

<u>Zone</u>	<u>Population</u>	<u>Number in Sample</u>	<u>Number Surveyed</u>
Bagata	26,616	13	9
Bulungu	62,732	13	10
Idiefa	95,314	13	12

<u>Zone</u>	<u>Population</u>	<u>Number in Sample</u>	<u>Number Surveyed</u>
Gungu	34,338	13	8
Masimanimba	79,979	13	10
Ville Bandundu	4,092	13	10
Ville Kikwit	<u>3,123</u>	<u>13</u>	<u>8</u>
Total	306,194	91	67

Then, attempts were made to survey each of them by using a personal interview questionnaire. The survey was conducted during a three-week period from December 18, 1981 until January 1982 and in April 1982. One to two visits to each farmers were made to gain the confidence of the farmer in order to obtain better results. There was some difficulty in locating the farmers. Many markets are permanent only on a space or location basis--not over time. Thus, it became necessary to choose one market in each zone on a random basis. The transportation is not organized on a regular basis, which made data collection a time consuming task, since you have to spend more days in one place and less in another. This and money are two of the main constraints which have been taken into consideration in delimiting the area of this study. The representatives of the Agriculture Department called "Monagris" were helpful in locating the farmers during the survey. Farmers surveyed were usually cooperative and answered the questions, after the purpose and objectives of the study were explained. A random sample of retailers was selected from four big markets in Kinshasa. Each of the four markets was chosen based upon the space occupied and the number of participants. These markets are representative of many small markets located in the city. A total of eight retailers were selected from each market by a random sample. A number was assigned to each retailer and was recorded. The survey of these retailers was conducted

in January and February of 1982 and a final phase in August of 1982. The sample of retailers in the Kinshasa markets was as follows:

<u>Name of Market</u>	<u>Retailers on Market</u>	<u>Number in Sample</u>	<u>Number Surveyed</u>
Marché Central	232	8	8
Gambela	403	8	8
Simba-Zikida	94	8	5
Matete	<u>395</u>	<u>8</u>	<u>6</u>
Total	1,124	32	27

Of the retailers surveyed, all (100 percent) were women, and all were very cooperative and answered all the questions--after the purpose and objectives were explained. After two visits without bringing any notebook or pencil, and wearing clothing to suit the task, all the retailers seemed comfortable in speaking about their enterprises. In some cases, they presented gifts to the interviewer. Based on information obtained from the retailers and the farmers, 24 market middlemen and seven wholesalers were selected on a random basis. The 24 market middlemen were sampled as follows:

<u>Market</u>	<u>Total in Market</u>	<u>Number in Sample</u>	<u>Number Surveyed</u>
Marché Central	0	0	0
Gambela	76	8	8
Matete	36	8	8
Simba-Zikida	<u>8</u>	<u>8</u>	<u>8</u>
Total	120	24	24

Once the farm and retail prices were identified, the marketing margins could be calculated. The formula to be used to compute gross marketing

margins between the farmer and retailer is as follows:

$$\text{G.M.M} = \frac{\text{Pr} - \text{Pf}}{\text{Pr}} \times 100$$

Where:

G.M.M. = Gross Marketing Margin

Pr = Price at retail level

Pf = Price at farm gate level.

These gross marketing margins will be computed also at wholesale, market middleman and retailer level. One possible reason for higher marketing margins could be the increase in transportation costs. Five of seven wholesalers or 71.4 percent surveyed reported that the increase in the price of fuel and the bad practices of some security agents located along the main roads contributed to the increases in transportation cost. The transportation remains a big problem at the farm gate level also. On the average, the farms are a distance of five kilometers from the village. The farmers fear to sow near the village because hogs and goats will eat all the field of peanuts. The farm, wholesale and retail prices and gross marketing margins will be computed based on the period of the study from January to August 1982.

Farm Gate Level

Gross farm revenue = Total quantity sold (Ts) X Price received (Pr)

Total quantity sold = Total production (Tp) minus Loss and waste (L)

less Own consumption (C)

less Planting seed (Ps)

less Quantity given free to others (Tf)

plus Storage (S)

$$T_s = T_p - L - C - P_s - T_f + S$$

Price received by farmers = Average price per kilogram received by
all 67 of the farmers surveyed.

Costs for the farmer include the value of seeds, the cost of family labor, exchange labor and hired labor in planting and harvesting, the cost of grading, transportation, packaging, depreciation of tools and perhaps others. However, the survey revealed that no one was working on farms for salary. In every zone surveyed, the respondents were helped only by their family members. The number of dependents in each family varied from one to 17 with an average of 5.8. Including husband and wife, family size averaged 7.7. The number of young peers (under 13 years old) was 3.4. Of the 5.8 dependents, 2.4 were above 13 years of age and would be counted in the labor force. These, along with the farmer and his wife, make up the labor force of 4.3 persons. Of the dependents who are above 13 years, only one out of seven was male. The males above 13 years are largely included in the exodus from country to city. Mukuna's survey of the Kinshasa population reported an average of five adults per family of nine--of which only one was employed.

The Bureau d'Etudes and Planification's Situation Actuelle de l'Agriculture Zairoise (1982, pp. 47-56) estimated in 1970 the average number of dependents in each family by 6.3 and the proportion under 15 years was 42.2 percent, or about 2.7 young and 3.6 adults.

SCOPE AND LIMITATIONS

This study was limited to the production area of Kwilu Sub-Region, Bandundu Region and to the markets in the city of Kinshasa. However, Bandundu is the largest peanut producing region of Zaire and the Kwilu

Sub-Region produces 83.6 percent of the peanuts of the Bandundu Region. Kinshasa is by far the largest urban market in the country.

Although satisfactory retail prices are published for Kinshasa, prices of the farm gate and intermediate levels were not available except from the survey done in this study. Published time series data on peanuts, as well as other crops, are often rather widely different from what should be the same series: production, yield and acreage, for example.

REVIEW OF RELATED LITERATURE

In light of the objectives of this study, it seemed appropriate to review the existing literature on the role of marketing in the development process of the LDC's. As defined by the National Association of Marketing Teachers, marketing consists of those activities involved in the flow of goods and services from the production point to the consumption point (Agnew, 1936). That definition is appropriate for this study, since the study is concerned with the movement of peanuts from the Bandundu production region to the Kinshasa urban market area.

Economic development should be viewed as a long-term process that occurs over decades and generations. Through technological innovation and economic organization, output per person increases and the material well-being of the population is raised to higher levels. Increased specialization of productive effort, industrialization and urbanization are important elements in the growth and development process. These forces contribute to a growing demand for marketing services. In agriculture, there is a transformation process on a relatively small scale. Predominantly self-sufficient family farming units become larger, more specialized

and increasingly dependent on marketing arrangements for the sale of their agricultural products and for purchased inputs. Rural markets emerge as local trading centers hierarchically interconnected within a larger regional and national market network.

There is a wide range of viewpoints on the role of agricultural marketing institutions in economic development and the appropriate function of the public sector in bringing about desired changes. There are those who hold the view that marketing is an adaptive set of activities to be given secondary consideration in development planning strategies with primary consideration being directed toward the expansion of agricultural and industrial production. This view has been challenged by marketing economists who argue that marketing is a critical and dynamic component of development. Abbot (1963) and others in the FAO marketing group have stressed the incentive role of effective product marketing systems which can reduce risks and lower costs for farmers. Efficient marketing reduces marketing costs--which leaves more of the retail price for the farmer.

The local availability of reasonably priced agricultural inputs and consumer goods are also seen as having a stimulating impact on economic activity in both rural and urban areas. Collins and Holton (1964) have also challenged the view that marketing firms and institutions will automatically spring up in response to price incentives to provide the services most appropriate for new production situations. They argue that effective planning for economic development should give a great deal of attention to facilitating the development of marketing institutions to complement programs for expanding physical production.

Descriptive studies have been conducted by individuals from various

social science disciplines on existing arrangements for marketing specific commodities or carrying out selected marketing functions. Most of these studies have been carried out by professionals in academic institutions. Geographers (Ghosh and McNally, 1978 and Smith, 1978), with their interest in the location of economic activities, have undertaken a large number of descriptive studies of market places, periodic markets and itinerant traders in rural areas of developing countries. This research is important for the development process because it provides knowledge of how these traditional trading institutions function. Unfortunately, by geographers' own assessments, much of this research suffers from the inability to offer normative solutions to questions concerning policy and planning of marketing systems.

Broader diagnostic assessments of food system organization in developing countries have provided inputs to policy and program development and to an evolving conceptual and analytical framework for future research and development efforts. Several groups of U.S. university researchers have carried out those broader based studies of agricultural marketing processes in less developed countries. Uma Lele (1968) could find little evidence in her field studies to support the view that the monopolistic nature of private trade leads to excessively high marketing margins or that wide seasonal price variations were caused by speculative hoarding and profiteering practices of traders. Price differentials among major wholesale centers were found to be closely related to expected price patterns based upon transportation cost differences. Indications are that entry into traditional trade is generally open and that there is overcrowding and significant competition at each level of marketing. Even

in instances where a few traders are handling a large share of the market volume, it was observed that they are unable to influence prices appreciably through collusive action as long as there is effective market intelligence and transportation among markets.

Jones and his colleagues at Stanford University have conducted extensive studies of agricultural marketing in several African countries (Uma Lele, 1976). The characteristics of existing marketing systems were compared with the requirements of a purely competitive model and actual pricing relationships were checked against what would be expected in a perfect market. Their conclusions were that, "average" seasonal price movements correspond rather well with the cost of storage, that inter-market price correlations were somewhat less than might be hoped for, that year-to-year price movements were generally in accord with supply and marketing conditions, but that week-to-week price changes showed signs of serious random disturbances consistent with the hypothesis that traders were poorly informed about episodic changes in the conditions of supply and transport.

A major problem with the research framework developed in most of these diagnostic assessments is the lack of concern for the dynamic impacts which marketing services can have both on production and consumption. The static focus of the research has been on whether prices and cost relationships over space and time behave as predicted by the perfectly competitive model.

In conclusion, the nature of marketing problems varies widely with the degree to which a particular economy has been transformed from an agriculturally based rural economy toward a more urban based market oriented

economy. In countries which are still predominantly rural, marketing problems center around improvements in the functioning of local markets as providers of simple farm inputs, and household necessities and as trading centers for basic food commodities produced and consumed within the local area or region. As an economy becomes more urbanized, food production and marketing takes on a higher priority in development plans with greater attention to improving physical infrastructure (transportation, processing and storage) and to policies and programs designed to stimulate production and facilitate system coordination. As the industrialization process continues, new technologies for processing and marketing, more complex logistical and institutional arrangements usually occur.

An important aspect of studying the marketing of peanuts is the adequacy of peanut prices--both in terms of covering costs and in sustaining peanut production in the face of competition from alternative enterprises open to the farmer. This led to the need to do some investigation into peanut production.

Since 1974, the National Manioc Program (PRONAM) has been conducting studies primarily on manioc. However, one set of experiments dealt with the practice of intercropping peanuts with manioc. The results of their first experiments showed some loss of yield in manioc; however, researchers concluded the farmer would have considerably more revenue from manioc intercropped with peanuts than from manioc alone (PRONAM Annual Report, 1980, pp. 20-22).

In 1958, INERA (then called INEAC) published the Normes de Main d'Oeuvre pour les Travaux Agricoles au Congo Belge. This study analyzed the labor requirements for agricultural work on the farm in general and for peanuts

in particular. These data proved helpful in budgeting the costs of producing peanuts and competing enterprises.

In a study of rice production in Equateur Province of Zaire, Afifi (1982, pp. 49-52) developed a useful farm budget format. He also found by budgetary analysis that farms in a relatively simple extension project had considerably higher net returns per man-day than farmers who were not in the project. This suggests the value of even a simple extension program. In this study, farm budgets were found useful in comparing costs and returns from peanuts in comparison with corn, which is the main competing enterprise to peanuts in the Kwilu area.

Wells (1954) pointed out the complexity of the marketing process involved in moving goods and services from the producer to the consumer. Marketing must function efficiently in order to provide satisfactory returns to all participants--and must be dynamic in order to adjust to changes. Wells' book is organized completely along the functional concept of marketing agricultural products. This concept proved useful in providing a framework by which to analyze peanut marketing in Kwilu and Kinshasa. Kohe (1972) dealt with the functions of selling, buying and pricing in detail--functions involved in the transfer of goods from one market participant to another. These additional concepts of the marketing functions were helpful in the present study.

Ofori (1973) pointed out that transportation, as well as other marketing services, could constitute bottlenecks in the marketing of a product--if they are not performed efficiently.

CHAPTER II

BANDUNDU AND ITS ECONOMY

GENERAL BACKGROUND

Bandundu Region of Zaire Republic is limited on the North by the Region of Equateur, on the East by the Region of Kasai Occidental, on the South by the Popular Republic of Angola, and on the West by the Region of Kinshasa and the Popular Republic of Congo. The region of Bandundu is divided into three sub-regions: Kwilu, Kwango, and Maindombe (Figure 2.1). Each sub-region is divided into small politico-administrative divisions called zones and collectivities. Kwilu Sub-Region has seven zones, of which two are urban and 51 collectivities.

Keeping in mind the constraints of time and money, this study focused only on the level of zones. These zones are also representatives of the collectivities and localities they include. Each zone has several market places. Table 2.1 gives some of the most important market places according to location, volume of produce handled and number of market participants. The sub-region of Kwilu contains seven cities of ten thousand or more people: Bagata, Bandundu, Bulungu, Idiofa, Kikwit, Gungu, and Masi-Manimba. Each of those cities represents the capital site of its zone and the highest number of market participants.

An adequate transportation network is an essential infrastructural component in the expansion of the marketing of food crops in general and

Figure 2.1 MAP OF THE REGION OF BANDUNDU

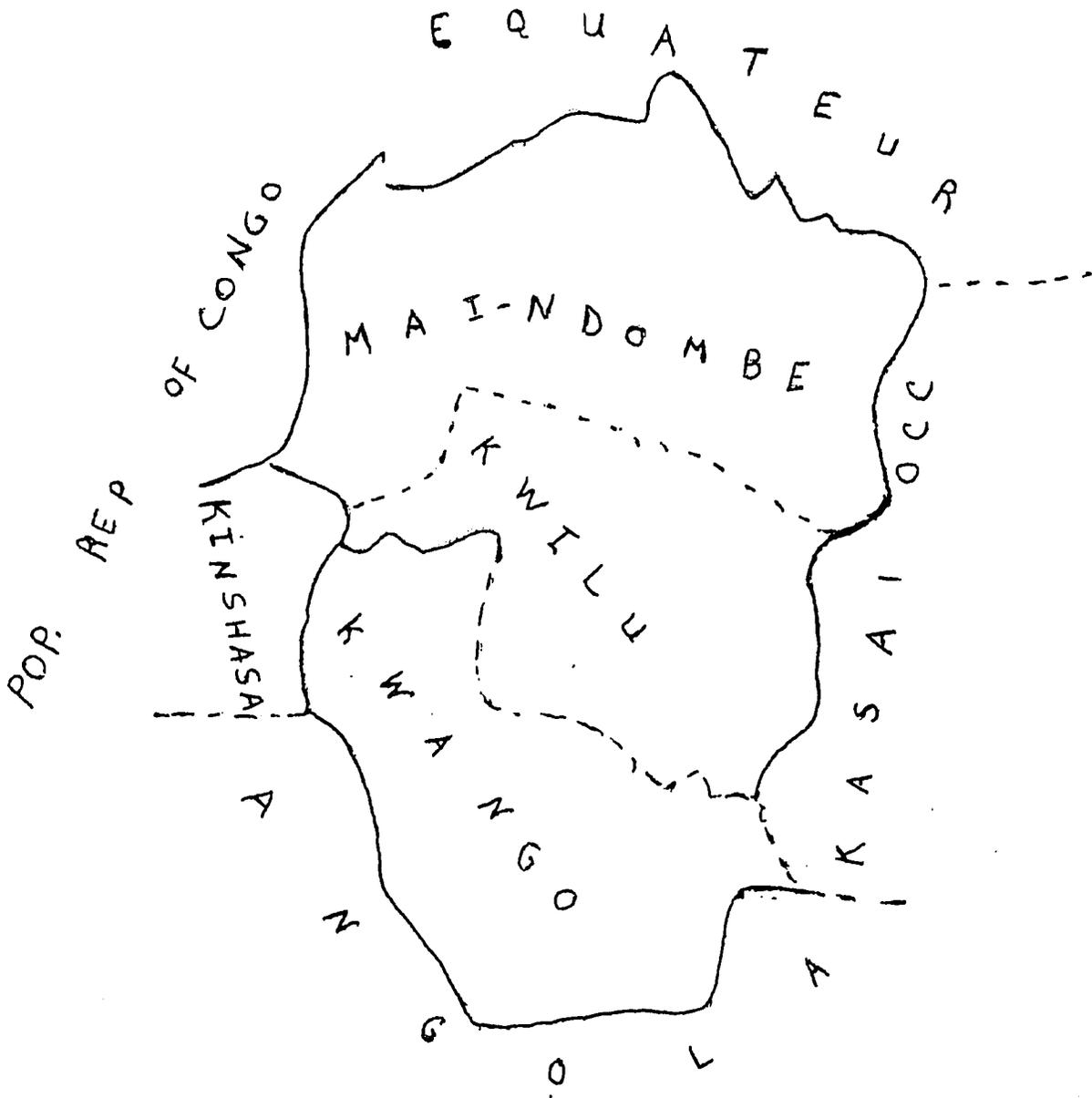


Table 2.1

Zones	Markets	Wholesalers
Bagata	Marché de Fatundu	ETS Elite
Bandundu	Marché Central de Bandundu	ETS Lobuka
Bulungu	Marché de Bulungu	ETS Maitre Jamar
Gungu	Marché de Gungu	ETS Safari
Idiofa	Marché d'Idiofa	ETS Dombro
Kikwit	Marché Central de Kikwit	Nuilerie Kazamba
Masi-Manimba	Marché Masi-Manimba	ETS Nsimba

of peanuts in particular between Kwilu and Kinshasa. Since the prevailing peanut transportation network is roads, the study of transportation cost will be based on this aspect. All of the respondent wholesalers used the asphalt road to bring their peanuts to Kinshasa. The supply areas are linked to that road of general interest by some other roads of local interest. A network of secondary interest is provided by the rivers. There are three main rivers: the Kasai, the Kwango and the Kwilu (Figure 2.2).

Kwilu can be divided into two agri-economic zones based upon the natural vegetation. The southern part is in Savanna, but as you go North, there is an increasing level of vegetation merging into tropical forest as one moves from the South to the North. The forest occupies less than half of the total area. The soil is the sandy-clay type. The temperature varies from a minimum of about 15 degrees Celsius to a maximum of 31 degrees Celsius. Kwilu has rainfall between 1,200 mm and 2,000 mm. Because of the above climate considerations, peanut cropping fits very well in Kwilu. Kwilu has two peanut cropping seasons. Season one goes from September to January and season two from February to June of each year. The official marketing season takes place, in general, two to three months after the harvesting time. This relatively long period involves some illegal activities in the movement of peanuts toward Kinshasa, and therefore, there were some difficulties in getting production data and the market price differentiation due to the practice of black market. In fact, it is during that period that the monagris³ collect the data

³A shortened version of moniteurs agricoles who are agricultural extension agents.

Table 2.2

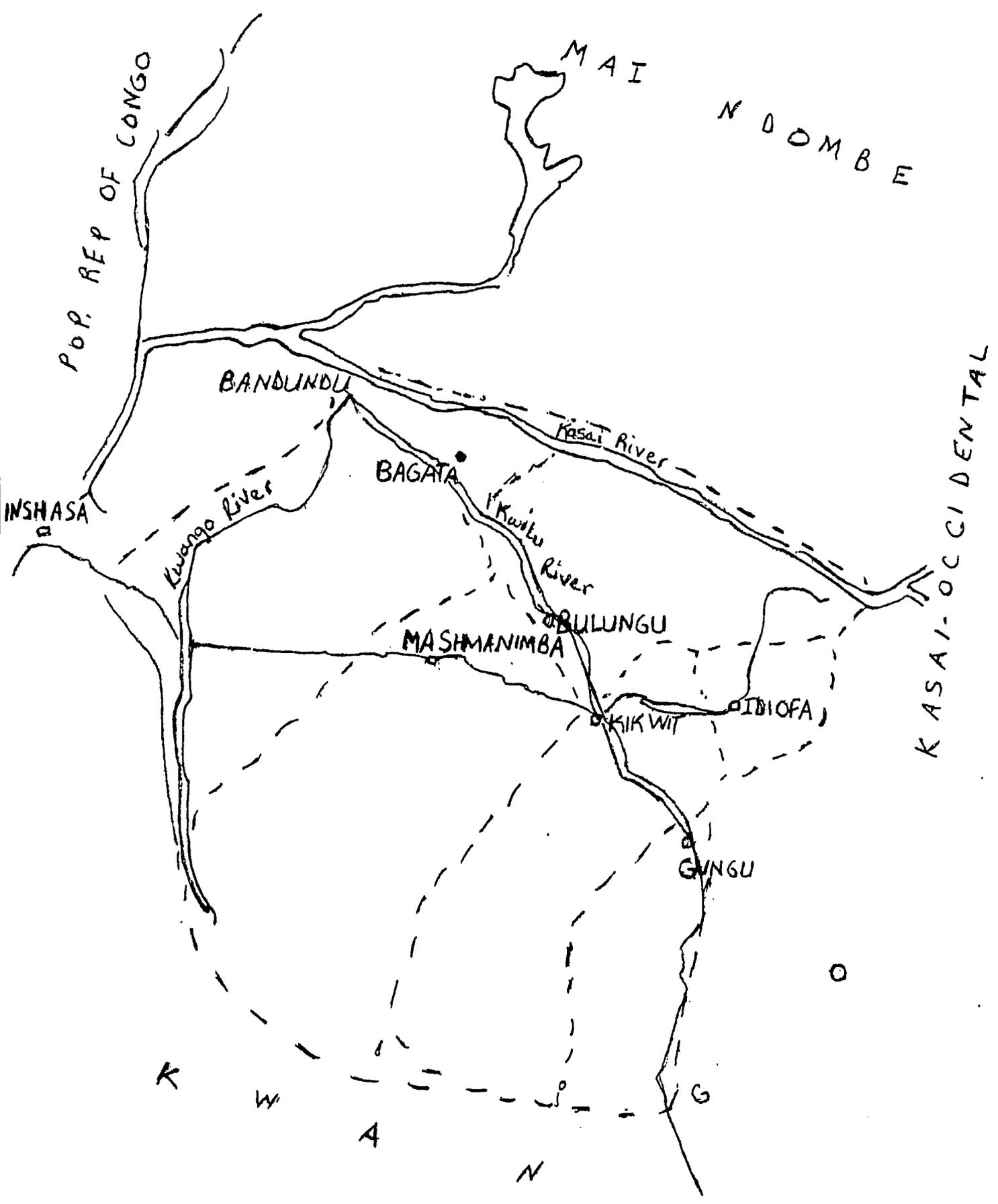
DISTANCE OF KWILU MARKETS FROM KINSHASA, ZAIRE, 1982

Market	Distance from Kinshasa by Road ^a
	kilometers
Marché de Fatundu (Bagate)	497
Marché de Bandundu	417
Marché de Bulungu	594
Marché de Gungu	629
Marché d'Idiofa	619
Marché de Masi-Manimba	634
Marché de Kikwit	531

^aOne mile is equal to 1.6 kilometers.

