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THE MANDARA MOUNTAINS MARKET SYSTEM

Report on the Agricultural Crops and Traditional Markets of the  
Mandara Mountains Region

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20 July 1979  
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## I. INTRODUCTION

The following report is the result of an eight month study of the Mandara Mountains Market system. All research was done within the Margui-Wandala District with the majority of attention given to those areas above 600 meters. Research began in September 1978, and ended in April 1979.

There are three major sections to this report. The first, Crops, describes the major food crops, their importance in this region and their commercialization. Secondary crops which bring additional revenues to the farmer are described in like manner. An explanation of storage facilities concludes the first section.

The second section, Markets, gives a general description of the traditional market system followed by a detailed description of five selected markets. Within the detailed description of the Mokolo market, prices, present and past, are examined in light of various influences. Various aspects of the market system are then explained in further detail.

The third section, Recommendations, lists several suggestions for future projects aimed at generating income for the local population. These recommendations are based upon the information given in the first two sections and upon additional information derived from administrative officials and local inhabitants.

## II. CROPS OF THE MANDARA MOUNTAINS REGION

The major crops of the Mandara Mountains region, in terms of amount grown, importance to diet and cash value, are sorghum, peanuts and beans.

The secondary crops whose importance lies in supplementing the farmer's diet and income are corn, rice, potatoes, sweet potatoes, onions, garlic, sesame, sugar cane, carrots, lettuce and tomatoes.

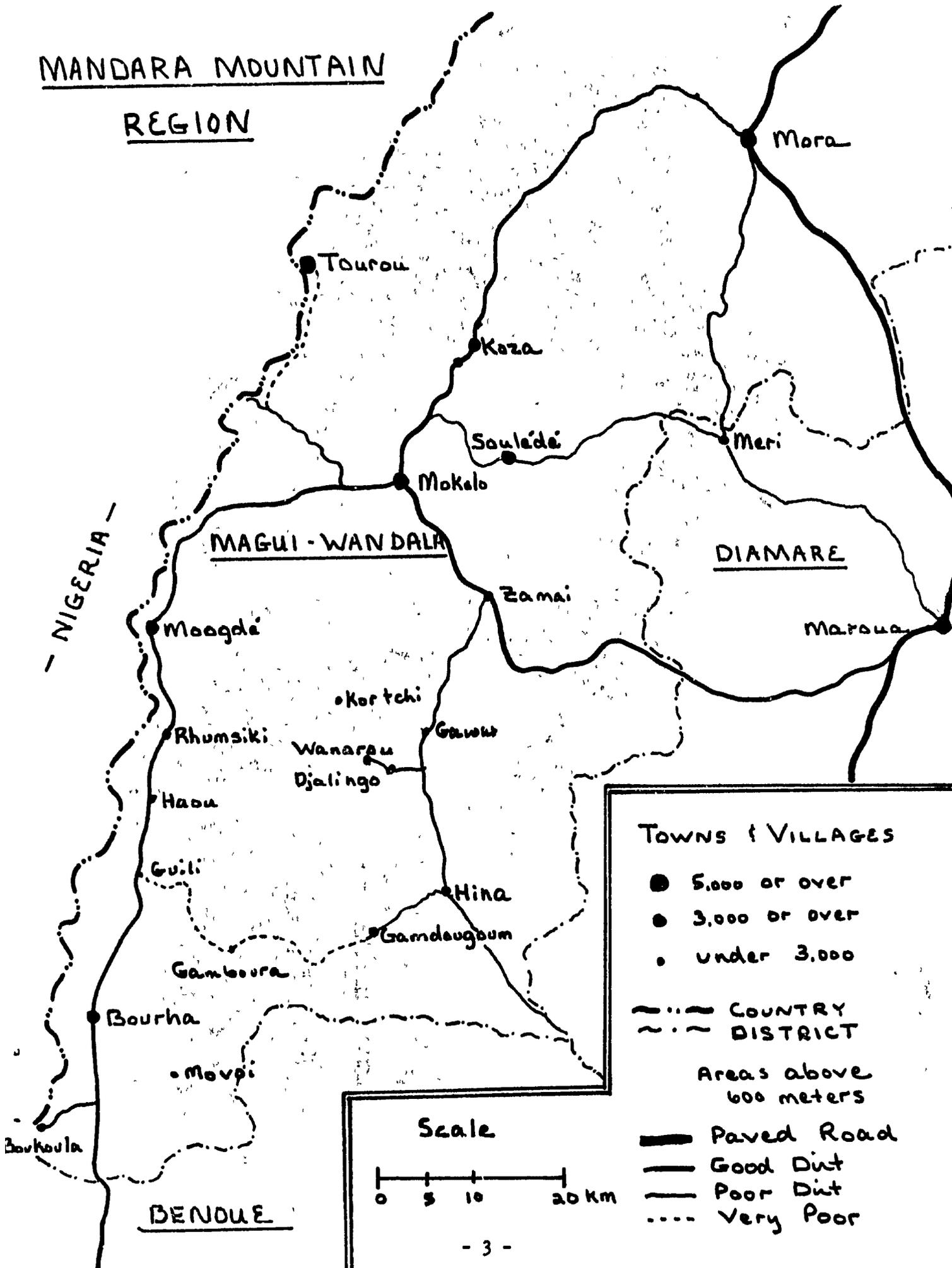
To facilitate an understanding of the crops of this region a map showing approximate locations where the crops are grown and an agricultural calendar illustrating during which months they are planted, harvested and sold are provided on the following pages.