SOURCE: Institut Geographique du Zaire.

Figure 2.2 MAP OF THE KWILU SOUS-REGION



concerning the production of the current season and it is also the time they make sure that each farmer has laid away two to three compulsory bags of peanuts in the shell to serve as seed for the next planting season. During the official marketing campaign in April 1982, one bag of peanuts cost 100 Zaires, while the same amount brought 80 Zaires in February 1982.

POPULATION

Bandundu Region had a total population of about 3,980,720 people in 1989 (Saint Moulin, p. 9). Its people were predominantly Zairian (99.6 percent in 1970) with some foreigners, mostly Angolans, Belgians, Portuguese and Americans. About 64 percent of the Zairian population was less than eighteen years old. But in Zaire in general, the labor force should be counted from thirteen instead of eighteen. As a matter of fact, it is at that age that young men and women start to work actively with their families on their farms. Women are more active in peanut production operations than men. This was confirmed by the fact that in most of our interviews, men had to send the questions to women--who answered with spontaneity in most cases.

The Zairian population is estimated to have an annual increase of 2.6 percent. About 30 percent of the population in 1975 was living in urban areas and this has resulted in unemployment problems for the city and a loss of farming population in rural areas. Kikwit and Bandundu are the two largest urban areas of the Kwilu Sub-Region. Bandundu's population trends are shown in Table 2.3.

Joseph Boute and Leon de Saint Moulin (1978) have predicted that

Table 2.3

POPULATION OF BANDUNDU REGION, ZAIRE, 1970 and 1980

Year	Total Population	Agricultural Population	Proportion in Agriculture
	.....persons.....		percent
1970	2,600,156	2,143,539	82.4
1980	3,486,423	2,639,569	75.7

SOURCE: Division d'Etudes et de Programmation, Bureau de Planification, Situation Actuelle de l'Agriculture Zairoise, USAID Project 660-070, Kinshasa, Zaire, 1982.

by 1985, the rural population of Zaire will have dropped to 60 percent of total population. The Kwilu Sub-Region presents some good potential for the development of the peanut industry because of its low population density (in 1981, there were approximately 30 persons per square mile), and its high yield of .83 metric tons per hectare compared to .60 for Zaire as a whole. Its large area of cultivable land which, if coupled with the introduction of new technology, will provide an opportunity for an enormous expansion of production.

ECONOMIC ACTIVITIES AND INDUSTRIAL DEVELOPMENT

The Bandundu economy is characterized in part by colonial plantation economy where agriculture is the major activity, producing food crops for consumption and export. The principal export crops are timber, coffee, palm oil, and peanuts. Bandundu depends largely on its agriculture because it does not have any of the basic natural resources for industry. Only a small proportion of people, about 18.6 percent in 1982, were employed either in the service sector or the manufacturing of wood, coffee or palm tree products.

Peanuts are predominantly produced in the sub-region of Kwilu, which produces about 84 percent of the total peanuts of the Bandundu Region. This explains why the choice was made to focus on this sub-region as the target for the study of the peanut industry of the Bandundu Region.

CHAPTER III

PEANUT PRODUCTION

HISTORICAL BACKGROUND OF PEANUTS

The peanut plant probably originated in Brazil, although no fossil records exist to prove this (The National Peanut Council, 1980). But, for as long as people have been making pottery in South America (3,500 years or so), they have been making jars shaped like peanuts and decorated with peanuts. Graves of ancient Incas found along the dry western coast of South America often contain jars filled with peanuts and left with the dead to provide food in the afterlife (The National Peanut Council, 1980).

Peanuts were grown as far North as Mexico by the time the Spanish began their exploration of the New World. The explorers took peanuts back to Spain, where they are still grown. From Spain, traders and explorers took peanuts to Africa and Asia. In Africa, the plant became common in the Western tropical region. The peanut was regarded by many Africans as one of several plants possessing a soul. During that period, peanuts were abundantly grown in Congo (actually Zaire). When Africans were brought to North America as slaves, they planted peanuts throughout the Southern United States where peanuts were called "goobers" (The National Peanut Council, 1980). This word "goober" comes from the Congo name in Lingala dialect for peanut: "nguba." However, until the colonization, peanuts were not grown extensively, partly because they were not regarded

as a main food crop--they were used only for dessert. The colonization increased commercial production of peanuts as an export crop. While peanut production rose during this time, peanuts were planted, cultivated and harvested by hand which left stems and trash in with the peanuts (Marcel Van Den Abeele and Rene Vandenput, 1956). Thus, a poor quality and lack of uniformity called for additional work in preparing them for market. The peanuts were introduced on a large scale in Kwilu Sub-Region around 1935 by Madail as a support crop for its plantations of palm trees. However, after 1953, peanut production decreased rapidly so that by 1978, the country became a net importer. The peanut, *Arachis hypogaea*, has been grown in Kwilu since colonial days, but farmers did not use peanuts extensively as a cash crop until about 1900 (Marcel Van Den Abeele and Rene Vandenput, 1956). Since that time, peanuts have occupied a place of permanent importance in the Kwilu economy.

The policy objectives and programs of Zaire's agricultural sector are discussed in the Politique Agricole Zairoise. This discussion includes statements concerning objectives, programs, production, prices and marketing of agricultural products which appear to represent the policy position of the government of Zaire with regard to these matters. Based on statements in this document, no specific government programs have been implemented to support the peanut growing policy since 1960. The increase in peanut production appears to be almost completely due to the increase in area harvested. Shelled peanuts have increased from 168,000 metric tons in 1970 to 185,000 metric tons in 1975 (Politique Agricole Zairoise, 1976). For a number of years until 1969, a substantial part of peanuts (oil and peanut cake) was exported which generated for the government a

considerable amount of foreign currency. However, because of a general decrease in agricultural production due to the general decline in economic activity, peanuts were no longer exported beginning in 1970.

THE PEANUT PLANT

The peanut is an unusual plant because it flowers above the ground, but fruits below the ground. Typical misconceptions of how peanuts grow place them on trees (like walnuts) or growing as a part of a root--like potatoes. Although many consider the peanut a member of the nut family, it actually belongs in the legume family. Along with peas and beans, the peanut plant bears seeds in shells. These develop underground rather than on trees--like members of the nut family. Peanut seeds grow into a small green bush about 18 inches tall which develops delicate yellow flowers. The flowers fertilize themselves and lose their petals as the ovary begins to enlarge. The budding ovary or "peg" grows away from the plant, or vine, and drops down to the soil. The peanut embryo is in the tip of the peg, which penetrates the soil. The embryo turns horizontal to the soil surface and begins to mature into a peanut. From planting to harvesting takes four to five months, depending on the variety. In the Kwilu Sub-Region, there are two growing seasons yearly. The main planting season begins in September with harvesting in December, and the minor in January with harvesting in June. The peanut is a nitrogen-fixing plant; its roots form nodules of nitrogen which enrich the soil. In Kwilu, farmers plant peanuts at the head of the rotation with sesame, manioc and cucumbers. Peanuts are typically intercropped with manioc and other crops.

Types of Peanuts

Although peanuts come in many varieties, three types of peanuts are most commonly grown: Virginias and Runners, which have red skins, and Spanish with skins that are more of a tan color. These varieties usually contain two kernels in each shell. Virginia peanut kernels are the largest and are used for cocktail peanuts and salted peanuts when shelled, or they are roasted to be sold as in-shell peanuts. The medium-size runner and small Spanish peanuts are most often used in making peanut candy, peanut butter and peanut oil. These two varieties of peanuts are the most commonly grown in Kwilu. Forms in which peanuts are utilized in Kwilu and Kinshasa are described in Chapter VI.

Ecology of Peanuts

Peanuts are grown in the warm climates of Asia, Africa, Australia, and North and South America. India and China together account for more than half of the world's production. The major peanut growing countries include India, China, Senegal, Sudan, Brazil, Argentina, South Africa, Malawi, and Nigeria.

Zaire had about 14.7 percent (270,000 hectares) of the world's acreage of peanuts in 1975 and produced 13.9 percent (250,000 metric tons) of the world's production (17,914,000 metric tons) (FAO, 1976). Peanuts can be grown everywhere in Zaire. However, Bandundu Region grows 22.7 percent (1976-80) of Zaire's peanut crop, followed by Haut-Zaire, Shaba, Bas-Zaire and others. About 84 percent (1977-80) of all Bandundu peanuts are grown in the Kwilu Sub-Region which presents excellent conditions for peanuts. The seeds do best in sandy soil, especially soil rich in calcium. If the soil temperature is warm (65-70 degrees Fahrenheit) and

the seeds are given enough water and air, they will sprout. In about two weeks, the first square of four leaflets will unfold above the peanut field.

CHARACTERISTICS OF SAMPLE FARMERS

The 67 farmers in the survey were assumed to be representative of all farmers in the Kwilu Sub-Region, as well as in the Bandundu Region as a whole. Table 3.1 summarizes some of the selected economic characteristics of the farmers. The age for farmers varied from a low of 20 to a high of 72 years old; 62.7 percent of the farmers were in the lower age groups 46 to 73, with only two farmers 60 years of age or over. The number of years spent in farming varied widely, from seven to 59. The mean years in farming for the sub-region were rather high--27.1 years. The sex distribution of farmers interviewed showed that 88 percent of all farmers were male. All males had one wife except two farmers who had two wives each. Polygamy is declining, especially in younger households. The number of dependents varied widely from one to 17, with an average of 5.8, giving a total of 7.7 persons per family counting the farmer and his wife (Table 3.1).

Only six of the farmers surveyed attended secondary school, 39 primary school, and 22 did not know how to read or write. Almost all farmers in Bulungu and Idiofa had attended school. The highest number of illiterates was noticed in Masi-Manimba and Bagata, with respectively 61.5 and 54.0 percent (Table 3.2).

The cropping patterns follow two paths: the commercial farms which are concentrated largely on export crops (lumber, coffee, palm oil, etc.)

Table 3.1

SELECTED CHARACTERISTICS OF FARMERS, KWILU SUB-REGION, BANDUNDU
REGION, ZAIRE, 1982

Characteristic	Lower Limit	Upper Limit	Mean
Age in years	20	72	39.4
Years in farming	7	59	27.1
Number of dependents	1	17	5.8
Total number in family	--	--	7.7

Table 3.2

LEVEL OF EDUCATION, KWILU FARMERS, BANDUNDU REGION, ZAIRE, 1982

Highest Level Attended	Number	Percent
None	22	12.8
Primary	39	58.2
Secondary	6	9.0
More	<u>0</u>	<u>0.0</u>
Total	67	100.0

Table 3.3

AGE DISTRIBUTION OF FARMERS, KWILU SUB-REGION, BANDUNDU
REGION, ZAIRE, 1982

Age Class	Frequency	Proportion in Age Class	Average Age for Age Class
Years	Number	Percent	Years
18-31	22	32.8	26.2
32-45	20	29.9	38.3
46-59	23	34.3	50.5
60-73	<u>2</u>	<u>3.0</u>	
Total	67	100.0	
Average age of all farmers ^a			59.4

^aSimple average of all 67 respondents.

Table 3.4

YEARS IN FARMING FOR FARMERS, KWILU SUB-REGION, BANDUNDU
 RETION, ZAIRE, 1982

Years in Farming Class	Frequency	Proportion in Class	Average Years in Farmins
Years	Number	Percent	Years
6-20	22	32.8	14.4
21-35	31	46.3	27.5
36-50	12	17.9	44.9
51-65	<u>2</u>	<u>3.0</u>	56.0
Total	67	100.0	
Average years in farming ^a			27.1

^aSimple average of all 67 respondents.

Table 3.5

NUMBER OF DEPENDENTS OF FARMERS, KWILU SUB-REGION, BANDUNDU
REGION, ZAIRE, 1982

Number of Dependents Class	Frequency	Proportion in Class	Average Number of Dependents
Persons	Number	Percent	Persons
2-5	33	49.2	3.3
6-10	31	46.3	7.7
11-15	2	3.0	12.5
16-20	<u>1</u>	<u>1.5</u>	17.0
Total	67	100.0	
Average number of dependents ^a			5.8
Average number of farmers and wives			1.9
Average number in family			7.7

^aSimple average of all 67 respondents.

and the subsistence farms which produce manioc, maize, rice, peanuts, sweet potatoes, bananas, yams etc. Both men and women cultivate the land. They cultivate their farm based on the shifting cultivation system. Since they do not use either chemical fertilizers or cover crops, relatively long periods of fallow are necessary.

THE BANDUNDU AGRICULTURAL SECTOR

Bandundu has an agriculturally based economy with its agricultural population making up 75.7 percent of the total population in 1980 (Situation Actuelle de l'Agriculture Zairoise, 1982). About 96 percent of the work force is engaged in agriculture. The vast majority of the farm operators have small holdings. In 1981-82, the economic size of farms in Kwilu varied from .25 hectares to 2.0 hectares (Table 3.6). The relatively high percentage (55.2) of the farms whose areas varied between 0 and .50 hectares is explained by the fact that, although it is compulsory for each farmer to grow at least .50 hectares of some specified food crop such as manioc, peanuts etc., it happens that for some reasons (sickness, age, etc.) some people grow less, while other people sow more than is required by official regulations.

Most of the farmers utilize hand labor for nearly all crop producing activities. The survey revealed that none of the farmers used fertilizer, insecticides, pesticides, compost, improved seed or any other machinery than hand tools. The land preparation, planting, weeding, and harvesting were done by hand.

Many variables may influence peanut production in Kwilu: size of farm, soil, variations in management skills, inputs and output, prices,

Table 3.6

DISTRIBUTION OF FARMS BY SIZE IN KWILU SUB-REGION, BANDUNDU
REGION, ZAIRE, 1981

Farm Size Classes ^a	Frequency	Proportion	Average Size of Farm
hectares	number	percent	hectares
00 --- .25	11	16.4	.22
.16 .50	26	38.8	.43
.51 .75	6	8.9	.74
.76 1.00	13	19.4	.96
1.01 1.25	2	3.1	1.125
1.26 1.50	6	8.0	1.46
1.51 1.75	0	0.0	0.00
1.76 2.00	<u>3</u>	<u>4.5</u>	1.93
Total	67	100.0	
Average size of farm ^a			.72

^aSimple average of all 67 farms.

etc. Peanut farms in Kwilu vary in size from .25 to 2.0 hectares. In this study, a model or typical size of farm was between .26 and .50 hectares. However, the average size was .72 hectares (Table 3.6).

Since costs and returns are useful in calculating margins, the economic efficiency of a marketing system can be related to the cost of producing peanuts. Since there is a need to know the average cost and return per bag, the calculation is also used to determine these production costs. A 1.0 hectare farm in Kwilu yielded on the average 1.15 tons of peanuts in-shell. To produce this amount, the farmer needed to lay away three compulsory bags of peanuts in-shell as the planting seed for the next season. The spacing between the beds of peanuts was about .2 to .4 meters, and with that spacing, the farmer will need on the average 80 kilograms of shelled peanuts to plant one hectare (Vandenput, R., 1981).

In general, yields, peanut prices and input costs were found to be pretty much the same across the Kwilu Sub-Region. In the case of land, there was no charge. Occupancy and cultivation rights stem from the agreement between the first settlers of the unoccupied land and the "spirits of the earth." The land head, in consultation with the council of the village elders, allocated land areas to new families setting up their own agricultural holdings. In turn, each family head distributed land to the family members. Farmers have land-use rights through several generations, and until now, these cultivation rights have been considered permanent. However, the land has to be actually bought from the land head, mostly around those big cities.

One item that deserves special consideration is the transportation charge from their fields to the villages. The transportation charge is

an insignificant decision variable in determining the prices at the farm gate level, even though producers incur transportation costs in bringing peanuts home, because the majority of the farmers do not discriminate between one product and another. They price peanuts the same as other products which they transport only a short distance. The peanut field may be located as far as five kilometers from the village, thus, it is approximately a one-hour walk from the village. The cost is to the farm himself--a cost for which he will obtain the same return, regardless of the distance his farm is from his village. Farmers plant peanuts a long distance from the village to avoid damage to their crop by hogs and goats. They have no fences and cannot risk harming the livestock of their neighbors

The most common agricultural tools used by peasant farmers were hoes (42.9 percent), machetes (32.5 percent), axes (11.7 percent), spades (5.4 percent), scoops (2.5 percent) and coupe-coupes (5.0 percent). On the average, each family owns at least 2.6 hoes, and 2.0 machetes. These two types of tools can be used at any stage of the production process as well as in either forest or savanna. The axes are mainly utilized to cut wood in the forest region and to clear land for new fields.

The major crops cultivated are manioc, corn, peanuts, cucumbers, sugar cane, pineapple, pepper, palm tree, etc. The chief livestock enterprises are cattle, sheep, goats, pigs, and honey. An important number of chickens, ducks and pigeons are also raised in the villages. About 18 percent of respondents breed only, while 82 percent practice both plant agriculture and some type of livestock production.

The agricultural sector is basically traditional and characterized by a good bit of gathering of what nature produces without cultivation

or care. Typically, the farmer sells only the surplus over family consumption. Most farmers surveyed practice the harvesting of wild crops. Fishing and hunting are also practiced in Kwilu. Besides agriculture, people often practice some other business such as tailor, civil service, carpenter, etc. Kwilu's agricultural sector has undergone many changes during the past year or so. Palm oil and "palmiste" oil (oil from palm fruit and nuts or seed), once important as both a consumption and export crop before the independence of Zaire, are often not harvested nowadays. The labor force has shifted to other cash crops with more income and less danger. Gathering palm fruits involves climbing palm trees which always, for the higher, older trees has a considerable element of danger. Thus, many farmers are reluctant to climb palm trees to harvest palm fruits. Peanuts and manioc have become the principal cash crops and constitute the major source of income for the farmers. This has resulted in an increase in their proportion of the land areas devoted to farming--and to their total output. Furthermore, the deterioration of the terms of exchange for export crops has resulted in a decrease in farmers' purchasing power for manufactured goods. The farmer then could do no better than grow food crops which might guarantee family food, and with the surplus, he might buy other things.

None of the farmers surveyed used fertilizers, insecticides, irrigation, improved seed, or mechanical power. The gain in farm productivity is still low. The production and marketing of peanuts in Kwilu continue to have serious problems which need attention.

In Kwilu, farmers usually intercrop peanuts with manioc and other crops, especially corn. Farmers also follow a rotation system. Peanuts

came at the head of the rotation followed by manioc and sasame, and finally cucumbers.

According to the report of June 1979 from the Projet ZAI/71/013 (le Credit Agricole au Zaire) financed by the United Nations Development Program, the cost per hectare was 580 Zaires and the expected return of a yield of 800 kilograms per hectare was 3,360 Zaires. This thesis study has revealed a cost of 743.50 Zaires with a return of 3,000 Zaires. This difference in cost can be explained partly by the increase in price of tools and the increase in the minimum wage from 1979 to 1982. Table 3.7 gives the comparison of costs and returns for the two different time periods.

THE ROLE OF PEANUTS IN KWILU

Over 80 percent of the people in the sub-region of Kwilu make their subsistence upon agriculture which has low productivity and low income. Three of the main cash crops are manioc, corn and peanuts, which provide about 70 percent of the peasant farmer's income. The predominance of manioc over other crops is due to several reasons. First, manioc is a base food of the region, eaten regularly by nearly all farm families. Secondly, Zairian people eat both roots and leaves of the manioc plant--and the stem is used as the method of propagation (cuttings) for the next season. For the country as a whole, manioc roots are the most important single source of energy (calories) and the leaves are an important source of protein. A family could probably live for a long time with no other food. Thirdly, manioc gives high yields: 6.9 tons of roots (Situation Actuelle de l'Agriculture Zairoise, p. 67) and possibly one-third that tonnage in leaves

Table 3.7

COSTS AND RETURNS FOR 1.0 HECTARES OF PEANUTS, ZAIRE 1977 and 1982

	1979 ^a	1982 ^b
	.....Zaires.....	
Total	3,360.00	3,000.00
Labor Cost	(475.00)	(418.80)
Seed	(144.80)	(300.00)
Cost of Tools .	(5.00)	(29.70)
Returns over Costs	2,735.20	2,251.50

^aData from the Projet ZAI/71/013 Report, 1979.

^bData from the survey made during this study.

(PRONAM Rapport Annuel, p. 35).⁴ Fourth, manioc has a built-in system for the conservation of its two food products, roots and leaves. The farmer digs roots and picks leaves--only as he and his family need them. The remainder of the roots keep for many months (up to two years or even longer) in the ground attached to the plant. Leaves left on the plant become too old and hard, but there are always new ones which can be harvested. For all of these reasons, and for several factors of a lower order of importance, the decision to grow manioc in Kwilu is a foregone conclusion. From the peasant farmer's point of view, it is a main crop. However, there is substantial reason for the farmer to choose peanuts in Kwilu over their competitor, corn, as a supplementary enterprise to manioc--as will be shown below.

For budgeting purposes, a size of 1.0 hectare was chosen for convenience. Since the costs and returns data obtained are considered to be representative of the entire sub-region, smaller or larger operations can use appropriate multiples of the 1.0 hectare unit.

Equipment is assumed to be fully depreciated in five years and is used to perform all necessary activities required on the farm. Prices used for inputs and outputs were obtained from local businessmen.

Farm enterprise budgets for peanuts were computed in order to provide a picture of necessary expenses, receipts, and net returns to the farmer on one hectare. The return per man-day of labor can be obtained by dividing the return above labor costs by the number of man-days. Table 3.8 gives the return per man-day for the budget made for the Kwilu Sub-

⁴Both root and leaf yield can be much higher on good soil with appropriate cultural practices.

Table 3.8

COST AND RETURNS BUDGET FOR 1.0 HECTARE OF PEANUTS, KWILU
SUB-REGION, BANDUNDUJ REGION, ZAIRE, 1982

Item	Unit	Rate	Price	Total Value ^a
			.....Zaires.....	
Total Revenue	bag	30	100.00	3,000.00
Labor Costs				
- Clearing	m.d.	63		
- Ploughing	m.d.	40		
- digging	m.d.	25		
- shelling 100 kgs.	m.d.	20		
- actual planting	m.d.	20		
- burying nuts	m.d.	5		
- weeding	m.d.	16		
- digging at harvest	m.d.	20		
- separating nuts	m.d.	125		
- transporting	m.d.	5		
- drying	m.d.	5		
- sacking	m.d.	<u>5</u>		
Total labor	m.d.	349	1.20	(418.80)
Seed Cost	bag	3	100.00	(300.00)
Cost of Tools ^b				
- machetes	each	2.0	23.25	
- hoes	each	2.6	24.00	
- axes	each	<u>.7</u>	<u>56.50</u>	
Total depreciation				(29.69)
Return over Costs				2,251.50
Return per Man-day above Non-Labor Costs ^c				7.65

^aNumbers in parenthesis refer to costs (minus values).

^bTools were depreciated over a useful life of five years. No other costs were counted because the opportunity cost for the money invested in tools was

Table 3.8 (Cont.)

probably the quantity of consumption goods that could have been purchased.

^cNon-labor costs were seed costs (300 Zaires) and tool depreciation cost (26.69 Zaires). The remainder was divided by the total man-days used (349).

SOURCE: Based on survey data obtained as a part of this study, also, Normes de Main d'Oeuvre pour les Travaux Agricoles, au Congo Belge, INEAC, 1958.

Region peanut enterprise. The return per man-day of labor spent on the one hectare peanut enterprise, 7.65 Zaires, may be compared to the budget cost of a man-day of labor of only 1.20 Zaires. There is a substantial improvement in return over labor cost. Table 3.9 shows a lower net income per hectare for corn than for peanuts--but a higher return per man-day. According to these budgets, a farmer might choose corn over peanuts if he and his family constituted a small labor supply.

The budgets, Tables 3.8 and 3.9, indicate a higher net income from peanuts than corn; however, the return per man-day is a little higher for corn since corn requires less work than peanuts. However, these budgets do not reflect the advantages of peanuts over corn as an intercrop with manioc. Personal interviews with Citoyen Lutaladio ne Bambi, Ingenieur Agronome (PRONAM, Mvuazi, 1983) gave a clear picture of the current indications of their intercropping experiments. He pointed out that in their latest experiments, manioc produced lower yields interplanted with corn than when interplanted with peanuts (Table 3.10). The reasons for the superiority of peanuts as an intercrop were believed to be as follows:

1. Peanuts fix nitrogen which can be used by the manioc; whereas, corn competes with manioc for nitrogen.
2. Peanuts provide a complete ground-cover which chokes out weeds and eliminates considerable work otherwise needed in weeding. Corn does not cover the ground and suppresses weeds effectively.
3. Corn grows taller than manioc and thus competes with manioc for sunlight; whereas, peanut plants are too short to compete for sunlight with manioc.

Insofar as the family's diet is concerned, peanuts provide an excellent supplement to the manioc roots and leaves for additional needed

Table 3.9

COSTS AND RETURNS BUDGET FOR 1.0 HECTARE OF CORN, KWILU
SUB-REGION, BANDUNDU REGION, ZAIRE, 1982

Item	Unit	Rate	Price	Total Value ^a
			.....Zaires.....	
Total Revenue	bag (60 kg)	13	150.00	1,950.00
Labor Costs				
- clearing	m.d.	63		
- ploughing	m.d.	40		
- sorting of seeds	m.d.	1		
- actual planting ^b	m.d.	15		
- cutting and actual sticking	m.d.	17		
- weeding, total	m.d.	18		
- harvesting	m.d.	10		
- shuck and shell	m.d.	33		
- transport	m.d.	5		
- drying	m.d.	5		
- sacking	m.d.	<u>5</u>		
Total labor	m.d.	212	1.20	(254.40)
Seed Cost	bag	1	150.00	(150.00)
Cost of Tools ^c				
- machete	each	2.0	23.25	
- hoe	each	2.6	24.00	
- axe	each	.7	<u>56.50</u>	
Total depreciation				(29.69)
Return over Costs				1,515.91
Return per Man-Day above Non-Labor Costs ^d				8.35

^aNumbers in parentheses refer to costs (minus figures).

^bSeeding rate was 30 kilograms per hectare planted 1.0 X 0.5 meters, four seeds per hill.

^cTools were depreciated over a useful life of five years. No other ownership costs were counted because the opportunity cost for the money invested in

Table 3.9 (Cont.)

tools was probably the quantity of consumption goods that could have been purchased.

^dNon-labor costs were seed cost (150.00 Zaires) and tool depreciation cost (29.69 Zaires). The remainder was divided by the total man-days used (212).

SOURCE: Based on survey data obtained as a part of this study. Also used Normes de Main d'Oeuvre pour les Travaux Agricoles, au Congo Belge, INEAC, 1958.

Table 3.10

RESULTS OF PRONAM EXPERIMENTS IN INTERCROPPING MANIOC, CORN AND PEANUTS,
PRONAM STATION, MVUAZI, BAS-ZAIRE REGION, ZAIRE, 1983

Treatment	Manioc	Maize	Peanuts
	.....Metric tons per hectare.....		
Manioc-Maize-Peanuts	14.4	2.6	1.5
Manioc-Maize	15.1	2.9	--
Manioc-Peanuts	16.1 ^a	--	2.1
Manioc alone	15.4 ^a	--	--
Maize alone	--	3.2	--
Peanuts alone	--	--	2.5

^aNote that manioc actually yielded more interplanted with peanuts than when grown alone.

SOURCE: Citoyen Lutaladio ne Bambi, Ingenieur Agronome, PRONAM, Mvuazi, 1983, by personal interview. Citoyen Lutaladio cautioned that yield differences were not statistically significant.

protein (Table 3.11). Mukuna's thesis (p. 35) showed that the nutritional requirements for an adult male could be met with a diet of manioc roots, manioc leaves and peanuts. The protein in this diet also met the requirements for the eight essential amino acids. The recommended daily intakes are the amounts of energy, protein, vitamins and other nutrients considered sufficient for the maintenance of health in nearly all people, as proposed and established by FAO/WHO expert groups (Mukuna, 1982). After water, protein is the major component of body tissue. Protein is essential to growth, provides essential amino acids which are the building stones for tissue synthesis, and supplies raw material for the formation of digestive juices, hormones, plasma proteins, hemoglobin, vitamins and enzymes. Protein can also be used for energy purposes, and will be used for energy whenever there is a shortage of calories in the diet. Protein will also be used as calories when there is a deficiency in one or more of the essential amino acids; for example, if there were only half enough of lysine in the diet, only half of the necessary protein would be used by the body as protein, the rest would be used as energy (calories). The safe level of protein for a moderately active adult male weighing about 70 kilograms has been estimated at 56 grams per day (Mukuna, 1982). The importance of having information on amino-acid composition of foods was recognized years ago when investigators pointed out that the quality of a protein was related to the kinds and quantities of amino acids it contained. Amino-acid content of foods is also used to evaluate the protein supplies in various countries and to serve as a basis for developing nutritionally sound food policies. That is the reason for dealing with the subject in this study. The data indicates that peanuts have a high content of energy

Table 3.11

NUTRITIONAL COMPOSITION OF SELECTED FOODS

Nutritional Element	Manioc Flour	Manioc Leaves	Soybeans	Cowpeas	Peanuts	Recommended Daily Allowance
	.....per pound.....					
Energy (calories)	1560.00	413.00	1910.00	1556.00	2558.00	2700.00
Protein (gms)	7.30	31.80	172.37	103.00	117.90	56.00
Isoleucine (gms)	.21	1.54	8.57	4.06	4.49	.84
Leucine (gms)	.29	4.08	14.66	7.46	8.51	1.12
Lysine (gms)	.30	1.98	12.03	7.25	4.71	.84
Total - S (gms)	.20	.88	4.89	2.40	3.19	.70
Total - AR (gms)	.30	3.00	15.23	8.26	11.91	1.12
Threonine (Gms)	.20	1.40	7.27	3.82	3.47	.56
Tryptaphan (gms)	.09	.46	2.41	1.15	1.38	.21
Valine (gms)	.24	1.82	8.05	4.81	5.55	.98

SOURCE: Unpublished Masters thesis of Kalenda Mukuna, University of Georgia, 1982.

and of amino acids. For the lowest income group of the population, protein, energy, and vitamin-mineral requirements can be satisfied with manioc flour, manioc leaves and peanuts at relatively low cost--and these are among the most widely accepted foods available to Zairian people. The contribution of peanuts to the diet are perhaps not fully appreciated. Table 3.11 gives the content in nutritional elements of some selected food crops widely used in Zaire.

Since growing manioc for the Bandundu farmer is a foregone conclusion, the decision he must make is what crop to grow with the manioc. Corn appears to be the strongest competitor of peanuts among Kwilu farmers--based on area planted, quantity produced and number of farmers planting. Table 3.12 illustrates this point. Furthermore, according to the Projet ZAI/78/001, the local consumption of the three main crops in Kwilu was as follows: corn, 22 percent; peanuts, 33 percent; and manioc, 36 percent. This shows that, among the three main crops of the region, peanuts follow rather closely behind manioc in terms of proportion of the crop consumed by the farmer and his family--with corn in the third position.

A greater area put into the cultivation of peanuts could provide farmers with a substantial increase in income and contribute to solving the crucial problem of rural migration resulting from a low standard of living. As there is a serious lack of reliable sources of income, peanut growing might provide farmers with additional money. Region-wide, the Kwilu Sub-Region is ranked as the largest in cultivable land and rural population (Table 3.12).

The highest per unit price for peanuts was observed in Kikwit, which constitutes the largest concentration of population in the Kwilu Sub-Region

Table 3.12

COMPARISON OF PEANUTS WITH OTHER MAJOR FOOD CROPS GROWN IN KWILU,
BANDUNDU REGION, ZAIRE, 1975

Major Crop	Area	Production	Number of Farmers
	hectares	metric tons	persons
Corn	177,742	167,644	352,664
Rice	21,467	30,460	91,566
Peanuts	432,300	108,000	422,024
Manioc (Chikwangué)	308,014 ^a	461,554	498,941
Plantain	11,136	49,110	115,376
Banana	8,762	40,416	133,164
Sweet Potato	7,728	47,630	109,085
Manioc (Cosettes)	308,014 ^a	1,381,099	498,941
Cucumber	61,933	47,485	259,349
Yam	9,747	59,405	125,597
Millet	35,162	25,524	78,503
Onion	438	440	14,470
Manioc Root	308,014 ^a	4,935,039	498,941

SOURCE: Rapport Annuel de la Sous-Region du Kwilu, 1975.

^aApparently, the total area planted in manioc was 308,014 hectares, which yielded 461,554 tons of chikwangué, 1,381,099 tons of cosettes and 4,935,039 tons of roots.

Table 3.13

GENERAL STATISTICS ON PEANUT PRODUCTION BY ZONE, KWILU SUB-REGION,
BANDUNDU REGION, ZAIRE, 1976

Zone	Area 1,000 ha	Number of Farmers persons	Quantity Produced 1,000 tons	Quantity Sold 1,000 tons	Price Zaires/kg
Bulungu	15.7	62,732	13.3	3.9	.80
Bagata	9.5	26,616	7.5	5.7	1.00
Idiofa	32.1	95,314	18.4	3.7	1.00
Gungu	6.5	34,338	4.7	1.2	1.00
Masi-manimba	13.3	79,979	9.9	6.6	1.00
Ville Bandundu	1.1	4,092	.9	.7	1.50
Ville Kikwit	<u>.3</u>	<u>3,123</u>	<u>.3</u>	<u>.1</u>	<u>1.50</u>
Total	69.5	306,194	55.0	21.9	--
Average	9.9	43,742	7.9	3.1	1.08

SOURCE: Division des Statistiques Agricoles, Department de l'Agriculture 1978 and Rapport Annuel, Division Regionale de l'Agriculture, Bandundu, 1976.

of Bandundu and is on the paved highway leading to Kinshasa. The lowest price was observed in Bulungu, which can be explained by the long distance of transportation from Bulungu--and to the fact that farmers are scattered all over the zone. It should be noted also that Bulungu is a long distance from the paved highway leading to Kinshasa.

Nearly all available information regarding peanut marketing patterns and problems in the Bandundu Region may be limited to the sub-region of Kwilu for two reasons. First is the fact that, this sub-region groups the most fertile land and its population has the know-how in producing peanuts. Secondly, the constraints of time and money prohibited conducting such a study all over the region. However, peanuts have begun to move, particularly along the asphalted road to Kinshasa, the nation's capital, which represents the largest market in Zaire--with about 3.0 million potential consumers (Boute J. and Saint Roulin, 1978).

Approximately 40 percent of the peanuts grown in Kwilu are sold (Table 3.14). Farm families use peanuts not sold for three purposes: food, livestock feed and seed (Table 3.15).

In addition to its many uses as a human food, peanut cake, a by-product of peanut oil extraction, is extensively used as a livestock feed. Peanut oil is an excellent cooking oil, but can also be utilized for diesel engines. About 95 percent of farm equipment is diesel powered (Georgia Agricultural Research, Vol. 22, No. 1 and 2, 1981, p. 15). But given the uncertainties of the petroleum supply, farmers need an emergency source of fuel for days, even weeks, when diesel fuel might not be available. Experiment station scientists believe that peanut oil is the best emergency fuel, but perhaps its outstanding one is this: it is readily available

Table 3.14

DISTRIBUTION OF PEANUTS PRODUCED IN KWILU, ZAIRE, 1976

Disposition	Quantity	Proportion
	metric tons	percent
Consumed	33.1	60.2
Sold	<u>21.9</u>	<u>39.8</u>
Total Produces	55.0	100.0

SOURCE: Rapport Annuel de la Sous-Region du Kwilu, Region de Bandundu, Zaire, 1976.

Table 3.15

USES MADE OF PEANUTS CONSUMED BY THE FARM FAMILY, KWILU, ZAIRE, 1976

Disposition	Quantity	Proportion
	metric tons	percent
Food for family	23.5	71.0
Livestock feed	1.3	4.0
Seed	8.3	25.0
Oil	0.0	0.0

SOURCE: Rapport Annuel de la Sous-Region du Kwilu, Region du Bandundu, Zaire, 1976.

and could be used today if necessary. In fact, it is already being used to fuel two campus busses on the University of Georgia's campus (USA).

Another advantage of using peanut oil to power farm machinery is that its manufacture fits right into a farm situation: all you need is a sheller, a press, and a little time to let the gum settle to the bottom of the tank. In addition, peanuts have a higher yield (50 percent) of oil than any other oil-producing seed, and the yield could go even higher (60-70 percent). Also, to the peanut-growing-for-fuel's credit is the fact that farmers have a welcome outlet for peanuts contaminated by aflotoxins--or peanuts that are otherwise unsuitable for the regular peanut trade.

CHAPTER IV

AGRICULTURAL MARKETING IN BANDUNDU AND KINSHASA REGIONS

OVERVIEW OF THE EXISTING SYSTEM

The Bandundu economy is basically dependent on agriculture, therefore, improvements in the efficiency of the agricultural marketing system will improve the economic well-being of a large majority of people, once marketing can create the appropriate utilities of time, place, possession and form.

Serious studies of marketing in the development of the less developed countries began only a few years ago with Halton (1953) and Bauer (1954). The first pointed out specifically that marketing was of greater importance in the economic development of backward areas than its neglect in the literature would indicate. An even more neglected area has been and is the distribution of production supplies, such as fertilizers, seeds, and farm equipment (hoes, machetes, axes, etc.).

It becomes apparent that changes in the organization of marketing are necessary if changes in production are to be realized in an underdeveloped country, and that marketing might be the leading factor in encouraging changes in farmers' incomes. The role of marketing in stimulating and maintaining development is set out as follows: (1) cash returns to producers depend on their goods reaching a consumer, or the success of a farm production project in changing a physical production pattern depends

on effective organization to bridge the gap between the producers and the consumers; (2) detailed market information and research on where, when and how much products can be sold is essential in determining which products to grow and which varieties of these products; (3) effective utilization of modern inputs depends on an effective distribution of farm production supplies (fertilizers, insecticides, machinery); and (4) effective distribution of farm family consumption requirements creates an incentive to farmers to earn incomes beyond the subsistence level. All this requires the establishment of efficient marketing institutions and methods, and that appropriate facilities be provided for easy handling and effective product protection during transportation. In short, one needs an efficient organization for marketing (Abbot, 1963). An inefficient marketing system results in a waste of valuable resources, inequities in income distribution, and deceleration of the region's badly needed economic growth. For instance, owing to poor transportation facilities, high risk allowances and high marketing margins, production for the market may become uneconomic. Marketing costs may take too high a share of the final consumers' prices. Only about 40 percent of the consumer's dollar, on the average, went to the farmer in the U.S.A. (Shepherd, 1947). Still, there was enough left to give the farmer a fairly good incentive to produce. More recent data from the U.S.A. show the farmer's share dropping to about 33 percent. However, the percent going to the farmer does not give the full picture. It will, for example, be much higher for eggs than for wheat or cotton because the marketing costs of wheat and cotton are much higher than for eggs. The key point is that the farmer must get a price high enough to provide him a satisfactory incentive to produce.

Mears, in his analysis of margins (Mears, 1957) on rice in different marketing channels at one point in time in Indonesia, provides evidence that inefficient organization and handling, lack of competition between channels, and producer and consumer weakness in bargaining were associated with the channels taking notably higher margins. This hypothesis that market deficiencies of the type observed by Mears occur most in the marketing of traditional, semi-subsistence crops was examined and confirmed at a FAO technical meeting in Delhi, India in 1963 (Abbot, 1963). The analysis of the marketing problems can be done by visualizing marketing activities as constituting a functioning system. Consequently, some aspects of market structure, conduct and performance theories, will be used as the basic theoretical framework for evaluating the peanut marketing in the Bandundu and Kinshasa Regions. The use of this particular approach is rationalized on the appropriateness of these to the stated objectives of this study. Mueller (1961) argues that this approach is superior to alternative theories, where primary consideration is given to factors such as: (1) bargaining power, (2) price discrimination and predatory practices, (3) vertical integration and contract farming (Buys, 1975). Some of the alternative approaches include demand analysis, plant operational efficiency, operations research, etc. (Buys, 1975). With the characteristics of peanut marketing in particular, and the development goals of the Zairian economy in general in mind, this study uses the market structure approach. However, it is concentrated on the Kinshasa and Bandundu Regions--more specifically, it is concentrated on the Kinshasa market and the Kwilu production area.

A general objective of this study is to provide an understanding of the extent to which the existing peanut marketing system satisfies consumers'

needs at satisfactory prices and provides farmers with an acceptable production incentive. An important component of this objective is a description of the existing peanut marketing system between the Bandundu and Kinshasa Regions. An analysis will be made of the effects of changes in the market price on farmers' incomes. This may provide an indication of the degree of efficiency of the existing marketing system as margins and costs evolve over time through different marketing agents involved in moving peanuts from the farmer to the final consumer.

This study focuses on the major marketing channels for peanuts between the Bandundu and Kinshasa Regions of Zaire. Of the four possible channels, the two most important with respect to volume of peanuts handled appears to be: (1) the merchant wholesaler who brings a boat or truck to the local community, loads the peanuts, takes them to Kinshasa and sells to market middlemen or to retailers, and (2) the farmer collects his own production, together with that of others in his village in order to have a boat or truckload, brings it to Kinshasa and sells to middlemen or retailers. Of a total of seven wholesalers surveyed, five were merchants from Kinshasa who go to buy in the rural area. Perhaps, we can explain this ratio by the fact that the wholesalers from Kinshasa are financially better off than those from the rural area, or by the fact that perhaps the merchants of the rural area fear possible losses due to theft and to brief price fluctuations for peanuts that do not belong to them. The farmers interviewed brought their own peanuts and those of their relatives. Many of the peanuts came from the Bandundu Region. Between 1977 and 1980, an average of 63,500 tons, or 83.6 percent of the total production of the Bandundu Region, came from the sub-region of Kwilu, where there is a large area of cultivable land and a large number of cultivators. From 1977 to

1980, the area occupied by peasants in the Kwilu Sub-Region was estimated to be 77,200 hectares, or 81.4 percent of the total cultivable land. In 1976, 306,194 farmers were involved in peanut production in the area.