Further discussion of each crop follows the map and calendar.

A discussion of storage facilities concludes this section.

# MANDARA MOUNTAIN

## REGION



### TOWNS & VILLAGES

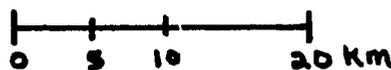
- 5,000 or over
- 3,000 or over
- under 3,000

- — — COUNTRY
- - - DISTRICT

Areas above  
600 meters

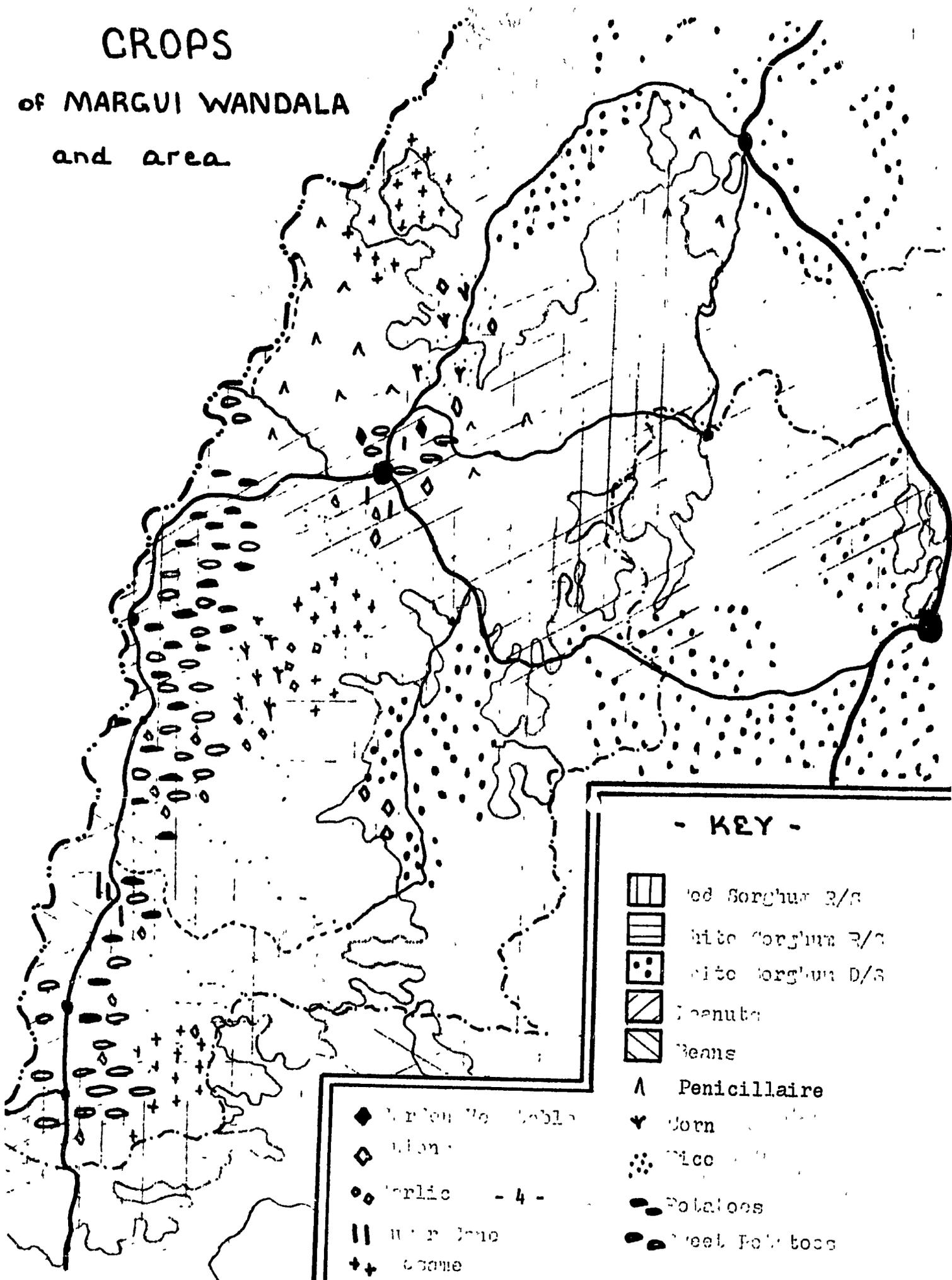
- Paved Road
- Good Dirt
- Poor Dirt
- .... Very Poor