This study should be useful to: (1) government officials, (2) agricultural economists, and (3) representatives of farm organizations and members of the peanut industry. It should give them a better understanding of the price-making influences in the industry and help them to take necessary actions to correct the problems.

MARKETING STRUCTURE AND CHANNELS

Market structure refers to the description of the physical and institutional dimensions of the marketing system. Specifically, reference is made to the degree of market concentration; i.e., the number of firms and their distribution by size and/or other measures of concentration, the degree of product differentiation, and the condition of entry into the market (Raymond and Richard, 1978). It is argued that, single or in combination, these characteristics influence the nature of competition and pricing within the market (Bain, 1959). A good study of market structure that uses all or most of the above criteria usually requires data related to demographic and physical characteristics of the marketing outlets. Empirical analysis of market structure attempts to identify and quantify those characteristics of market systems which tend to influence the nature of competition and pricing policies. In the present study, the lack of a comprehensive and sophisticated statistical base precludes the use of all the traditional market structure criteria. As an alternative, the present study utilizes a set of selected market structure criteria, rather

than the full complement of criteria generally used in studies dealing with developed economies. Empirical analysis of market structure will be based on objective characterization and quantification, when possible, of the institutional components of peanut marketing channels. According to the Committee of Definitions of the American Marketing Association, a marketing channel is the structure of intracompany organization units and extracompany agents and dealers, wholesale and retail, through which a commodity, product or service is marketed (R. S. Alexander, 1963). A marketing channel is the sequence of institutions listed in the order of their participation as sellers, buyers, or holders of peanuts--those who provide the services and facilities for moving them from producer in Kwilu to consumer in Kinshasa.

The farmer-producer of peanuts has several alternatives for reaching the final consumer. The five marketing channels commonly used are as follows:

- a) The farmer's wife brings the surplus of the farm in a basket into the market by truck, bicycle or on foot early in the morning. There, she sells wholesale or retail in the farmers' market, or at one of the numerous street markets scattered throughout the city.
- b) A small country merchant buys the farmer's peanuts, or takes them in payment of a debt, and brings them to the market by truck or bicycle.
- c) A little girl buys from a farmer or small merchant a basket of peanuts and takes them to a public retail market, or sells them door-to-door.
- d) A merchant wholesaler brings a truck or boat to the local community,

loads it with peanuts, takes it to Kinshasa and sells wholesale to market middlemen, or to market retailers, collectively.

- e. A farmer collects a boat or truckload of peanuts of his own and those of his neighbors in a local village, brings it to Kinshasa and sells to merchant middlemen from his truck--or to market retailers.

The choice of a particular channel depends upon the attitude of the farmer, the development of the market organizations, the scale or productive activities, and the distance and development of the urban areas.

Regardless of the objective of this paper and the limitations of time and money, this study will focus on the two following marketing channels:

- 1) The wholesaler purchases peanuts in Kwilu and returns to Kinshasa, sells to merchant middlemen who have the option of retailing them in the same market, selling to other retailers, or transporting them to other market places.
- 2) The farmer collects a truckload, takes it to Kinshasa and sells to the market retailers.

Marketing functions are typically performed through a fantastically complex network of individuals and organizations. The marketing process involves the movement of goods from the farmer to the consumer directly, or through marketing middlemen. However, in contrast to a more complex society in which there is a great deal of specialization in marketing, both as to crops handled and services performed, peanut marketing patterns in Kwilu are relatively simple, unspecialized, characteristically rudimentary with small volume sales. In regard to the major channels through which peanuts flow from Kwilu to Kinshasa, four basic marketing agents

can be identified: (1) producers, (2) wholesalers, (3) market middlemen, and (4) market retailers. Figure 4.1 illustrates the marketing channels and flow of peanuts in the Kwilu Sub-Region.

Producers

The Bandundu Region has distinctive features in its crop production patterns. Some commodities; i.e., plantain, yam, sweet potatoes, etc. are produced and utilized almost entirely for subsistence while others (manioc, peanuts, and corn) are produced for both family consumption and as cash crops.

On the average, the typical production units supplying the market are small--25 to 50 acre (Table 3.1). Many farmers sell only a little surplus beyond the family consumption. In recent years, peanuts for exportation came from the small farms. Up to now, there are no large-scale commercial firms engaged in the production of peanuts in the Kwilu Sub-Region. Farmers in general sell in sacks. According to a small sample (15 sacks) weighed at the Gambela market, these weighed from 29.2 to 45.7 kilograms (net weight) with a mean net weight of 38.3 kilograms. Mean gross weight was 38.6 kilograms with the tare for the burlap bag equal to 0.3 kilograms.

Of the conventional routes that peanuts take to reach the consumer, the most common are as follows:

Direct sale by farmers to consumers. Farmers in this instance produce and also participate in the marketing activities. Theoretically, this eliminates the use of marketing middlemen and according to some people, reduces the cost to the final consumer. This study could show if, in practice, there is evidence of Kinshasa consumer savings due to this channel.

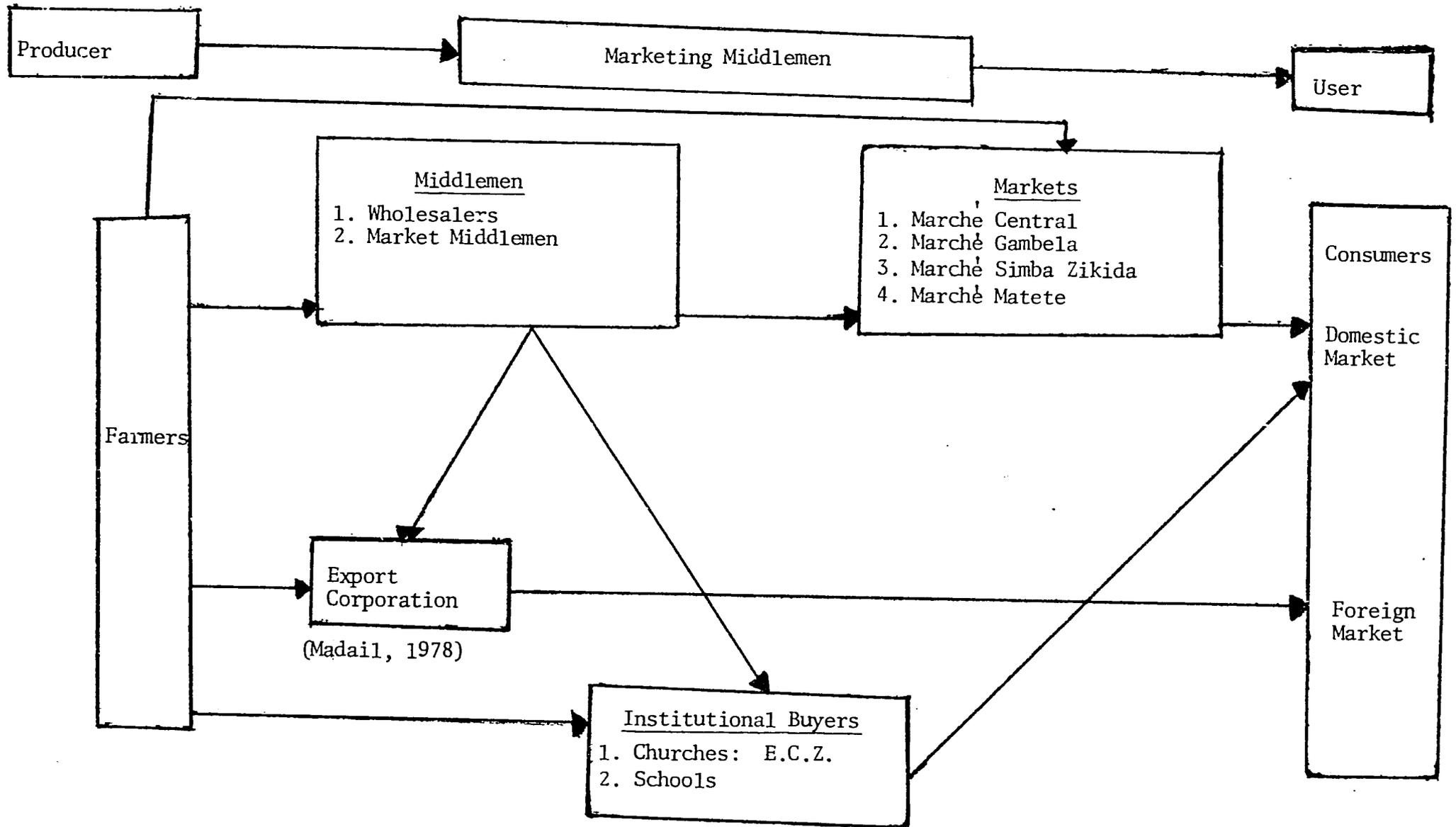


Figure 3.1 FLOW OF PEANUTS IN THE KWILU SUB-REGION

Unfortunately, it was not possible to get samples of this case. In Kwilu, few farmers sell their peanuts directly to consumers in the Kinshasa markets. Transportation facilities constitute the bottleneck in the expansion of the marketing of peanuts. However, in some instances, the farmer collects a truckload of peanuts and takes them to sell to Kinshasa (30 percent). The use of this channel precludes farmers from specializing in production; marketing activities would compete for their limited time and money. However, specialization on a limited scale is still possible because the production of peanuts in Kwilu is done primarily by farmers' wives.

Sale to middlemen. Peanuts are sold either to market middlemen or to wholesalers for resale to market retailers. So far as wholesalers are concerned, there are two types: (1) wholesaler merchant, and (2) wholesaler agent. The difference between the two is that the merchant takes title to peanuts but the agent does not. The wholesaler agent can be identified as a farmer or other person who collects peanuts and takes them to sell in Kinshasa. The actual wholesale merchants are not the persons who go to buy peanuts in Kwilu and return to sell in Kinshasa. These persons are agents for a group of wholesalers made up of some top-level politico-administrative people of the country. In general, there were no specialized wholesalers for the farmers' peanuts and most of the farmers sold to the first buyer. The market middlemen buy wholesale from wholesalers.

Sale to exporters. There are virtually no exporters; their purchases were not significant. The traditional exporters, such as MADAIL, Compagnie Africaine Cooreman, etc. seem to be well known by the farmers, even though they do not operate on a large scale. Important buyers of farm peanuts are wholesalers who buy from farmers and exporters who deal usually with

foreign markets. However, since 1978, the country has not exported peanuts due to the generally depressed economic condition of the country and to the fact that peanut production, while increasing, has not kept up with population growth--especially in the city of Kinshasa.

Direct Sale to Institutional Buyers

This channel was used by only six of the 67 farmers interviewed. Limited demand and high quality requirements make this channel inaccessible to a large number of farmers. As in sale to market middlemen and wholesalers, farmers have no written contract with institutional buyers but only an understanding or a verbal contract. Some institutional buyers such as the boarding school, Eglise du Christ au Zaire, buy under the same conditions as any other consumers. Only the Catholic School in Idiofa bought under wholesale conditions. Farmers usually sell their peanuts for cash. However, about 50 percent of respondents in Gungu said that they sold their peanuts by barter.

Sale to Retailers

Retailers constitute the most diversified group of the marketing system in Kwilu and Kinshasa. Nearly all consumer goods are sold through retailers. Retailers can be broadly classified by: (1) products (groceries, drugs, hardware), (2) by degree of organization into formal departments (department stores, boutiques), (3) by size (cash volume, number of employees), or (4) by customer policy (full service, self-service, etc.) (Fox, 1978). In Kinshasa, different types of retailers can be identified as: (1) market retailers, (2) street retailers, and (3) neighborhood retailers. For the purposes of this study, only market retailers will be

of interest. Market retailers are numerically important and are the sole link between wholesalers and the low income consumers in Kinshasa.

The price usually fluctuates according to the law of demand and supply. In general, the market retailers carry a set of vessels (cans, jars) for measuring the quantities to be sold. As can be seen in Table 4.1, the price per kilogram goes up sharply in a negative relationship with the size of the sale; i.e., the smaller the unit of sale, the higher was the price per kilogram.

THE KINSHASA MARKETS

The most important market in Kinshasa, based on the number of retailers, is the Gambela market with 35.8 percent of them followed by the Matete with 35.1 percent (Table 4.2). The most popular form of product sold is shelled peanuts with skin not roasted (29.6 percent) followed by peanuts in shell (25.5 percent) and peanuts with skin roasted (4.7 percent). As a matter of fact, retailers often buy raw peanuts in shell from market middlemen, then they take away the shell and sell as peanuts with skin, not roasted. Some other retailers buy peanuts with skin, not roasted, roast them, and sell them like that or transform them into peanut butter. Besides this chain of transformation with the final product of peanut butter, peanuts can be eaten in each stage. Peanut butter is eaten with bread or used to cook food as an oil ingredient. According to the survey, margarine, the sole peanut butter substitute used as a bread spread, was sold by 92 retailers (36.2 percent) while peanut butter was sold by 162 or 63.8 percent.

Raw peanuts are taken from the soil, cleaned and dried. They are

Table 4.1

UNIT PRICING TABLE FOR DIFFERENT SIZES OF PURCHASE UNITS AND
DIFFERENT KINDS OF CUSTOMER SERVICE PROCESSING, KINSHASA MARKET, ZAIRE, 1982

Unit	Weight	Price	Price per Kg ^a
	kilograms	....Zaires....	
Bag (in shell at farm gate)	38.30	100.0	3.73
Bag (in shell to middleman or wholesaler)	38.30	200.00	7.46
Bag (in shell to retailer)	38.30	220.00	8.21
Peanuts in shell (basket)	1.089	6.00	7.87
Peanuts in shell (Sakombi)	.572	4.00	9.99
Shelled peanuts (Sakombi)	.369	4.00	10.84
Shelled and roasted (Sakombi)	.034	.50	14.71
Peanut butter (Spoon)	.019	.50	26.32
Margarine ^b (Spoon)	.007	.50	71.43

^aAll prices of peanuts are given on a shelled-weight basis using 70 percent as the shelled in comparison to the in-shell weight.

^bFrequently sold on bread in the same manner as peanut butter.

Table 4.2

DISTRIBUTION OF PEANUTS BY FORM IN WHICH SOLD, KINSHASA MARKETS, 1982

Product Form	Matete	Market Central	Gambela	Simba Zikida	Total	Percent
	.....number of retailers.....					
Peanuts in shell	113	5	133	36	287	25.5
Peanuts in shell roasted	6	4	51	0	61	5.4
Peanuts shelled (with skin) not roasted	161	42	109	21	333	29.6
Peanuts shelled (with skin) roasted	84	83	87	24	278	24.7
Peanuts shelled (without skin) roasted	2	1	0	0	3	.3
Peanut butter	<u>29</u>	<u>97</u>	<u>23</u>	<u>13</u>	<u>162</u>	<u>14.4</u>
Total	395	232	403	94	1,124	--
Percent	35.1	20.6	35.8	8.5	--	100.0

SOURCE: Personal survey of the markets.

available in three forms: in the shell, shelled with skins remaining and shelled without skins. There are several methods for removing the skins from the raw peanuts. In the Kinshasa markets, the retailers use the dry technique. In that method, the peanuts are roasted for a few minutes to allow for easy removal of skins by hand. Roasted peanuts include those roasted in the shell and dry roasted shelled peanuts. Dry roasted peanuts are shelled and skinned by the dry heat method. Peanut butter is made from roasted peanuts ground without skin and comes only in creamy style; i.e., not in the "chunky" style.

Peanuts were formerly an important export crop. While palm oil constitutes the major oil consumed in the country, peanut and cotton-seed oil appeared as its exclusive substitutes. In 1968, palm oil consumption accounted for about 80 percent, while peanut oil and cotton-seed oil accounted for 15 and five percent, respectively of the total oil consumed in the country (Arrete's Departement aux, 1976-1980). Another essential aspect in assessing the relative importance of peanuts is its contribution to the Gross National Product in terms of alternative employment for farmers and in generating foreign currency earnings. In 1968, Zaire exported 264 tons of peanut oil, and the gain for the country amounted to 101,000 Zaires (institut National de la Statistique, 1982).

CHAPTER V

MARKETING COSTS AND MARGINS

Basically, the main function of the price in any economic system is to guide in the efficient allocation of scarce resources. An efficient price system will indicate to the producers, the consumers' preferences and purchasing power, so that they may produce only those goods that the society wants most--and is able to purchase. Producers in a competitive economy, then, are obliged to combine the most recent and efficient production techniques and to organize the resources to obtain the optimum level of output--in order to maximize net incomes. Price, then, constitutes a transmitter of the supply and demand mechanism indicating what, when, how and where to produce and to sell. An analysis of agricultural prices appears to be essential for a good understanding of the agricultural production and marketing system. Basically, the study should include an analysis of prices at each step of exchange beginning with the first sale at the farm and ending with the final sale to consumers. This includes farm gate price, market prices, and marketing margins.

FARM AND MARKET MARGINS

In general, the first exchange occurs when farmers sell their produce rights at the farm and this price is called the farm gate price. It is the price farmers get when they sell their peanuts to wholesalers. The

farm gate price depends upon several factors such as the retail price, number of sellers and buyers, transportation cost, etc.

In general, the completed action of supply and demand is visible only at the retail level. The quantities that would be taken are the sum of all individual demand curves of consumers in the market. The quantities that would be offered are the sum of all individual supply curves of sellers in the market at the retail level. The good finally sold at retail consists of the original raw peanuts produced by the farmer plus the different utilities added by transportation, processing, storing, packaging, wholesale and retail distribution, etc. Although the farmer initiated this chain, he did not complete the process of production.

If the retail price is not high enough to pay all the marketers their reservation price--and leave something over for the farmer--there will be no demand at the farm level. The farm price in a competitive market will be the retail price less the real costs incurred in marketing. If the market is not competitive, the farmer may get less than the retail price minus the true costs of marketing. A monopsonist (single buyer) may offer the farmer less than that on a take-it-or-leave-it basis.

In Kwilu, if there is only one buyer, he may (and often does) offer the amount fixed for the farmer as the minimum farm price. If there is no competitor, the farmer has to take that price or make no sale. However, farmers respond to the law of supply. They will produce and offer more only at a higher price, *ceteris paribus*. Thus, one can see that the low price that may be offered by the monopsonist will not bring forth as much as the higher price that might prevail if the market were competitive. That smaller quantity goes on through the marketing channel, and at the retail level, you have a quantity sold perhaps substantially lower than

would be sold if the market were competitive. Looking below at the supply and demand curves at retail, you can see that the small quantity sold at the retail in Kinshasa is well below the equilibrium quantity. That smaller quantity, as can be seen on the graph (Figure 5.1), calls for a much higher retail price. Although the government fixes a maximum price, because there are far too many retailers and consumers to police. Thus, one can see a logical line of reasoning to explain why the farm gate price is too low while the retail price for the same crop of peanuts may be too high.

The retail price constitutes that price at which peanuts are bought by the final consumers in Kinshasa. It is the farm gate price plus the costs incurred in moving, processing, storing and providing other marketing services which may include a satisfactory return to market participants. In the market, sellers generally vary prices depending upon the size of the unit of sale, the quality, the overall appearance of the product, and the marketing costs incurred. Table 5.1 shows the variation in price with the size of the unit of sale. Compared to the farm price, the price of the small unit of sale, the "Sakombi," which was still in the same in-shell form, had increased by 168 percent. There was some increase in price as the size of the sale unit decreased, but the increase did not appear excessive.

An analysis of market price in the four main markets in Kinshasa revealed that prices did not show any fluctuations according to the time of day (morning or afternoon). However, peanut retail prices varied depending upon not only the customary supply-demand reasons, such as scarcity versus plethora, number of buyers and sellers, the market location, etc.,

Table 5.1

AVERAGE RETAIL PRICE PER KILOGRAM OF PEANUTS IN SHELL RELATED
TO SIZE OF THE SALE UNIT, KINSHASA MARKETS, ZAIRE, 1982

Unit of Sale	Weight kilogram	Price.....Zaires.....	Price per Kilogram	Each Price as a Percent- tage of the Farm Price percent
Large bags (farm)	38.30	100.00	2.61	100
Large bags (to retailer)	38.30	200.00	5.22	200
Basket	1.089	6.0	5.51	211
Cup (Sakambi)	.572	4.0	6.90	268

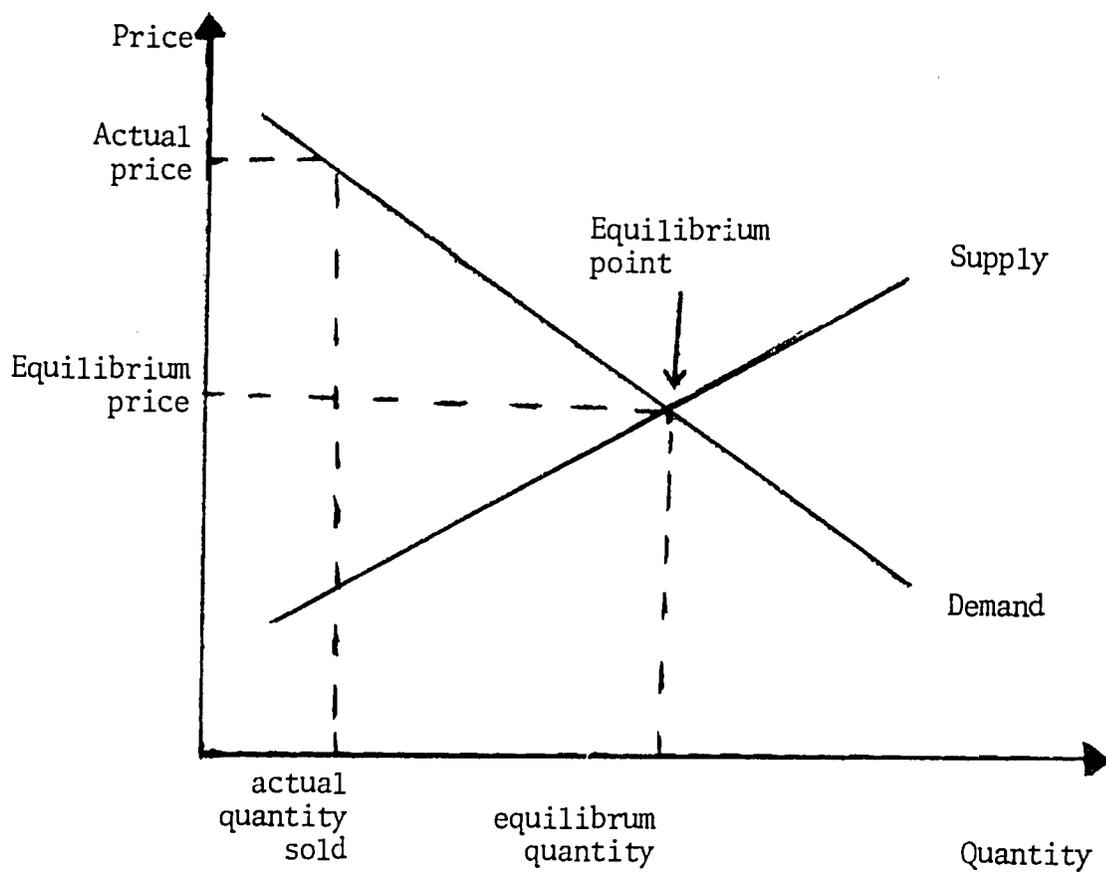


Figure 5.1 KINSHASA RETAIL MARKET FOR PEANUTS

but upon some judgment valuations concerning the type of customer. Three prices have been used by retailers in Kinshasa's markets: one for the local visibly poor people, one for the wealthier, and another for the foreigner. For example, it was observed in the Marché Central that the same cup of peanuts was sold at 3.50 Zaires to a poor person, but was 4.00 Zaires and 10.00 Zaires respectively to the wealthier person and the foreigner. However, only a small number of retailers generally obtain these higher prices due to their strong bargaining power.