### Scale



# CROPS

of MARGUI WANDALA  
and area



- KEY -

-  Red Sorghum R/S
-  White Sorghum R/S
-  White Sorghum D/S
-  Peanut
-  Beans
-  Penicillaire
-  Corn
-  Rice
-  Potatoes
-  Sweet Potatoes

-  Watermelon
-  Cacao
-  Garlic
-  Watermelon
-  Cacao

Table 1. Agricultural Calendar\*

P - Planting

H - Harvesting

S - Selling

CROPS	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Red Sorghum R/S						-----P			-HS-----HS-----S-----			
White Sorghum R/S						-----P			-HS-----HS-----S-----			
White Sorghum D/S		-----HS-----	S-----	S-----	S-----	S-----				--P-----P		
Peanuts	-S-----	S-----	S-----	S-----		P-----				H-----	H-----	HS-----
Beans	-S-----	S-----	S-----	S-----		P-----				H-----	HS-----	S-----
Corn	-S-----					-----P-----			-----HS-----	S-----		S-----
Rice	-S-----	S-----				P-----				H-----	H-----	HS-----
White Potatoes	-S-----					-----P-----		HS-----	HS-----	HS-----	S-----	S-----
Sweet Potatoes	-S-----	S-----				-----P-----				H-----	HS-----	HS-----
Garden Vegetables		-----HS-----	HS-----	S-----	S-----	S-----				P-----		
Sugar Cane	-S-----	S-----	S-----	S-----						H-----	HP-----	HP-----
Sesame						-----P-----			HS-----	HS-----	S-----	

\*Information obtained from the Post Agricole at Hina.

- 5 -

## A. Major Crops

### 1. Sorghum

Sorghum is the principal food crop of the Mandara Mountains area as it is for the entire north of Cameroon. There are three important types of sorghum grown and sold in the mountains and adjacent plains. A red and a white variety are grown during the rainy season, and white and yellow types during the dry season. For approximate growing areas, refer to Map 2.