The price policy of Zaire for agricultural products in general and for the peanut industry in particular consists of a mixture of programs: minimum prices to producers, maximum retail prices to consumers--and, for the export market, minimum quality requirements specified by OZAC (Office Zairois de Controle), etc.

The purpose of maximum prices is to prevent price increases at retail, and thus to protect the purchasing power of consumers. The minimum prices generally intend to insure that producers receive a "fair" or a "just" price for their product.

Mises' analysis of the effect of an agricultural price control policy, which held down the prices of farm products to achieve the end of cheap food for the city population, seems to be an appropriate parallel to the situation in Zaire (19: pp. 767-769). Mises pointed out that such a policy in the Roman Empire, coupled with inflation, made food production unprofitable for the farmers, who ultimately ceased to produce for the market altogether. This price policy destroyed an active market economy. The development of peanut marketing in Bandundu and Kinshasa will depend on price determination policy generating a high enough level of peanut prices

to motivate farmers to produce more. If it is at a low level, it will limit the production to a self-sufficiency level--with only a small part of total production available to sell. The farmer will usually plant enough so that he will have enough for himself and his family to eat--even in a bad crop year. When he experiences a better-than-average year, he will have some surplus. However, if the farm price is high enough, he will be motivated to produce much more for the market.

Placing the demand and supply curves for any given good or service on a single diagram (Figure 5.2), highlights the forces determining its market price. Suppose that sellers initially establish the price at P_2 . At that price level, consumers want quantity X_2' per unit of time, but sellers will place only X_2 per unit on time on the market. Therefore, shortages or excess demand equal to the difference between X_2 and X_2' occur. Faced by the shortages, consumers bid against each other for the available quantity supplied and will continue to do so as long as the shortage exists. When the price has been driven up to equilibrium price (E_p) by consumers, the shortage will have disappeared and buyers will be taking the equilibrium quantity (E_q) that sellers want to sell.

Conversely, when consumers are willing to take X_1 at P_1 price, surpluses will occur because sellers will bring X_1' quantity per unit of time to the market. Thus, an incentive exists for individual sellers to lower their prices and cutback the quantity supplied. Thus, given the conditions of demand and supply for a commodity, the equilibrium price (or equilibrium quantity) is that price (quantity) that, once attained, will tend to be maintained. If the price deviates from E_p , forces are set in motion to bring it back to that level.

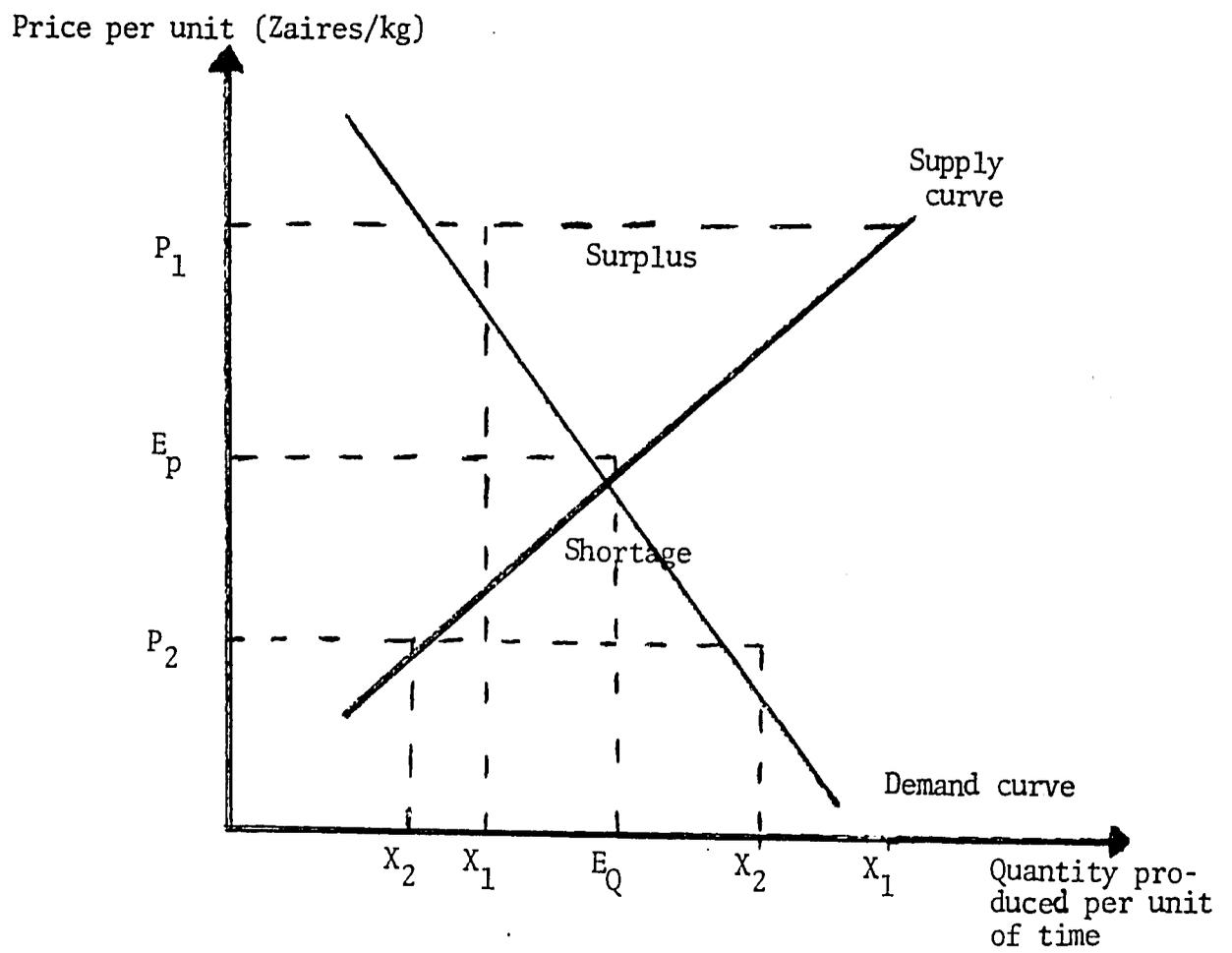


Figure 5.2 EQUILIBRIUM PRICE DETERMINATION

In Kwilu, because of the low level of competitiveness, especially among buyers, there is not an effective equilibrium price at the farm gate level--one that balances the quantities produced and offered with the quantities demanded at the retail level. The market information system is very poor. Government price determination further intervenes in the operation of the free pricing mechanism. Although the farm price fixed by government is stated to be a minimum or floor price, there is frequently little competition among buyers, thus, the legal minimum price becomes the actual price for both wholesalers and local authorities. There is no reason for wholesalers to offer more. However, with a low price at the farm level, farmers are stimulated to produce, but little if any over the subsistence level. The low quantity placed on the market in Kinshasa creates relatively high consumer prices. Although there is a ceiling or maximum price fixed by government, it is not possible to enforce it because of the large number of retailers on the market. Consumers bid up prices well above the legal maximum price and most of exchanging is done at the black market prices. Price theory certainly enables one to understand why retail prices in Kinshasa can be so high while farm prices in Kwilu remain too low to stimulate farm production.

In some instances, for other agricultural products, where farmers have an available illegal market across the national boundary that pays a much higher price than the predominant local price, that alternative market caused the government to set a considerably higher legal farm price than for the rest of the country. Thus, one can speculate on what would happen to farm prices if roads were kept in good enough shape for more buyers to enter the production areas, and if government did not grant a

a franchise so that even with physical accessibility, there would still be legal prevention of adequate competition.

On the other hand, there are many farmers who, because of social and economic pressures, are willing to take less than the legal price. They have a high marginal utility for enough money to buy a few necessities for themselves and their families.

Speaking of market equilibrium the laws of supply and demand may not work in Bandundu as they are presented in theory. Lack of information in the market, low legal price fixed by government, and government franchises to buyers are some of the more important market imperfections. However, the farmer behaves according to the theory. He is aware of the fact that the price he gets is lower than he needs. So, he becomes discouraged and offers a low quantity--or he sells in illegal markets where the price is more profitable. In some areas where poor roads and lack of bridges hinder buyers from reaching farmers, farmers may be ready to take lower prices than the legal ones because they do not want to let their produce remain unsold.

MARKETING MARGIN ANALYSIS

The use of operating margins becomes a necessary concomitant to establishing the maximum and minimum prices, and a means to prevent excessive marketing margins or to prevent profiteering by monopolistic buyers or sellers.

The marketing margin is the difference between the price paid by the consumer in Kinshasa and the price paid by the wholesaler at the farm gate. This marketing margin can be computed at each level of marketing participants.

The total marketing margin includes all the costs of marketing such as transportation, storage, processing, risk bearing, other charges, expenses for obtaining market information--and a return to middlemen large enough to induce them to stay in the business. An analysis of the marketing margin may indicate the following: (1) the efficiency with which marketing is done, (2) certain problems of the peanut marketing system in Kwilu and Kinshasa, and (3) the nature of the allocation of the retail price paid by the consumer. A high marketing margin without corresponding improvement in the marketing sector may imply exploitation of farmers and consumers, while a low margin could indicate a poor marketing system because of insufficient return to the participants.

Table 5.2 shows a rather high net margin for the wholesaler-transporter. However, one can see that one-third (215,000) of his gross return came from hauling passengers with their luggage. It is possible that the budgeted costs of the truck should include a fairly high estimate for risk, since a truck could get stuck or break-down and be out for several extra days. Truck costs from the budget, however, may be compared with alternative methods of transportation:

Trucks cost per trip if owner-operated	5,596.95 ⁶	Zaires
Rented truck at z1,600 per day for 4 days	6,400.00	"
Messagerie Automobile de Sankuru (M.A.S.) rate of z2.00 per ton-kilometer (z2.00 X 625 kilometers X 5.79 tons)	7,237.50	"

In any event, the wholesaler-transporter makes a very good return. Costs of transportation are excessive, but are not likely to lessen unless the

⁶Based on the budget estimate, Appendix Table 1, but increased by 33.3 percent to adjust for inflation.

Table 5.2

MARKETING CHARGES FOR WHOLESALERS, KWILU-KINSHASA, ZAIRE, 1982^a

Item	Wholesalers							Average
	1	2	3	4	5	6	7	
	Zaires							
<u>Expenses</u>								
Registration ^b	14.29	14.29	14.29	14.29	14.29	14.29	14.29	14.29
Truck costs ^c	5,596.95	5,596.95	5,596.95	5,596.95	5,596.95	5,596.95	5,596.95	5,596.95
Labor (salary) ^d	750.00	900.00	800.00	700.00	750.00	800.00	750.00	778.57
Storage	64.05	64.05	64.05	64.05	64.05	64.05	64.05	64.05
Bags ^e	330.00	330.00	330.00	330.00	330.00	330.00	330.00	330.00
Loss	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00
Other	<u>500.00</u>	<u>800.00</u>	<u>600.00</u>	<u>600.00</u>	<u>600.00</u>	<u>600.00</u>	<u>500.00</u>	<u>600.00</u>
Total Expenses	7,855.29	8,305.29	8,005.29	7,905.29	7,955.19	8,005.28	7,855.29	7,983.66
Purchase Price	<u>15,000.00</u>	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00
	22,855.29	13,305.29	13,005.29	22,905.29	22,955.29	13,005.28	22,855.29	22,983.86

Table 5.2 (Cont.)

Item	.....Wholesalers.....							Average
	1	2	3	4	5	6	7	
	.....Zaires.....							
<u>Incomes</u>								
Passengers ^f	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00
Sale price	<u>30,000.00</u>	<u>30,000.00</u>	<u>30,000.00</u>	<u>30,000.00</u>	<u>30,000.00</u>	<u>30,000.00</u>	<u>30,000.00</u>	<u>30,000.00</u>
Total revenue	45,000.00	45,000.00	45,000.00	45,000.00	45,000.00	45,000.00	45,000.00	45,000.00
Net revenue	22,144.71	21,644.71	21,994.71	22,094.71	22,044.71	21,994.72	22,144.71	22,016.14

^aThese data represent the costs and returns for a round-trip of 4 days with a 7-ton vehicle to haul 150 bags of peanuts purchased at 100 Zaires per bag.

^bRegistration cost per trip based on an annual cost of z600 zer year and 42 trips.

^cDetails on truck costs are shown in Appendix I.

^dLabor costs are for one driver, two loaders and one manger.

^eTotal cost of 150 bags was z1,650. Expected useful life was five pound trips per bag.

^fPassengers are assumed to be 40 pers going to Kwilu and ten persons coming back to Kinshasa at 200 Zaires per person. It is assumed that each passenger had two suitcases, or other pieces of luggare, for which he was charged z50 each.

SOURCE: The figures above are the average of the inquiry done on wholesalers. These data are rough estimates because most of these marketing agents do not keep a written record of their business costs. However, the budget estimates were completed after discussion with George Conde, Marketing Economist, with the USAID 070 Team.

country roads are improved or a better system of transportation worked out. It should not cost as much to transport a bag of peanuts from Kwilu to Kinshasa as the farmer gets for the bag--but it does.

The wholesaler-middleman in the Kinshasa market takes a fairly small margin (Table 5.3) but he renders very little service, since he buys in 38.3 kilogram bags--and sells in the same bags and on the same market.

The first level retailer sells in two sizes of basket, 1,089 kilogram and .572 kilogram. According to our sample, she loses money on the larger baskets (Table 4.6) but she makes enough on the smaller baskets to compensate. Of one notes the high variability in the net weight of the large bags at wholesale (29.5 to 46.0 kilograms), one can easily see how the small retailer could make such a mistake. However, it is also possible that our sample size was not sufficient to determine the true mean weight of either the large bags or the large baskets. In any event, this retailer's margins are rather low.

One can see higher margins for retailers who sell roasted peanuts and peanut butter. Of course, the marketing service is large also. The question is, can the low-income customer afford to pay such prices for services he could very well do for himself?

Table 5.3

MARKETING CHARGES FOR MARKET MIDDLEMEN^a, KINSHASA MARKETS, 1982

Item	.....Market.....			Average
	Matete	Gambela	Simba Zikida	
	.....Zaires.....			
Transportation	8.00	10.00	7.50	8.50
Porter	2.00	3.00	3.00	2.67
Storage	2.00	1.50	2.00	1.83
License	.42	.42	.42	.42
Middlemen fare	<u>3.00</u>	<u>3.00</u>	<u>3.00</u>	<u>3.00</u>
Total	15.42	17.92	15.92	16.42
Purchase price	<u>200.00</u>	<u>200.00</u>	<u>200.00</u>	<u>200.00</u>
Total Cost	215.42	217.92	215.92	216.42
Sale price	220.00	220.00	220.00	220.00
Return per bag ^a	4.58	2.08	4.08	3.58
Return per kg	.12	.05	.11	.09

^aCosts and returns are estimated on a bag, which, according to a sample of 15 bags weighed during the study, averaged 38.3 kilograms net, with a tare of 0.3 kilograms for the bag.

Table 5.4

MARKETING CHARGES FOR RETAILERS, PEANUTS IN-SHELL^a, KINSHASA, 1982

Item	Marché Central	Matete	Gambela	Simba Zikida	Average
	.....Zaires.....				
<u>Expenses</u>					
Transportation	10.00	7.50	0.00	10.00	6.90
Economic affair tax	1.00	1.00	1.00	1.00	1.00
Storage	2.00	2.00	1.50	2.00	1.90
Hygiene	.12	.20	.20	.20	.18
Packaging	2.70	2.00	2.50	2.30	2.40
Land rent	1.70	1.70	1.80	1.70	1.72
Porter	4.00	2.00	3.00	3.00	3.00
Retailer fare	<u>3.00</u>	<u>3.00</u>	<u>3.00</u>	<u>3.00</u>	<u>3.00</u>
Total expenses	24.52	19.40	13.00	23.20	20.12
Purchase price	<u>220.00</u>	<u>220.00</u>	<u>220.00</u>	<u>220.00</u>	<u>220.00</u>
Total cost	244.52	239.40	233.00	243.20	240.12
<u>Revenue</u>					
Sale price ^b	248.95	248.95	248.95	248.95	298.95
Net per bag	4.43	9.55	15.95	5.75	8.83
Net per kg	.12	.25	.42	.15	.25

^aRefers to the first level of retail sales only. The 38.3 kilograms bag is broken down into smaller quantities, still in-shell. There are further retail sales of even smaller quantities and further processing: shelling, roasting, grinding into peanut butter.

Table 5.4 (Cont.)

^bSale price average per kilogram = z6.50. This assumes one-third are sold in 1.089 kilogram baskets and two-thirds in .572 kilogram baskets.

CHAPTER VI

MARKETING FUNCTIONS

In modern society, the functions of marketing are to move:

"...the desired varieties of farm and food products to consumers in the needed quantities and conditions at the lowest possible cost,...to make a living for people working in marketing and to yield reasonable returns to the capital and management skills devoted to it, to develop new markets either at home or abroad," (Wells, O. V., 1954).

The first refers to the complex marketing process involved in moving goods from producers, and placing the product that the consumer wants where he wants it. It is a more specialized marketing structure. The second refers to the efficiency and equity in marketing; i.e., marketing must function efficiently and provide satisfactory returns to all participants.

The third refers to the dynamic functions of marketing, which must be flexible enough to develop new and broader outlets. As defined by the National Association of Marketing Teachers, marketing functions, therefore, include all activities involved in the flow of peanuts and related services from Kwilu to Kinshasa (Agnew, 1936). Figure 6.1 shows the functional relationship in agricultural marketing in Kwilu and Kinshasa.

THE EXCHANGE FUNCTIONS

The exchange functions include those activities involved in the transfer of title to goods (Kohls, 1972). Depending upon the channel of distribution

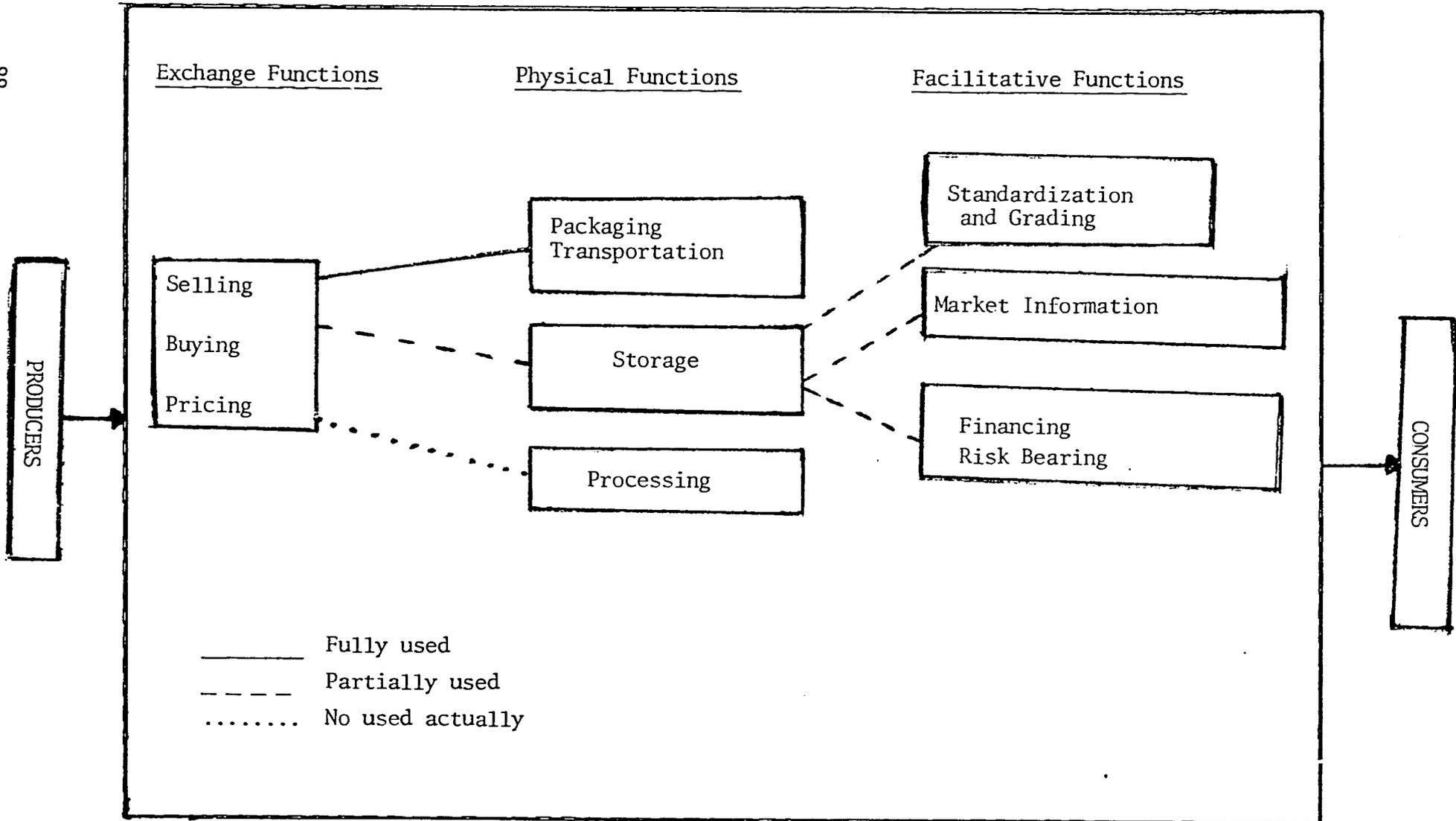


Figure 6.1 MARKETING ACTIVITIES IN KWILU AND KINSHASA

utilized and the development of the marketing system, the exchange may occur one or several times. However, no matter how many times goods are exchanged, one can distinguish three essential functions: (1) selling, (2) buying, and (3) pricing.