The most abundant sorghum grown is the rainy season red sorghum. It is grown throughout the district, mountains and plains, except for the area south of Mokolo as shown on Map 2. Planting of the red sorghum begins after the first rains, usually in May. Harvesting begins in late August and continues through October. It appears at the markets starting in the middle of September and lasting throughout the dry season.

The rainy season white sorghum is a large grain variety. It is grown in the mountain area south of Mokolo. It has the same growing season as the red sorghum.

The third type is the dry season sorghum, a white or yellow variety commonly called mouskouari. This variety is grown in the adjacent plains of the mountains, continuing east to Maroua and north to Chad. The seeds of this plant are started in seed nurseries at the end of the rainy season. When the rains have stopped, the

seedlings are transplanted in the fields after the rainy season crops are removed. Harvesting begins at the end of January.

Of the above types there are several different varieties. More information can be had from the sources listed in the bibliography dealing specifically with sorghum.

All types of sorghum are dealt with in a similar manner. Most of the sorghum grown by a farmer is kept for the use of his family. It is stored in mud granaries within the family compound. Varying proportions of it are given as reimbursements for debts, gifts, animal feed, obligations to village chiefs and as payment to workers. Another proportion, depending on the tribe of the farmer, is used for the making of sorghum beer. If a farmer feels he has a suitable surplus after the above allocations, or, if he is in need of cash, he will attempt to sell part of his harvest. He may do this immediately after harvest or wait until the price is higher.<sup>1</sup>

It should be noted that the figures from the resource footnoted above are from interviews held with farmers on the plains. They have greater surpluses of sorghum than the mountain people. The mountain people are more likely to keep a larger proportion of their sorghum for their own use, as well as use peanuts, which they have in greater abundance, for some of the above-mentioned obligations.

In addition, there is a type of small sorghum grown, called penicillaire. I was told there was not a significant amount but

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<sup>1</sup> See Appendix 4.

nevertheless it was available at the Mokolo and Tourou markets and was listed in the Activity Report for October 1978.<sup>1</sup> It is mostly grown in the area north of Mokolo as shown on Map 2.

Farmers use the market place for the selling of their sorghum. They may sell at the nearest local market or they may decide to travel to the nearest major market. At either market they will sell to consumers, traders or women who buy sorghum for the purpose of making beer.

Farmers, or someone representing them, transport their sorghum to market by various means. The most common is walking, the load being carried on the head. Often, however, men will have donkeys or bicycles by which to transport their grain. Women, who sell sorghum less frequently, always walk.

Once at the market the seller will go to the sorghum section and either sell his sorghum straight away to a trader or display his parcel on the ground for anyone wanting to buy bowlfuls.

Buyers, other than commercants, are almost always women who have walked to the market to buy a small supply of sorghum for their family. The amount most commonly bought is four to five kilos. The women shop for the best prices. The lower price sorghum, always the red sorghum or a mixture of red and white, is the one bought to make beer as well as for food. The higher priced white or yellow sorghum is the preferred one for eating for those who can afford it.

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<sup>1</sup>See Appendix 2.

Once the sorghum is purchased it is placed in sacks, enameled pans, calabashes or tied in a piece of material and carried home on the head of the buyer.

Traders, who buy with the intent of reselling, are always men. They travel to various local markets during harvest periods when the price is lowest and buy all the grain a farmer has to sell. This sorghum is then resacked in larger bags, 80 or 100 kilos, and placed in trucks to be carried to the larger markets for storage and reselling.

In the Mandara Mountains as a whole there is no surplus of sorghum. There is only surplus sorghum in the adjacent plains area, specifically near Koza and Zamai. It is at these places and in the adjacent district of Dianiare that the traders from Margui-Wandala do their buying of sorghum for the purpose of reselling.

There is a distinct lack of sorghum in the mountainous area of Bourrha, Mogode and Tourou. These areas are not suitable for growing sorghum. It is here that peanuts and beans begin to play an important role.