Selling function. The goal of selling is to create demand for a particular good and to find buyers at a satisfactory price. Accordingly, selling includes advertising and other promotion activities to influence and expand demand: finding buyers, determination of the proper selling unit, packaging, marketing channel decisions, price determinations, and the actual selling. In Kwilu, all the peanut production activities including the selling (selling times and places) are previously fixed by an official publication, a handbook called "Calendrier Agricole" (Agricultural Schedule). Moreover, the peanut selling campaign takes place officially once a year, around April.

There is only one main crop of peanuts grown per year in Kwilu; however, peanuts remaining in the ground can be sold as harvested. There is another crop, called "Okiel" in the Kiyanzi dialect, grown in the June season. This crop is largely from volunteer plants and is not very large. The peanut growing periods in Kwilu can be summarized as follows:

September: planting of the main season
 January: harvesting of the season
 January: weeding and maintaining young plants for the minor season
 May: harvesting of the minor season

Buying function. Basically, this function concerns the location of the sources of supply, determination of prices, and actual buying. An efficient collection process of buying peanuts from small and scattered

producers is needed for the two following reasons: (1) the rational utilization of the transportation and handling equipment, and (2) reduction of the per unit marketing cost. The transportation of peanuts by every small individual producer to the main market is not only inefficient, but also time wasting.

In Kwilu, each peasant takes his peanuts to the market place on the market day and sells to the wholesaler. The exchange function is very simple in terms of the number of times peanuts are bought and sold. In all of Kikwit, as well as Bandundu, Bulungu, Bagata, Idiofa, Gungu, and Masi-Manimba; farmers carry their peanuts from their houses to the market place where they sell to wholesalers. One can still find farmers carrying bags and on their wives' heads--or by bicycle, however, we observed a certain number of stages in the exchange. Usually, the wholesalers locate the source of supply early before harvesting time by means of their local contact people (friends, relatives or official reports). The marketing times and places are announced and advertised by government officials according to a precise schedule for each zone.

Pricing function. In the process of exchange, both sellers and buyers engage in determining a satisfactory price. Every time the ownership of a good changes, the price has to be decided because pricing is the determination of the market value of a good in terms of money (Walsh, 1954). The pricing function depends upon related functions such as market information, standardization and grading, the quantity of peanuts, the number of buyers, etc. For example, if there appears to be a lot of buyers crowding around on the market day, farmers know there is likely to be a shortage in Kinshasa. If there is no rush or crowd, they know there is likely to

be a surplus. The farmer will know that prices can be adjusted accordingly.

However, the price determination is made rigidly and uniformly by government officials through means of "arretes departementaux" of the ministers of National Economy and Agriculture. These ministries have the role of keeping agricultural prices in line with government targets. However, farmers in Gungu reported that sometimes they set prices but most of the time wholesalers impose the price through means of predatory practices, such as buying by barter; i.e.; one piece of cloth for one bag of peanuts. About 54 percent of the respondents did practice selling by barter in Gungu. However, in general, the farmer prefers to sell his peanuts for cash. Agricultural price determination and price control are regarded to be responsibilities of the government. However, price controls in Zaire have often failed. There is no financial reserve with which to pay farmers if the farm price drops below the farm gate minimum--nor is there any stock of peanuts for consumers if retail price goes above the maximum. Furthermore, there are far too many people involved to monitor retail sales effectively.

THE PHYSICAL FUNCTIONS

The physical functions include the activities involved in the physical flow of peanuts: storage, transportation and processing.

Storage

Storage is an equalization marketing process in which the supply on the market is regulated in order to eliminate the severity of two extreme

situations: gluts and shortages. As a matter of fact, the price fluctuates violently: very low during the periods of glut and very high during times of scarcity. Table 6.1 illustrates this wide fluctuation of prices. The Kinshasa prices, for example, may vary as much as 147 percent from the glut to the shortage time while in Kwilu, prices go up as much as 150 percent. The price varies a bit more in Kwilu than in Kinshasa, perhaps because the market is a bit more competitive in Kwilu than in Kinshasa. The storage function, which provides time utility in the marketing process, operates so as to reduce these price fluctuations. In general, farmers in Kwilu Sub-Region store peanuts at their homes for one or two months as required by official regulations. Farmers have built small bins of about two square meters for their storage of peanuts. These buildings are generally of brick or wood construction.

Transportation

Transportation problems constitute, along with inadequate farm prices, the other major bottleneck to the expansion of the marketing of food crops in general and peanuts in particular. An efficient transportation system must be: (1) adequate with regard to capacity; (2) safe for both products and passengers, (3) timely in delivery to allow for a simultaneous adjustment of supply to demand, and (4) it must be at a low cost commensurate with the services rendered (Ofori, 1973).

Transportation infrastructure (rivers, roads, bridges, ferry-boats, spare parts, fuel, etc.) is a vital ingredient in a viable marketing system. It is vital in the sense that it provides links between producers, marketing agents, and consumers--either for the farm products or for farm inputs. The bad roads not only increase costs by causing delays, they

Table 6.1

PRICE VARIATION DUE TO SUPPLY CHANGES, KINSHASA AND KWILU,
ZAIRE, 1982

Market	A time of shortage August 1982	A time of glut April 1982	Ratio of shortage to glut prices
	.....Zaires per bag.....		percent
Kinshasa	235	160	147
Kwilu	90	60	150

also cause vehicles to depreciate much more rapidly. In Kwilu, the transportation function is very poor, unspecialized, and not organized on a regular basis. A network of paths link farms to the villages, while some unpaved roads link the countryside to the asphalted road.

The following two types of transportation means for the flow of peanuts from Kwilu to Kinshasa exist: transportation by roads and by rivers. The three most important rivers with respect to the length of their navigable channels are the Kwilu, Kwango and the Kasai. Since the primary peanut transportation network is roads, the study of transportation cost will be based on this aspect. Peanut transportation is done in two steps: from the farm to the village and from the village to Kinshasa. Farmers carry their peanuts on foot, by bicycle, or by pirogue to their homes.

Of the respondents interviewed, 85.7 percent transported peanuts on foot. The asphalt road between Kikwit and Kinshasa constitutes a powerful means of transporting farm products for those zones of the Kwilu Sub-Region which it crosses (see map). In the same way, the Kasai and Zaire rivers link Kinshasa and Kwilu through the Kwilu, Zaire and Kwango rivers. Of the seven wholesalers interviewed, none had carried his peanuts by river. The reason might be the number of days one has to spend before he gets to Kinshasa from Kwilu by river. In comparison, wholesalers who operate trucks take two to three round-trips monthly while those who use boats take only one or two trips. However, sometimes wholesalers do use the river network for carrying peanuts to Kinshasa.

In general, farmers carry their peanuts on their backs, on the top of their heads, and by bicycle from the farm to their homes where they store the produce. The vehicles (truck and boat) are primarily used for

transporting peanuts from the village of the farmer to Kinshasa or another part of the sub-region. For certain reasons stated above, we considered only the transportation by road. Wholesalers operate trucks to take peanuts to Kinshasa. Five of the seven wholesalers owned their transportation equipment. The remaining two rented from others. All those vehicles were used by wholesalers for freight hauling as well as for passengers. None of those individuals were big enough or operated on a sufficiently regular basis to control the transportation sector; thus, it might be characterized as having a competitive structure.

The cost of using a vehicle varies considerably from each primary market in the village to Kinshasa as the distance varies. The expenses vary also depending upon the size of the vehicles, the operation, the maintenance schedule used, etc. Some of the major operating expenses are as follows: interest on a loan if any, fuel, and labor. An analysis of transportation charges involves an analysis of both freight service hauling and passenger service, since there is no separate transportation for each. As pointed out earlier, passengers ride with the labor force on top of the truckload of bags of peanuts. The only Zairian transport society (SOTRAZ) carries passengers from Kikwit and adjacent areas in Kinshasa. The amount one pays for the trip as a passenger consists of two charges: (1) for getting into the truck and (2) a freight charge. There are basically two different rates, one for passengers and another for freight. The passenger rate seems to be established and uniform for a given distance. However, the freight rate seems to be decided arbitrarily by the owner of the vehicle. A detailed budget estimate of truck costs is presented in Appendix Table 1.

Depending upon the relationship with the owner (family member, friend or other), the fact that you rent or ride the vehicle, rates may be higher or lower. For example, if you rent a truck, you pay about 1,600 Zaires per day while it will cost 2,000 Zaires per day if the truck owner must furnish a driver.

If one compares the rental cost of a truck with the budgeted cost of owning and operating, one must know how many days the renter will need the truck. A minimum estimate was four days, for which he would pay 6,400. If one uses the Messagerie Automobile de Sankuru (M.A.S.) rate of Z 2.00 per ton-kilometer for the 625 kilometers from Idiofa to Kinshasa, and estimates the 150 bag load to be 5.79 tons, the cost would be: $2 \times 6 \times 625 = Z 7,500$. The truck owner-operators appear to have an economic advantage over other merchants. Calculations show that although the wholesale merchants who haul from Kwilu to Kinshasa incur substantial costs for the service they render, they nevertheless make rather high profit margins (Table 5.2).

Processing

Processing adds to the value of goods by changing their form. Form utility is created by transforming the raw produce to semi-processed or processed produce.

Peanuts are sold under four forms: peanuts in shell, shelled raw, roasted, and as peanut butter. In general, people utilize peanut butter to add oil to their food in cooking, but they do not really separate oil from peanuts. The degree and extent of processing services depend upon the level of income, the preference of the consumers, and the availability of processing plants and equipment. The demand for processed products

increases as consumers' incomes grow because many of the services performed at home are then shifted to the market. To the question, why do you market peanut butter, which involves additional work, instead of peanuts in shell or peanuts roasted; some of the retailers answered that they did it because the consumer prefers peanuts in that form. However, one can see that the value added by processing into peanut butter is rather high (Table 6.2).

Shelling, roasting and skinning add nothing to the money cost of the seller, because these activities are usually performed by the saleswoman retailer while she is selling in the market. Peanut butter is processed by means of a hand grinder, which adds but little to the money cost of processing. Thus, the average profit for the retailer in the Inshasa market varies considerably from one form of peanut to another. The value added column of Table 6.2 shows that retailers are well compensated for further processing, especially for peanut butter. Therefore, peanut butter is the most profitable form of peanuts sold in the Kinshasa markets.

In determining the shell-out percentage of peanuts, a review of literature showed different proportions of shelled, edible nuts in comparison to the in-shell weight. M. Abeelee and R. Vandenput (1956) estimated that peanuts yielded roughly 60 to 75 percent of edible shelled nuts. The Texas Agricultural Experiment Station (1975) estimated that the proportion is 58 percent. D. H. Carley (1978) in his study of the Supply, Price, Value and Disposition of Peanuts showed that the shell-out of Spanish peanuts was near of above 60 percent, while runner peanuts ranged between 50 and 60 percent. The average shell-out of edible peanuts used in the sample of this study (1982) yielded roughly 76 percent of shelled nuts

Table 6.2

RELATIONSHIP OF PRICE TO THE NATURE OF PEANUT PRODUCT, ZAIRE, 1982

Item	Quantity	Price	Unit Price ^a	Value Added ^b
	kilograms	Zaire	Zaires/kg	Zaires
Peanuts in shell (bag) ^c	38.300	200.00	7.46	---
Peanuts in shell (bag) ^c	38.300	220.00	8.21	.75
Peanuts in shell (basket)	1.089	6.00	7.87	(-.34)
Peanuts in shell (cup)	.572	4.00	9.99	1.78
Peanuts with skin (cup) not roasted	.369	4.00	10.84	.85
Peanuts with skin (cup) roasted	.34	.50	14.71	3.87
Peanut butter	.019	.50	26.32	11.6,

^aPrice of peanuts in shell converted to shelled weight by use of shell-out percentage of 70 percent.

^bIncrease in price per kilogram over preceding form due either to smaller sales unit or additional processing.

^cThe first is the price at the farm; the second is the sale in the same bags by market middlemen to retailers.

and 24 percent hulls; however, these peanuts appeared to be more than ordinarily dry. The proportion of shell-out of edible peanuts varies according to numerous factors, such as type, variety, land fertility, cultural practices, storage facilities, and weather.

The Bureau d'Etudes and Planification (Kinshasa, Zaire) in Situation Actuelle de l'Agriculture Zairoise, September 1982 report, page 91, showed the Department of Agriculture's annual estimates from 1970 to 1980 of nuts in-shell and shelled. Shelled nuts averaged 70 percent of the weight of in-shell nuts. This study will consider an average of 70 percent as the proportion of edible peanuts, with 30 percent for the hull weight.

Many factors may be responsible for the upward influence on prices from the peanuts in-shell to peanuts shelled and roasted--and finally to peanut butter. *Ceteris paribus*, price increases should be in line with the additional service performed--shelling out, roasting, skinning, and processing into peanut butter.

Shelling, roasting and skinning add no money cost to the seller because these activities are performed by the saleswoman retailer while she is idle in the market. However, peanut butter is processed by use of a hand grinder which adds the ownership costs of the grinder. The grinder for making peanut butter costs from 1,500 to 2,500 Zaires; depending on the size. Since these machines are rather sturdy, ownership costs per kilogram of peanut butter would be very small, possibly not more than 1.40 Zaires. However, one has to pay 5.00 Zaires to have the peanut butter ground on a hand grinder.

The unit price column of Table 6.3 is not actually a true unit price, since not only the size of the sales unit varies, but also the form of

Table 6.3

WEIGHT VARIABILITY OF UNITS OF SALE USED IN THE KWILU AND KINSHASA
MARKETS, ZAIRE, 1982

Form of Product	Unit of Measure	Mean Weight	Standard Deviation	C.V.
		.....kilograms.....		percent
Peanuts in-shell	large bags	38.3000	3.5000	9.1
Peanuts in-shell	basket	1.089	.0138	1.3
Peanuts in-shell	cup	.572	.0278	4.9
Peanuts with skin not roasted	cup	.369	.0040	1.1
Peanuts with skin roasted	cup	.025	.0007	2.8
Peanut butter	Spoon	.116	.0005	4.3

the product. The first four items (peanuts by the 38.3 kilogram bag, by the 1.09 kilogram cup and by the .572 kilogram cup) show the effect of size of sales unit only. All other items show the effect of both a higher degree of processing and progressively smaller packages--winding up at the bottom of the table with peanut butter sold in very small patties, .019 kilogram, which is approximately two-thirds of an ounce. Peanut butter appears to be the most profitable form of peanuts sold in the Kinshasa markets.

The lack of scales has resulted in a great deal of variability in the weight of bags of peanuts as sold at the farm gate--and at the middleman level. In 1975, in order to standardize weights and measures, the Mayor of Kinshasa introduced a set of cups (called by the Mayor's name, Sakombi) in different styles and capacities. Perhaps this explains the much greater variability of the big sacks sold at the farm and by the first level middlemen--in comparison to the variability in weights at retail (Table 6.3). Actually, the lack of respect for that policy has resulted in a wide diversity in the "standard" units of measure--which are no longer uniform among retailers or among the four main markets of Kinshasa. Mayor Sakombi, nevertheless, had an excellent idea for promoting the standardization of the unit of measure, since the cost of good scales for weighing would be prohibitive for many of the very small scale retailers. In observing the practices of the women who retail peanuts in the markets, the use of a standard size of can, cup or bucket would not assure uniformity in the scales unit; because of the practice of heaping peanuts on the measuring vessel. It appeared that the friendlier the relationship with the customer, the higher the stack would go. In order to make the standard

volume vessel a means of standardizing the unit of sale, one would also have to require a standard practice of striking off to a level-full basis.

THE FACILITATIVE FUNCTIONS

Facilitative functions include all those activities that assist in the smooth flow of goods from the producer to the consumer. The facilitative functions involve activities such as standardization, grading, packaging, labeling, financing, risk bearing, etc. The use of uniform standards of measurement of weight or quality, packaging, labeling, grading, etc. facilitate exchange, since buyers and sellers can determine prices without engaging in inspection and checking the value of each good at every stage.

Bulk merchandising and efficient marketing depend largely on standardized goods. In Kwilu, farmers do not weigh any part of peanuts they sell. Wholesalers have to bring their own bags and have them filled by producers. So far as packaging is concerned, virtually all farmers sell no loose quantities. In case of sorting and grading, the general tendency is that farmers do sort out the peanuts before selling by eliminating the soil, and the poorest quality of nuts. The remaining better quality is then packaged and sold. No further grading or sorting is done by the wholesaler in the marketing chain. At the retail level, sales are in very small quantities-- which makes for easy sorting.

Financing

Financing is the advancing of money to the farmer, or to others, to carry out various aspects of the marketing activities. Many financial

institutions exist in Zaire (SOFIDE,⁷ Banks, Department of Agriculture Projects, etc.) but few of them provide credit to farmers to facilitate the production and marketing activities. Since anywhere that production or marketing activities collapse, someone must finance the holding costs, the peanut marketing in Kwilu suffers from a lack of financing. None of the farmers interviewed had obtained any agricultural credit. Some wholesalers had obtained vehicles as a grant from the Japanese Government. This appeared to be truly a grant, since we were unable to obtain any indication of either a repayment schedule or interest rate.

Selling on credit was a commonly accepted practice among market middlemen and wholesalers. Of wholesalers interviewed, 14.3 percent sold on credit, 57.1 percent sold for cash only and the remainder, 28.6 percent, sold both for cash and credit.

Risk Bearing

Risk bearing constitutes one of the important agricultural marketing functions, since it includes both physical and market risks. Market risks are those which arise from price fluctuations and therefore, it is difficult to control and/or forecast them. The physical risks are those due to spoilage, loss, theft, damage by fire, etc. However, this study did not experience any of the above damages on a large scale during the period of this study. What happened more often was that a truck broke-down and the equipment spent one or two weeks on a trip instead of the usual four days for the round-trip. In the Kwilu marketing system, the risk bearing function is largely passed on to consumers in the Kinshasa market, since

⁷SOFIDE: Societe de Financement en Developpement.

the market price in Kinshasa is high enough to allow wholesalers to recover their principal and interest.

Market Information

An efficient market information system about supply and demand is extremely important in determining how the retail price is set. The peanut marketing system in Kwilu and Kinshasa does not have a formal information system. Most of the information flows by word of mouth from neighbors, relatives, and friends. In the survey, farmers were asked whether they obtained price information or not. Only about 18 percent reported that they did not obtain any retail price information, five in Masi-Manimba, three in Idiofa and Gungu, and one in Bagata. This is likely due to the influence of their age and level of education. None of the retailers interviewed knew the right farm price. However, the majority estimated that the farm gate price was as low as half of the Kinshasa market price (100 to 110 Zaires per bag) which was correct. However, none of the retailers appeared to know anything about the supply.

There exist two types of prices for peanuts, the official and the black market. The official price is fixed by government and told to farmers through Monagris (Agricultural Extension Agents) and village chiefs during the popular meeting. The black market price is made according to the law of supply and demand and told from mouth to mouth. The price taken in consideration within this study is the market price. The reason is that the official price is not adhered to at the retail level. In addition, the regional radio station broadcasts on a one-hour daily program, information related to fertilizer, diseases, production techniques, and the importance of agriculture for the well-being of the people. Some of

these programs include also interviews with agricultural officials and the answers to farmers' questions. However, since market prices are illegal, these programs do not give market price information.

Farmers are aware of black market prices practiced in Kinshasa, but wholesalers reject farmers' prices and consider only the official prices--which are very low. Farmers also do not receive the right price for many reasons; for example, the economic pressures that may cause them to have to sell most of their peanuts at harvest time, so that the price they receive is much lower than the average through the year. In Bagata, for instance, the immediate post harvest price of a bag of peanuts in-shell was only 80 Zaires, while later on, the same amount sold for 120 Zaires.