## 2. Peanuts

Peanuts play an important role in the lives of the people of Margui-Wandala. They are used both for food and as a cash crop. They are especially important for those areas of the mountains where sorghum is difficult to grow. (Map 2).

Peanuts are planted when the rains have begun on a fairly regular basis, which is usually mid-May. Planting continues until mid-July. The first harvest begins in October. October, November and December are the busy months for harvesting and for shelling those nuts which are to be sold to commercants. Selling begins in late December and lasts through April or until the nuts are gone, or until the rains become too heavy to allow trucks to pass on the dirt roads.

Peanuts which are to be kept for the family use or for later sale are stored in the same type containers as the sorghum. As long as the nuts are kept dry and in the shell their storage life can extend to the next season, approximately eight months.

The proportion of a farmer's peanut harvest which is kept and that proportion which is sold depend upon types of obligations similar to those for sorghum. The difference is that peanuts grow more abundantly in the mountains than sorghum and there is therefore a greater surplus to sell. Also they are not in themselves as important a food as sorghum, although their exchange value insures that the farmer will be able to purchase sorghum when needed.

A small proportion of nuts are sold by sellers at the local markets to buyer-consumers. These nuts are usually shelled and often grilled. The prices of these nuts are higher than the bulk rates commercants pay. Refer to the section on the Mokolo market description entitled "Prices" for additional information.

The majority of the peanut harvest is sold to commercants at the various peanut markets. These markets take place in conjunction with regular weekly markets spread throughout the countryside. They consist of the local farmers bringing their nuts and commercants being there to buy them.

Of the numerous peanut markets there are several which are considered to be principal locations because they attract the most sellers. These include Mokolo, Wanarou, Gamdougoum, Bourha and Soulede.

Where there are the most sellers there are the most buyers. At Wanarou there were up to twenty large trucks and up to fifty commercants equipped with scales for weighing the nuts bought from the farmer. At Gamdougoum there were six large trucks and approximately thirty commercants with scales. At both markets there were numerous farmers, both male and female in fairly equal proportions, who had come to sell their nuts.

The Mokolo market is also active in the selling and buying of peanuts, although it is not as noticeable since some of the activity is spread throughout the week, as opposed to being concentrated on one day like the others.

Bourha is also a major peanut market. It is the furthest south that Cameroonian traders will purchase peanuts since the nuts south of the area are mixed with Nigerian nuts which are considered to be of inferior quality.

In contrast, Nigerians prefer buying nuts in this area since the Nigerian nuts are mixed with the Cameroonian nuts which are considered superior and thus bring a higher price in Nigeria. Boukoula is the market most used by Nigerians buying peanuts in Cameroon.

Commercants who are authorized to buy nuts in Margui-Wandala, come from various places. The majority come from Maroua, Garoua and Douala. They may do the actual collecting of nuts from the local markets themselves, or they may buy from other commercants who have already collected the peanuts. Other commercants come from Nigeria or from the Bourha-Boukoula area to buy nuts and later sell to Nigerians. I know of only one major peanut commercant originating within the Margui-Wandala District. He lives in Mokolo and owns two large trucks. He sends these out to the local markets and they return with the collected nuts which they deposit in his compound. He then sells these nuts to other commercants who come to Mokolo from other towns.

For further information on commercants, refer to the market section "Traders".

Exact figures of production of peanuts in Margui-Wandala are difficult to determine. There are no means to monitor the flow of nuts which leave the department in route to Nigeria or other departments, and the figures the commercants give for how many nuts they

buy are not considered reliable. However, the Post Agricole has arrived at some figures for the 1976-77 and 1977-78 seasons.

See Table 2.

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**Table 2. Peanut Production, Margui-Wandala**

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1976-77

Total area cultivated	23,512 hectares
Kg. per hectare (with shells)	619 kilos
Total production (with shells)	14,565 tons
Production sold (without shells)	8,197 tons

1977-78

Total area cultivated	24,815 hecreres
Kg. per hectare (with shells)	640 kilos
Total production (with shells)	17,234 tons
Production sold (without shells)	5,745 tons

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It is believed that there were more nuts in 1977-78 than 1976-77, but they went to Nigeria and other departments without being calculated.

Figures for the 1978-79 season were not available at the time of this research. For general purposes, it was considered to be a good year for production.

Although production was good for the 1978-79 season, the trading process was delayed. This was because Douala still had an ample supply of nuts from the previous season as a result of the surplus on the world market. Active buying by approximately fifty authorized commercants finally began in late January. Commercialization was expected to run through May. The prices commercants were paying farmers for peanuts this season were 65 to 85 CFA<sup>1</sup>, which is considerably lower than the previous two years of 115 and 125 CFA. Undoubtedly the low demand for peanuts this year was a factor in determining this low price. Prices, present and past, are discussed more fully under the Mokolo Market description.

### 3. Beans

Beans play an important role in the lives of those mountain people who are unable to grow enough sorghum for their needs. For them, beans are grown out of necessity; for others, beans add occasional variety to the diet.

There are two popular varieties of beans grown in the mountains. One is the cowpea and the other is a hard yellow bean about 1.3 centimeters in diameter, called voaundzou. Both types are grown throughout the mountains with the largest concentration south of Rhumsiki.

Beans are planted during June and July and are harvested in October and November. They appear at the marketplace from the time

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<sup>1</sup> 215 CFA = \$1.00 U.S.

of harvest throughout the dry season. The greatest quantities of beans were found at the Bourha and Boukoula markets.

The commercialization of beans includes farmers selling at local markets directly to consumers; farmers, always female in this case, traveling to Maroua to sell beans at the Maroua market; and, farmers, both male and female, selling beans to traders who resell to Nigerians.

Farmers, most often females, sell beans at the market by the bowlful from baskets or calabashes that they have carried to market on their heads. If the farmer has time she will travel to the nearest market which is attended by people from the plains. Here she has the best chance of selling her beans since the plains people do not ordinarily grow beans. For the same reasons, women travel by foot or taxi to Maroua to sell their beans. They stay with friends or relatives until they are able to sell what they have brought with them. After a few purchases of their own, they return home.

Traders, always men, located in the area of Bourha and Boukoula, make it their business to buy beans from the farmers, resack them in large 100 kilo bags and resell them to Nigerian traders. Most of this trade takes place at the Boukoula market located on the border. The beans are stockpiled in small mud storehouses at the marketplace. For the year of 1977 an estimated 59,880 kilos of cowpeas and 52,540

kilos of youandzou were exported to Nigeria.<sup>1</sup>

The proportion the farmer keeps is stored in the mud granaries or in sacks.

Prices for beans are lowest at the time of harvest, currently 100 CFA for approximately one kilo. The price doubles during the rainy season before the next harvest. More information on prices can be found under the Mokolo market description.

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<sup>1</sup> "Monthly Economic Report", Post Agricole, Bourha

## B. Secondary Crops

### 1. Corn

Corn has recently been introduced to this area by SODECOTON which has provided some farmers with seed. It is cultivated on that plateau south of Mokolo and on the flat areas near Koza. Corn can be found in small quantities at the markets near these areas. In September 1978, during the harvest, corn sold for 110 CFA a kilo. The prices rise as the supply decreases. Buyers include only the local population.

### 2. Rice

Rice is a minor grain crop in this area. It is grown in various valleys near rivers and streams. The seeds are planted at the beginning of the rainy season. Harvest begins in October.

Most of the rice a farmer grows is kept for his own purposes. The rice that appears at the marketplace is most often that which has been brought in from Yagoua by traders. Therefore, the prices of rice listed under the Mokolo market description are not for locally grown rice and do not correspond to the growing season.

### 3. Potatoes

There are two types of potatoes grown in the mountain region. One is the sweet potato, which is grown for local consumption and for exportation to Maroua, Mora, Kousseri, and Garoua for eventual

consumption by the Cameroonian population. The other is the white potato, which is mostly grown for exportation to Maroua, Garoua and Ndjamena, urban centers with large foreign communities.