CHAPTER VII

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

We are in an era of extreme changes that will pose difficult problems for those who deal with food-related problems: food industry managers and government officials alike. These two groups of policymakers will have to make decisions in the context of what may prove to be an entirely new food marketing system. If there are substantial gaps in our knowledge about the present system and possible alternatives, or about our interactions with energy availability and other delimiting factors, then policy decisions about food marketing cannot be made on a rational basis.

This chapter presents a summary of the findings of this study and outlines the policy alternatives and implications in order to make the existing marketing system in Bandundu and Kinshasa Regions effective enough to meet the current, as well as future, needs of all marketing participants.

The marketing system is the primary mechanism through which the production, marketing, and consumption of goods and services are coordinated. As a traditional agricultural society is transforming into a market oriented or urban society, marketing processes take on increasing importance. This importance arises from the fact that increasingly large proportions of the population reside in urban areas, thereby generating increases in the need for larger quantities of food. If incomes increase, or when incomes increase, there will also be increases in demand for food in the cities.

Most of agricultural products are raw materials for conversion into some other products. Because of the fact that in general, agriculture is practiced in rural areas and consumers are in urban areas, the marketing system of a product differs widely depending on whether the buyers want to protect their supply position or to control only the handling and moving of products through the marketing system.

Agricultural production is highly seasonal. This is largely because of the weather and its effect on production. In contrast to the seasonal nature of production, there is a fairly constant demand throughout the year for animal and human food. The marketing channel, then, should contain the facilities for huge amounts of seasonal storage. These stocks are of paramount importance if there is to be any stability of supplies of food to compensate for the highly variable and unpredictable nature of production from season to season. Also, when agriculture becomes more specialized and modernized, the flow of industrial-based inputs from cities to farm areas must also increase. In short, interdependence between the farm and the non-farm sectors of the economy will increase. This will require effective, highly organized channels for storage, transportation, and processing for the marketing of farm products--as well as for the distribution of factors of production. Thus, marketing includes such economic functions as exchange activities for the transfer of property rights, the physical handling and transformation of peanuts, and the institutional arrangements known as facilitative functions.

An evaluation or assessment of peanut marketing in Kwilu basically involves identification of the principal areas from the viewpoint of the system in achieving its purpose--and in determining what the existing

system has, or does, that should be changed.

SUMMARY AND CONCLUSIONS

Primary data were collected through the use of a short interview questionnaire administered to a random sample of 67 farmers; seven wholesalers, 24 market middlemen, and 27 retailers. In all, the study was conducted in January and February of 1982--with a final phase completed in August of 1982.

In contrast of a more complex society in which there is a great deal of specialization in marketing, both as to crops handled and services performed; peanut marketing patterns in Kwilu are relatively simple, unspecialized, characteristically rudimentary--and with small volumes exchanged per transaction. Generally, such services as selling, buying, pricing, packaging, transportation, storage, processing, market information, standardization and grading are available--although not always at the exact time and place or in the form desired.

As a by-product of the small farmer survey, limited information is available on farmer peanut sales. They have only meager information on prices and market conditions. Often, one country merchant or an itinerant trucker is their sole outlet, and may also be the only source of information on prices and supply. Development of a reliable source of market information for retailers on the Kinshasa market is also needed. The government might use the same means or media for both farmers and marketers--radio and official reports.

Often, the official price for peanuts was rather uniform at all buying points throughout the Kwilu Sub-Region. For a commodity which must

all be marketed in a certain market in Kinshasa, this price uniformity may be detrimental to production and marketing efficiency. Unless there are special considerations, such as the need to give special assistance to production development in particular areas, official prices at various buying points should reflect costs of transportation to market by the most direct route. Price differentials, then, give an appropriate incentive to peanut development in areas nearer to the market.

One of the important processes in an efficient marketing system is the collection of produce to an assembly point from small and scattered farmers for a rational utilization of transportation and handling equipment and reduction of the per unit cost of marketing. The buying trip through every village is not only inefficient, but results in misallocation of valuable time. One hundred percent of the respondents indicated that they do not carry their peanuts to any collection point. Instead, each farmer takes his peanuts to the market place and sells to wholesalers whenever he chooses. Wholesalers could encourage the build-up of an assembly time and point, rather than wait on farmers' initiative.

Generally, financial institutions in any developing country's economy play a very insignificant role when it comes to small-farmer agriculture. In contrast to profitable industrial business loans, an agricultural credit system is regarded as unprofitable--and risky. Loans to subsistence farmers tie-up funds for a long time, generally with no security of repayment.

The Kwilu agricultural marketing system suffers from lack of financing. Most of the banks finance only large agri-businesses and do not provide any small farm credit. In fact, most of the financial institutions

refer the applicants to the Department of Agriculture. With the creation of the Agricultural Credit Bank since October 1982, the problem of lack of credit for small farmers may find a satisfactory solution since the bank pertains to the Department of Agriculture. However, many of the agribusinessmen who borrow do not willingly pay back their loans. They fail to pay back the loan partially because they prevail in their claim of being the authority in power. The marketing system in Kwilu and Kinshasa remains traditional, partly because of lack of capital needed to improve the system.

The principal characteristic of the peanut marketing system in Kwilu and Kinshasa is that there are generally three intermediaries between the producer and the final consumer: wholesalers, market middlemen and retailers. Muziol (1976) reported that, for all food products, there is an average of 2.1 middlemen between the producer and the final consumer. Ongola (1978) reported also that, this average varies from a low of 1.9 middlemen for potatoes to 2.3 for palm oil in Younde and adjacent areas in Cameroun.

Only in rare cases does a producer sell his produce directly to his ultimate consumer. It would be a tremendous and probably unwise undertaking for each farmer, for instance, to produce and market each form of his peanuts directly to the 3.0 million consumer units that are his potential customers in Kinshasa. However, consumers in the Kinshasa market would be better-off if they could buy directly from the wholesaler--rather than have a whole string of specialized retailers, one for each type of peanut product sold. It might be economic for the farmer to sell his peanuts directly to the wholesaler and for the retailer to buy directly from the wholesaler--but surely, one retailer could sell each of the

different forms and sizes of peanut products to the consumers. It would be better, still, for low-income families to buy peanuts in-shell and do their own shelling, roasting--and make their own peanut butter.

Although the margin taken by the wholesaler who transports from Kwilu to Kinshasa was high, his costs were also quite high, due to the bad condition of roads from Kikwit to the outlying production areas. This causes rapid depreciation of trucks, perhaps even greater than was estimated in the budget, Appendix Table 1. Even with high costs, his margins appeared to be too high. In part, this was due to an inefficient transportation system. The next level of middleman had relatively low margins, but rendered very little service. They bought peanuts in 38.6 kilogram bags--and sold to retailers in the same bags. The next level of middleman, who break the 38.3 kilogram bag down into baskets of 1.080 kilograms or cups of .578 kilograms, had charges for their services not too far out of line with costs and with the service rendered. The retailers appeared to operate at too small a scale and there were too many of them. Here is where the price to consumers becomes unreasonably high--especially to the many low-income consumers. The low-income consumers would fare much better in the peanut market if they bought in no other form than the 1.089 kilogram baskets--or even in the 38.6 kilogram bags. They can ill-afford to pay the exorbitant charges for shelling, roasting, making peanut butter--and selling in the tiny sales units.

The transportation system in Kwilu is very poor, unspecialized, and not organized on a regular basis. It is good for hauling both passengers and freight. The establishment of programs by local authority giving priorities to the maintenance, and if possible, to the construction of

main and feeder roads to link farms and the asphalted road become urgent. A regular program of "salongo" (collective road maintenance) by peasants supported by the Office de Routes (National Roads Office) which owns the equipment resources would help keep feeder roads in better shape. Some transporting vehicles are available but they cannot operate rapidly due to the bad condition of the roads, and this increases the cost to both producers and consumers. As the flow of peanuts expands, there will also be a need for storage facilities since excessive price fluctuations exist from the glut to the shortage time. It becomes important to establish adequate storage facilities, one near each of the four main markets in Kinshasa, and others in the production areas. The latter could also be used as assembly or collection points.

Marketing processes are intimately linked with factors related to the cultural and social make-up of market participants. Thus, marketing processes can play a very important role in the development process because it involves not only the economic factors in a particular society; but also all cultural, social and political problems.

As pointed out earlier, market processes are not limited to economic factors; social processes also play a vital role in the development of the marketing system. Slater et al (1969), using considerations such as literacy, innovativeness, mass media, etc.; showed that it is important to take into account the perceptions and predispositions of market participants. At the same time, environmental conditions must be objectively appraised and adjusted to the view of market participants. About 67.2 percent of the farmers surveyed attended school. This level of education, combined with their long experience in farming (an average of 30

years) could help farmers improve their cultural practices and thus, increase their production of peanuts. A recent study of traditional agriculture (Raymond, 1965) concluded that the subsistence farmer lacks a formal education, but by no means is unintelligent; he is a cautious operator whose activities conform to age-old practices. He has, on a trial-and-error basis, devised a system of agriculture valid for his cultural equipment in his physical milieu by planting the right crop at the right time and place.

However, the lack of government policy for peanut growing and an inadequate supply to the small farmer of agricultural inputs (fertilizers, pesticides, tools, improved seed, etc.) does not allow producers to exploit on a rational basis their know-how. The government could encourage small farmers to initiate the organization of some cooperatives through which the producers might purchase their inputs.

To the question, "What are the constraints in peanut production and marketing?" farmers named many problems. The seven major factors they cited are the following:

1. Lack of improved seed.
2. Impoverishment of the land.
3. Being disrespectful of ancestral beliefs.
4. Sickness.
5. Lack of agricultural equipment.
6. Lack of good relationship among peasants as well as among villagers.
7. Lack of visits by agricultural technicians to the villages.

These problems can be put into two groups: some strictly agricultural and others strictly social.

Both the favorable climate and the rich soil of Kwilu would strongly favor intensive peanut production; however, cultural techniques have remained traditional with the use of simple tools (hoes, machetes, and coupe-coupes). There is a shifting agriculture. Since soil fertility is not compensated by the use of compost or fertilizer, soil structures and fertility are endangered. Keeping in mind the difficulty of the government to provide producers with fertilizer, farmers practice shifting cultivation to avoid further exhaustion of the fertility of the land. Fallowing is probably the oldest method of maintaining soil fertility.

Farmers must keep peanuts for seed for the next planting season. Three compulsory bags of peanuts in-shell for a .72 hectare farm may be more than enough for that size and smaller farms; however, the farmer generally utilizes a part of this for food for his family, relatives and friends. Although the government has aimed to provide peanut farmers with improved seed, it has not been able to do so. Therefore, farmers may need to organize cooperatives to obtain improved seed and other inputs. It is important to renew the seed because in spite of all favorable conditions (soil, climate, compost or fertilizer, equipment and labor), peanut yields will be low and decreasing if the seed are not renewed on a continuing basis.

In Zaire, actually there is no governmental agency which provides farmers with improved or renewed peanut seed. The National Institute for Agronomic Research (INERA) initially created for that purpose was unable to accomplish this role because of lack of resources. However, the Institute still has some personnel who can go to visit farmers and provide them with some good technical advice about peanut production. The government

may do the same through its agencies scattered all over the country. Part of the necessary efforts to encourage better work on peanut production and marketing is the encouragement of all the components of the agricultural system.

The health situation in the sub-region of Kwilu was quite bad with intestinal infections, malaria, and sleeping sickness widespread--also measles, especially during the hotter months. However, the situation has been improved recently by a medical program which received support from the World Health Organization (WHO). A drop in infant mortality which has followed the development of preventive medicine and popular health education in the villages is another program with beneficial effect.

Malnutrition is seen frequently. The use of more peanuts could effect deficiencies in protein of the main food crops (manioc and plantain). The peanut contains 40 to 50 percent oil and about 30 percent protein (Marcel Van Den Abeele and Rene Vandenput, 1956). The general environmental conditions of hygiene and sanitation needs to be improved (clothes, water, etc.).

Unfortunately, farmers explain their problems (sickness, low crop yields, and exhaustion of the fertility of their land) as being the result of being disrespectful of ancestral beliefs. A re-education of farmers appears important. They believe that only the land head, in consultation with the spirits of the earth (dead), would solve their problems.

In order for any constructive effort to take place, the head of the village has to favor certain work in common, such as collective road repair, building schools in the village, dispensaries--for the purpose of improving life in the village. Interethnic or village relationships need

to be good. A shared history in the area, transportation means, and many intermarriages help to improve this sort of friendly relationship among the neighboring villages.

In the final analysis, the development of the agricultural sector in Kwilu in general and the peanut production and marketing sector in particular would be the main source to generate capital to improve the farmers' standard of living. In fact, agricultural development has to be emphasized to improve the welfare of the majority of peasants because Kwilu does not have any of the basic natural resources for other industries.

RECOMMENDATIONS

In order to insure the rapid development of agriculture in general and the peanut industry in particular, and an effective marketing system in the Bandundu and Kinshasa Regions, certain recommendations can be made:

1. The Department of Agriculture should conceive and implement programs of research and extension on peanut production and marketing. The government policy in that matter has not, so far, resulted in any guidance or assistance to peanut farmers. This has resulted to a misallocation of valuable scarce resources available in the country. There is insufficient investment in agricultural research and extension services. The government has to provide adequate funds for agricultural experimentation and extension services to research and disseminate the findings about improved seeds, use of fertilizers and pesticides, better farming practices such as intercropping peanuts with manioc, efficient marketing channels, preservation techniques (sealed jars of peanut

- butter) and alternative uses of the peanuts (fuel). A simple extension program could result in substantial improvements in both production and marketing.
2. Generally, farmers resist change and keep on doing what they have been doing for years, regardless of the results; unless they see immediate and tangible benefits. Thus, extension service personnel have to work hard in order to disseminate research findings to farmers effectively. From this point of view, rather than making considerable efforts to tell farmers how to do this or that, the effort must be turned also towards learning what peasant farmers do--and why they do things the way they do. As reported in this study for intercropping, peasant farmers are not always wrong.
 3. It would probably be economical for consumers to buy raw peanuts in-shell, in the large 30 to 46 kilogram bags, and to do for themselves all the transformations--including the making of peanut butter. If a family cannot afford an entire bag, perhaps three or four families might pool their resources and divide it among themselves, or buy the 1,089 kilogram baskets of peanuts in-shell to avoid high cost of services they can ill-afford. They might also form consumer cooperatives to buy at low prices--and possibly to process peanut butter.
 4. Some consideration should be given to teaching consumers and farmers how to transform raw peanuts under conditions that permit their preservation. If the process is adequately sanitary, roasted and ground peanuts made into peanut butter may be kept in

well-filled, hermetically sealed jars for a year or longer--with no additives for preservation. Peanut butter can be kept for a longer time without spoiling than any of the other forms of peanuts--which makes larger size purchases by consumers a feasible economy for families that can buy a whole 38.3 kilogram bag, or a large part of a bag.

5. Attempts should be made by government to encourage and assist private commercial firms to enter into peanut production and marketing. This could be done in part by adequate credit for vehicles and in part by good maintenance of roads, especially in rural areas. Due to the bad road conditions, the lack of gasoline and spare parts, the transportation cost is very high. This situation may decrease competition at the farm gate to the point of being completely monopsonistic. This sole wholesaler may maintain the government fixed price since he has no competitor--and has no reason to increase his buying price. Greater competition would probably reduce wholesale margins. Although this study did not observe truly excessive wholesale margins, it did observe only great opportunities for wholesalers to improve their operating efficiency.
6. There is a need to standardize the unit (sack, cup, basket, glass, spoon) used to measure by volume so that consumers may know exactly how much they are getting. Concern for this standardization was underlined by the wide variability among containers used for measurement; and sometimes with a particular type of container, such as sacks, the variability in weight was excessive.

Note should be taken, however, that standardized cups, baskets or buckets will not do the job unless there is also a standard method of filling and of striking level with the brim of the vessel.

7. The government should help slow down the exodus of the farm labor force to the city. This can be achieved by improving the level of living in rural areas. For instance, there should be built in the villages, stores where farmers can go to purchase goods (clothes, tools, fertilizers, pesticides, guns, radios, guitars, salt, soap, cameras, bicycles, etc.). Peasant farmers will have more incentive to produce for the market--in proportion to the increased availability of attractive consumer goods. The migration of farm people to the city could at least be slowed down by raising the level of living in the country.
8. The government should liberalize prices, both at the farm level and at retail. Government has no reserve fund to support prices if they drop below the government's legal minimum. Furthermore, there is evidence that buyers convince some farmers the minimum price is the legal price. Having such a situation hinders obtaining accurate data on the actual level of farm prices because farmers fear they have broken the law when they sell above the government minimum, and the government legal minimum is often too low to be a good incentive to farmers. Violations of the retail maximum price are practically universal because there are too many retailers for enforcement to be effective.
9. Researchers need to place much more emphasis on marketing in relation to time spent on farm production. A much greater percent

of the consumers' Zaires spent for peanuts goes for marketing than for farm production. Furthermore, the higher the marketing costs, the lower will be the farm price, other things equal. No amount of improvement in the efficiency of farm production will counteract a farm price that is too low.

RECOMMENDATIONS FOR FURTHER RESEARCH

1. Research is needed into the markets for peanut oil and peanut cake, both internal and export markets. Unlike many developing countries, Zaire has an abundance of unused agricultural land. Thus, the effect of exporting peanut oil and cake, or of using peanut cake for livestock feed, does not mean taking food away from already malnourished people. The additional economic enterprise could mean higher per capita income. Lack of jobs is a major factor in malnutrition--not a shortage of land.
2. The use of seven ton, and heavier, trucks to assemble peanuts from the back-country farming areas is very hard use for these expensive trucks, and must also hasten the destruction of country bridges and unpaved roadbeds. It might be possible to transport from farms to assembly centers on the paved road in lighter vehicles, better suited to the weak bridges and fragile roadbeds; reserving the big trucks for the long haul from Kikwit to Kinshasa. It would be feasible, with a driver and assistant, to make the Kinshasa/Kikwit round-trip in 24 hours, if the peanuts were ready to be loaded upon arrival. With two teams of drivers, it would be possible to make four to six round-trips-- Kinshasa

to Kikwit, per week.

3. Food science research is needed into methods and costs of small-scale commercial and home processing of peanuts into peanut butter, mainly as a means of having peanuts available throughout the year. Properly made, peanut butter will keep in sealed jars for a year or longer with no additives for preservation. This study might also look into the identification and prevention of aflatoxins.
4. Research might be undertaken into the feasibility of using peanut and soybean cake as a means for enriching other flours or meals in protein. There is considerable literature on this subject, but little has been done here. The principal problems would be acceptability of the product--and determining the costs and procedures for processing.
5. As mentioned in this study, peanut oil has been successfully used as a diesel fuel. In view of the high cost of gasoline and diesel fuel in Zaire, and of the frequency of deficits of both, studies might be made of the feasibility of vegetable oils as motor fuels. A basic study is not so much needed as a review of progress in this area throughout the world. As reported in this study, peanut oil has been successfully used for diesel fuel already--and without further refinement.

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Appendix Table A. POPULATION OF ZAIRE, KINSHASA AND BANDUNDU, 1970-1980

Year	Zaire	Kinshasa	Bandundu		
			Total	Agriculture	Non-Agriculture
.....millions of people.....					
1970	21.6	1.11	2.60	2.14	.46
1971	22.2	1.21	<u>a/</u>	<u>a/</u>	<u>a/</u>
1972	22.7	1.31	<u>a/</u>	<u>a/</u>	<u>a/</u>
1973	23.3	1.43	<u>a/</u>	<u>a/</u>	<u>a/</u>
1974	23.9	1.54	<u>a/</u>	<u>a/</u>	<u>a/</u>
1975	24.4	1.63	<u>a/</u>	<u>a/</u>	<u>a/</u>
1976	25.1	1.80	<u>a/</u>	<u>a/</u>	<u>a/</u>
1977	25.8	1.94	<u>a/</u>	<u>a/</u>	<u>a/</u>
1978	26.4	2.09	<u>a/</u>	<u>a/</u>	<u>a/</u>
1979	27.5	2.24	<u>a/</u>	<u>a/</u>	<u>a/</u>
1980	28.3	2.41	3.49	2.64	.85
Rate of increase ^{b/}	2.7	8.1	3.0	2.1	6.3

a/ Intervening years not available.

b/ A compound rate which would account for the change between 1970 and 1980.

SOURCE: Zaire population, FAO Computer Tape or Trade Yearbook, FAO, Rome, 1982; Kinshasa population, Mbumba Ngimbi, Kinshasa 1881-1981, Centre de Recherches Pedagogiques, Kinshasa, 1982; Bandundu population, Division d'Etudes et de Planification, Bureau de Planification Agricole, Situation Actuelle de l'Agriculture Zairoise, Projet 660-070, USAID; Kinshasa, Zaire, September 1982.

Appendix Table B. PEANUT PRODUCTION AND YIELD, ZAIRE, 1970-1980

Year	Production in Shell	Area Planted	Yield
	1,000 tons	1,000 hectares	kg per ha
1970	267	384	690
1971	278	392	710
1972	282	397	710
1973	299	405	720
1974	303	419	720
1975	308	432	710
1976	315	445	710
1977	319	453	700
1978	306	456	670
1979	334	460	720
1980	339	465	730
Compound rate of increase per year	2.4	1.9	0.5

SOURCE: Situation Actuelle de l'Agriculture Zairoise, Division d'Etudes et Programmation, Projet 660-070 USAID, Kinshasa, Zaire, September 1982.

Appendix Table C. ACTUAL AND DEFLATED RETAIL PRICES OF PEANUTS,
1978-1982, KINSHASA, ZAIRE

Year	Actual retail price peanuts	CPI Kinshasa 1982 = 100	Deflated retail price peanuts
	Zaires/kg		Zaires/kg
1978	4.57	19.1	23.93
1979	7.32	37.8	19.37
1980	7.66	55.7	13.75
1981	9.50	75.0	12.67
1982	13.53	100.0	13.53

Appendix Table D. NOMINAL AND REAL SALARIES OF BOTH THE PUBLIC
AND PRIVATE SECTORS OF ZAIRE, 1975-1980

Year	Private Sector		Public Sector	
	Nominal	Real	Nominal	Real
1975	100.0	100.0	100.0	100.0
1976	131.4	76.9	127.9	74.8
1977	159.5	57.2	133.4	47.8
1978	206.5	49.3	155.7	37.2
1979	277.3	30.1	320.3	34.8
1980	378.3	28.0	371.5	27.5

SOURCE: Banque du Zaire, Rapport Annuel, 1980, page 104, Tableau 42.

Appendix Table E. PEANUT PRODUCTION IN ZAIRE BY REGIONS, 1970 to 1980

Region	Average 1970-1975	1976	1977	1978	1979	1980	Average 1976-1980	Percent of Zaire's Production 1976-1980
	.....1,000 metric tons.....							percent
Bandundu	62.3	65.8	70.5	72.4	76.1	84.6	74.0	22.7
Haut-Zaire	34.2	44.3	47.2	48.6	46.9	40.0	45.4	13.9
Shaba	33.6	39.0	31.8	33.1	35.4	37.3	35.3	10.8
Bas-Zaire	39.3	39.9	39.3	17.2	37.6	39.8	34.8	10.7
Kasai Occidental	29.8	31.0	29.6	30.8	32.7	38.8	32.6	10.0
Equateur	29.4	32.2	34.9	36.0	34.3	30.5	33.6	10.3
Kivu	33.4	37.4	37.9	38.9	43.6	67.1	45.0	13.8
Kasai Oriental	24.3	26.2	28.3	29.6	24.1	19.5	25.5	7.8
Total	291.3	315.8	319.5	306.6	330.7	357.6	326.0	100.0

SOURCE: Division des Statistiques Agricoles, Department de l'Agriculture du Zaire, 1970 to 1980.

Appendix Table F. PEANUT PRODUCTION AREA BY REGION, ZAIRE, 1970-1980^{a/}

Region	Average 1970-1980	1976	1977	1978	1979	1980	Average 1976-1980	Percent of Zaire's total production area: 1976-1980
	.....1,000 hectares.....							percent
Bandundu	78.3	85.4	88.1	90.2	94.3	107.0	93.0	20.1
Haut-Zaire	63.5	69.3	70.5	72.1	71.6	64.3	69.5	15.0
Shaba	54.5	59.1	58.6	54.4	65.4	61.5	58.0	12.5
Bas-Zaire	47.3	51.2	52.4	52.3	51.7	48.2	51.2	11.0
Kasai Occidental	46.0	51.7	52.0	51.8	54.2	60.7	54.1	11.7
Equateur	43.4	48.0	49.1	50.8	49.8	45.5	48.6	10.5
Kivu	39.2	42.5	43.1	45.2	57.4	78.9	53.4	11.5
Kasai Oriental	35.2	38.0	39.3	39.7	33.6	28.6	35.8	7.7
Total	408.4	445.2	453.1	456.6	469.0	494.7	463.7	100.0

^{a/} Peanuts are also sown in the Kinshasa Region, but statistical information was not available for that small region.

SOURCE: Division des Statistiques Agricoles, Department de l'Agriculture du Zaire, 1970-1980.

Appendix Table G. PEANUT YIELD BY REGION, ZAIRE, 1970-1980

Region	Average 1970-1975	1976	1977	1978	1979	1980	Average 1976-1980	Percent of country average 1976-1980
	.....metric tons per hectare.....							percent
Bandundu	.80	.71	.80	.80	.81	.79	.79	112.9
Haut-Zaire	.62	.64	.67	.67	.65	.62	.65	92.1
Shaba	.62	.66	.54	.61	.63	.61	.61	87.1
Bas-Zaire	.82	.78	.75	.33	.73	.82	.68	97.1
Kasai Occidental	.63	.60	.57	.59	.60	.53	.69	85.7
Equateur	.68	.67	.71	.79	.69	.67	.69	98.6
Kivu	.85	.88	.88	.86	.76	.85	.84	120.0
Kasai Oriental	.69	.69	.72	.75	.72	.68	.71	101.4
Average	.71	.71	.70	.67	.67	.72	.70	100.0

SOURCE: Division des Statistiques Agricoles, Department de l'Agriculture du Zaire, 1970 to 1980.

Appendix H. PEANUT PRODUCTION, AREA AND YIELD BY SUB-REGION FOR THE REGION OF BANDUNDU, ZAIRE, 1977-1980

Sub-Region	1977	1978	1979	1980	Average 1977-1980	Percent
.....Production in 1,000 tons.....						
Kwilu	59.0	60.6	63.7	70.8	63.5	83.6
Kwango	8.2	8.4	8.8	9.8	8.8	11.6
Maindombe	<u>3.3</u>	<u>3.4</u>	<u>3.6</u>	<u>4.0</u>	<u>3.6</u>	<u>4.7</u>
Total	70.5	72.4	76.1	84.6	75.9	100.0
.....Area in 1,000 hectares.....						
Kwilu	71.7	73.4	76.7	87.1	72.2	81.4
Kwango	11.1	11.3	11.9	13.5	11.9	12.6
Maindombe	<u>5.3</u>	<u>5.5</u>	<u>5.7</u>	<u>6.4</u>	<u>5.7</u>	<u>6.0</u>
Total	88.1	90.2	94.3	107.0	94.9	100.0
.....Yield in tons per hectare.....						
Kwilu	.82	.83	.83	.81	.82	112.3
Kwango	.74	.74	.74	.73	.74	101.4
Maindombe	.62	.62	.63	.70	.63	86.3

SOURCE: Rapport Annuel de la Sous-Region du Kwilu, Department de l'Agriculture, 1981.

Appendix Table 1. ANNUAL OWNERSHIP AND OPERATING COSTS FOR A SEVEN-TON TRUCK USED TO TRANSPORT PEANUTS FROM IDIOFA TO KINSHASA, ZAIRE, 1981

Initial cost of the truck was Z 250,000, salvage value Z 50,000, useful life was estimated to four years, interest was estimated to be 18% of average value, and repairs were estimated to be 10% of initial cost of the truck. The truck makes 42 trips per year for a round-trip distance of 1,250 kilometers per trip.

<u>Ownership Costs</u>	Zaires
Depreciation	50,000.00
Interest	27,000.00
Repairs	25,000.00
Insurance (including license plate)	<u>1,800.00</u>
Total Ownership Costs	103,800.00
<u>Operating Costs^{a/}</u>	
Diesel fuel	52,500.00
Oil	6,048.00
Tires	<u>14,000.00</u>
Total Operating Costs	72,548.00
Total Ownership per year + Operation Costs	176,348.00
Total Costs per trip (42 trips)	4,198.76
Total Cost per bay (150 bags)	27.99
Total Cost per kilometer (truck on 16)	3.36

^{a/} Diesel fuel, 2.5 kilometers per liter at Z 2.5 per liter; oil, 8 liters per trip at Z 18 per liter; 14 tires per year at Z 1,000 per tire.

QUESTIONNAIRE TO FARMERS

THE PURPOSE OF THIS QUESTIONNAIRE IS TO STUDY THE MARKETING OF PEANUTS IN THE BANDUNDU AND KINSHASA REGIONS. YOUR ANSWERS WILL BE USED FOR RESEARCH PURPOSES ONLY, AND WILL BE KEPT STRICTLY CONFIDENTIAL.

1. Farmer's code number: _____ Location _____
2. Age: _____ Sex: Male _____ Female _____ Single _____ Married _____
3. Level of formal education:
 - a. Elementary education _____
 - b. Secondary school _____
 - c. Higher _____
 - d. None _____
4. Number of years in farming: _____
5. List of major crops grown:

a. _____	d. _____
b. _____	e. _____
c. _____	f. _____
6. When are your major crops planted? Harvested?

<u>Crop</u>	<u>Planting month</u>	<u>Harvesting month</u>
a. Peanuts	.	
b. _____	_____	_____
c. _____	_____	_____
d. _____	_____	_____
7. Do you hire laborers for:
 - a. Planting peanuts? No _____ Yes _____
If yes, for how many days? _____ at what wage rate? _____
 - b. Harvesting peanuts? No _____ Yes _____
If yes, for how many days? _____ at what wage rate? _____

8. When do you sell your peanuts?
- Before harvesting? _____

 - Immediately after harvest? _____

 - Several weeks afterwards? _____

 - Several months afterwards? _____

9. If you sell somewhat after harvest, where do you store your peanuts?

10. Where do you sell your peanuts? _____

11. How far do you carry your peanuts for selling?
- Carry to the assembly point _____ Kms.
 - Carry to the market place _____ Kms.
 - Shipment p'ace to other market _____ Kms.
12. How do you ship your peanuts and how much does it cost?
- | <u>Mode of Shipment</u> | <u>Cost</u> |
|---------------------------------------|-------------|
| a. You carry in a passenger bus | _____ |
| b. By truck | _____ |
| c. By boat | _____ |
| d. By bicycle | _____ |
| e. On foot | _____ |
13. How far is your farm located from the assembly point for transportation? _____ Kms.
14. What kind of roads are there from your farm to the main road?
- Truck _____
 - Unpaved _____
 - No road _____

15. What is the size of your farm?

- a. Hectares in your whole farm? _____ Has.
- b. Hectares in peanuts?..... _____ Has.

16. How many total peanuts did your produce? _____

Out of these, how much did you:

- a. Keep for your own consumption? _____
- b. Give free of charge to relatives or others? _____
- c. Save for seed? _____
- d. Lose or waste? _____

17. If you sell your peanuts right at the farm gate, what is the price you receive for a bag? _____

18. If you sell elsewhere, how much do you receive for a bag?

	<u>Place</u>	<u>Quantity</u>	<u>Price</u>
a.	_____	_____	_____
b.	_____	_____	_____
c.	_____	_____	_____

19. How much less or wastage do you face from the time peanuts are harvested until the time they are sold?

	<u>Source of loss</u>	<u>Amount</u>	<u>Value</u>
a.	_____	_____	_____
b.	_____	_____	_____
c.	_____	_____	_____

20. Do you get any price information? Yes _____ No _____

- If yes, how:
- a. Radio _____
 - b. Merchants _____
 - c. Official source _____
 - d. Other _____

21. Are price information on time and adequate? Yes _____ No _____

22. Do you package-wrap peanuts before selling? Yes _____ No _____

23. Do you sort or grade your peanuts? Yes _____ No _____
If yes, when: a. Before taking to selling place _____
b. After taking to selling place _____
24. Do you weigh your peanuts before selling? Yes _____ No _____
If yes, how many times? _____
25. What kind of financing is used in the marketing of peanuts?
a. Selling on credit _____
b. Selling on loan from _____
c. Selling cash only _____

QUESTIONNAIRE TO WHOLESALERS

THE PURPOSE OF THIS QUESTIONNAIRE IS TO STUDY THE MARKETING OF PEANUTS IN THE BANDUNDU AND KINSHASA REGIONS. YOUR ANSWERS WILL BE USED FOR RESEARCH PURPOSES ONLY AND WILL BE KEPT STRICTLY CONFIDENTIAL.

1. Wholesalers code number: _____ Location _____
2. Age: _____ Sex: Male _____ Female _____ Single _____ Married _____
3. Level of formal education:
 - a. Elementary school _____
 - b. Secondary school _____
 - c. Higher _____
 - d. None _____
4. Number of years in wholesaling? _____
5. Where do you get your peanuts?
 - a. Bandundu _____
 - b. Bas-Zaire _____
 - c. Others _____
6. Who do you buy your peanuts from?

<u>Name</u>	<u>Location</u>
a. _____	_____
b. _____	_____
c. _____	_____
d. _____	_____
e. _____	_____
7. How much total peanuts did you buy last year? _____ kgs.
 Of this, how much did you:
 - a. Keep for you own use? _____ kgs.
 - b. Give free of charge to relatives friends and neighbors? _____ kgs.
 - c. Lose of waste? _____ kgs.

8. Who are your buyers?

- a. Direct sale to consumers _____
 b. Direct sale to wholesalers _____
 c. Direct sale to retailers _____
 d. Others _____

9. List the buyer of your peanuts.

<u>Name</u>	<u>Location</u>
_____	_____
_____	_____
_____	_____
_____	_____

10. If you sell your peanuts to retailers, what is the price you receive for a bag? _____

11. If you sell elsewhere, how much do you receive for a bag?

<u>Places</u>	<u>Quantities</u>	<u>Prices</u>
a. _____	_____	_____
b. _____	_____	_____
c. _____	_____	_____
d. _____	_____	_____

12. If you buy your peanuts direct from farmers, what is the price you pay for a bag? _____

13. If you buy elsewhere, how much do you pay for a bag?

<u>Places</u>	<u>Quantities</u>	<u>Prices</u>
a. _____	_____	_____
b. _____	_____	_____
c. _____	_____	_____
d. _____	_____	_____

14. Do you take your peanuts to some collection place before shipping to retailers?

- a. No _____
 b. Yes _____ Where? _____

15. What are the conditions for the storage?

16. How much storage charges do you have to pay for:

a bag? _____ 1 month _____ 2 months _____

6 months _____ More than 6 months _____

17. How far do you carry your peanuts from the buying place to the selling place? _____ km.

18. How do you ship your peanuts and how much do they cost?

a. You carry in a passenger bus _____ Cost _____

b. By truck _____ Cost _____

c. By boat _____ Cost _____

19. Is there any other marketing charges and how much did they cost?

a. Rent of a truck _____

b. Licensing fee _____

c. Taxes _____

d. Others _____

20. Do you provide any of the following services and how much do you charge for?

a. Package _____ Cost _____

b. Grading _____ Cost _____

c. Others _____ Cost _____

21. How much loss or waste do you face from the time you buy your peanuts to the time you sell them?

<u>Source or cause</u>	<u>Amount</u>	<u>Value</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

22. Do you hire persons to help you? No _____ Yes _____
 If yes, how many? _____ What is the wage rate _____
 Full time _____ Day per year _____
 Part time _____ Day per month _____
23. How is the selling rate price decided?

24. List the factors you consider in deciding selling price?
 a. _____
 b. _____
 c. _____
 d. _____
25. Do you have any influence in deciding prices at farm gate level?

26. What kind of financing is used in the marketing of peanuts?
 a. Buying on credit _____
 b. Selling on credit _____
 c. Selling cash _____
 d. Buying cash _____
 e. Buying on loan from banks _____
27. What is the interest rate do you pay or charge per dollar if you
 buy or sell on credit?
 Buying _____
 Selling _____
28. List the crops you sell?
 a. _____ d. _____
 b. _____ e. _____
 c. _____ f. _____

QUESTIONNAIRE TO MARKET MIDDLEMEN

THE PURPOSE OF THIS QUESTIONNAIRE IS TO STUDY THE MARKETING OF PEANUTS IN THE BANDUNDU AND KINSHASA REGIONS. YOUR ANSWERS WILL BE USED FOR RESEARCH PURPOSES ONLY AND WILL BE KEPT STRICTLY CONFIDENTIAL.

1. Market Middleman code number _____ Location _____
2. Age _____ Sex: Male _____ Female _____
3. Married _____ Single _____
4. Level of formal education:
 - a. Elementary school _____
 - b. Secondary school _____
 - c. Higher _____
 - d. None _____
5. Number of years in selling: _____
6. What are your sources of supply:
 - a. Bandundu _____
 - b. Bas-Zaire _____
 - c. Others _____
7. Where do you get your supply? (Places & institutions)
 - a. _____
 - b. _____
 - c. _____
 - d. _____
8. How many total peanuts did you buy last year? _____
9. Out of the total peanuts you bought last year, how much did you:
 - a. Keep for your own use? _____

- b. Give free of charge to relatives or others? _____
- c. Lose or waste? _____
10. Who are your buyers? a. Direct sale to consumers _____
 b. Direct sale to retailers _____
 c. Sale to other middlemen _____
 d. Others _____
11. If you sell you peanuts direct to consumers in the market, what is the price you receive for a bag? _____ Kilo? _____
12. If you were to sell elsewhere, how much would you receive for a bag?
- | | <u>Place</u> | <u>Quantities</u> | <u>Prices</u> |
|----|--------------|-------------------|---------------|
| a. | _____ | _____ | _____ |
| b. | _____ | _____ | _____ |
| c. | _____ | _____ | _____ |
13. If you buy your peanuts at wholesale, what is the price you pay for a bag? _____
14. If you buy elsewhere, how much did you pay for a bag?
- | | <u>Place</u> | <u>Quantities</u> | <u>Prices</u> |
|----|--------------|-------------------|---------------|
| a. | _____ | _____ | _____ |
| b. | _____ | _____ | _____ |
| c. | _____ | _____ | _____ |
15. Do you take your peanuts to some collection place before shipping to the retail place? No _____ Yes _____
16. What are the conditions of storage? _____

17. How much storage do you have to pay for a bag? For 1 month _____
 For 3 months _____ For 6 months _____ For more than 6
 months _____

18. How far do you carry your peanuts from the buying place to the market place? _____

19. How do you ship your peanuts and how much does it cost?

- a. You carry in a passenger bus _____ Cost _____
- b. By truck _____ Cost _____
- c. By taxi _____ Cost _____
- d. On foot _____ Cost _____

20. If there are any other marketing charges, how much do they cost?

<u>Cost Item</u>	<u>Cost</u>
a. Rent of land _____	_____
b. License _____	_____
c. Taxes _____	_____
d. Other _____	_____

21. If you provide any of other marketing services, how much do you charge for them?

<u>Service</u>	<u>Charge</u>
a. Packaging _____	_____
b. Grading _____	_____
c. Others _____	_____

22. Do you hire persons to help you? No _____ Yes _____

If yes, how many?	Wage rate	Days per year
a. Full time	_____	_____
b. Part time	_____	_____

23. How is your selling price decided? _____

24. List the factors you consider in deciding the price.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

25. What kind of financing is used in the marketing of peanuts?
- a. Selling on credit _____
 - b. Buying on credit _____
 - c. Selling for cash _____
 - d. Buying for cash _____
26. What interest rate do you have to pay if you buy on credit? _____
What interest rate do you charge if you sell on credit? _____
27. List other crops you sell:
- a. _____
 - b. _____
 - c. _____

QUESTIONNAIRE TO RETAILERS

THE PURPOSE OF THIS QUESTIONNAIRE IS TO STUDY THE MARKETING OF PEANUTS IN THE BANDUNDU AND KIASHASA REGIONS. YOUR ANSWERS WILL BE USED FOR RESEARCH PURPOSES ONLY AND WILL BE KEPT STRICTLY CONFIDENTIAL.

1. Retailer's code number: _____ Location _____
2. Age _____ Sex: Male _____ Female _____
3. Married _____ Single _____
4. Level of formal education:
 - a. Elementary school _____
 - b. Secondary school _____
 - c. Higher _____
 - d. None _____
5. Number of years in retailing: _____
6. What are your sources of supply?
 - a. Bandundu _____
 - b. Bas-Zaire _____
 - c. Others _____
7. Where do you get your supply? (Places & institutions)
 - a. _____
 - b. _____
 - c. _____
 - d. _____
8. How many total peanuts did you buy last year? _____
9. Out of the total peanuts you bought last year, how much did you:
 - a. Keep for your own use _____
 - b. Give free of charge to relatives or others _____

- c. Lose or waste _____
11. If you sell your peanuts direct to consumers in the market, what is the price you receive for a bag? _____ kilo? _____
12. If you were to sell elsewhere, how much would you receive for a bag?
- | | <u>Place</u> | <u>Quantities</u> | <u>Prices</u> |
|----|--------------|-------------------|---------------|
| a. | _____ | _____ | _____ |
| b. | _____ | _____ | _____ |
13. If you buy your peanuts at wholesale, what is the price you pay for a bag? _____
14. If you buy elsewhere, how much would you pay for a bag?
- | | <u>Place</u> | <u>Quantities</u> | <u>Prices</u> |
|----|--------------|-------------------|---------------|
| a. | _____ | _____ | _____ |
| b. | _____ | _____ | _____ |
| c. | _____ | _____ | _____ |
15. Do you take your peanuts to some collection place before shipping to the retail place? a. No _____ Yes _____
If yes, where? _____
16. What are the conditions of storage? _____

17. How much storage do you have to pay for a bag? For 1 month _____
For 3 months _____ For 6 months _____ For more than 6 months _____
18. How far do you ship your peanuts from the buying place to the market place? _____
19. How do you ship your peanuts and how much does it cost?
- | | | |
|----|------------------------------------|--------------------|
| a. | You carry in a passenger bus _____ | Cost per bag _____ |
| b. | By truck _____ | Cost per bag _____ |

- c. By taxi _____ Cost per bag _____
- d. On foot _____ Cost per bag _____

20. If there are any other marketing charges, how much do they cost?

<u>Cost Item</u>	<u>Cost</u>
a. Rent of land _____	_____
b. License _____	_____
c. Taxes _____	_____
d. Other _____	_____

21. If you provide any other marketing services, how much do you charge for them?

<u>Service</u>	<u>Charges</u>
a. Packaging _____	_____
b. Grading _____	_____
c. Other _____	_____

22. Do you hire persons to help you? No _____ Yes _____
- If yes, how many? Wage rate _____ Days per year _____
- a. Full time _____
 - b. Part time _____

23. How is your selling price decided? _____

24. List the factors you consider in deciding the price.

- | | |
|----------|----------|
| a. _____ | d. _____ |
| b. _____ | e. _____ |
| c. _____ | f. _____ |

25. What kind of financing is used in the marketing of peanuts?

- a. Retailing on credit _____
- b. Buying on credit _____
- c. Retailing for cash _____
- d. Buying for cash _____

26. What interest rate do you have to pay if you buy on credit? _____
What interest rate do you charge if you sell on credit? _____

27. List other crops you sell

- a. _____
- b. _____
- c. _____