The sweet potato is planted in July, grows throughout the rainy season and is harvested beginning in October. During harvests and for months later it is seen at most of the markets. It is a very popular food with the local population. The price is 100 CFA for three or four potatoes, fifteen to twenty centimeters each. Throughout the selling season the price remains the same but the quantity may vary.

The Mandara Mountains region is the only area in which sweet potatoes are grown in quantity. In November and December of 1978, it was estimated that 7,200 sacks (approximately 80 kilograms) of sweet potatoes were exported by a total of 102 trucks to Kousseri, Maroua, and Mora. At 2,500 CFA a sack the value was 18,000,000 CFA. It was reported at the same time that Rhumsiki, a major growing area, had not yet begun to sell. No later figures were available.

The white potato is planted at the beginning of the rainy season and harvested as early as August. These potatoes are grown solely for selling to traders who will resell them to middlemen from Maroua, Garoua, Kousseri and Nigeria. Mokolo is the common marketplace for this exchange. The markets of Rhumzou and Boukoula are also important. The Rhumzou area is the principle locality for the production of potatoes and Boukoula is the principle

market for conducting business with the Nigerians.

The price for a sack of potatoes has remained fairly stable. In August 1977, potatoes cost 5,000 CFA an eighty kilo sack. In September 1978, a sack cost from 4,500 to 5,000 CFA, and in February 1979 a sack cost 4,000 CFA at a small market and 5,500 CFA at Mokolo.

A second smaller crop of potatoes is begun at the end of the rainy season. These potatoes are brought to maturity by drawing water from the rivers or riverbeds. They are considered a garden crop and will be further discussed under "Garden Vegetables."

#### 4. Garden Vegetables

For the purposes of this report, garden vegetables are defined as those crops which are manually watered. They include carrots, lettuce, tomatoes, the second crop of potatoes and onions.

Carrots, lettuce and tomatoes are grown five kilometers outside of Mokolo alongside the Mandakar River. The seeds are planted after the rainy season in October and November. Water for the plants comes from the river. As the river runs dry, the gardner digs into the sandy riverbed to draw water which is then applied with a watering can.

Carrots and lettuce are grown solely for selling to government workers, the small foreign community, the hotel at Mokolo, and to traders who come from Maroua and Kousseri. The farmers who grow

these foods do not eat them. If they grow more than they can sell, the surplus is turned under. At the marketplace carrots are sold by bunches of five or six for 100 CFA. A head of lettuce costs 100 CFA.

Tomatoes are sold to the same people but are also bought by those members of the local population who can afford them. Tomatoes cost 100 CFA for four. What the farmer does not sell, the family will eat.

These garden plots offer farmers the opportunity to be gainfully employed during the dry season when agricultural activity has slowed.

The second crop of potatoes is planted at the end of the rainy season and is watered in the same manner as the aforementioned crops. They are mostly sold to traders who resell them in Mokolo, or to other traders who will resell them in Maroua, Garoua or Kousseri. These potatoes cost 150 to 200 CFA a kilo at the marketplace in Mokolo. Potatoes grown during the rainy season cost 80 to 100 CFA a kilo.

Onions are cultivated in flat areas around Mokolo and near Koza and Hina. They are grown on large plots dug fifteen centimeters below ground surface and are hand-watered. They are purchased by all segments of the population. They are most abundant in March, during which time they cost 100 CFA for five onions and 2,500 CFA for a sack. Prices rise as the supply diminishes.

## 5. Garlic

Garlic is cultivated by numerous farmers throughout the area. It is grown in small plots near the farmers' homes, and is used for both medicinal and culinary purposes. It can be found in small quantities at most of the markets and costs 100 CFA for three to four small heads. It is bought by all segments of the population.

## 6. Sesame

Sesame seeds are grown throughout the region with concentrations in the mountainous areas near Tourou, Kortchi, and Movoi. They are harvested by the women and brought to market to sell. They are bought mostly by the local population. At Tourou on September 12, 1978, a twelve by ten centimeter bowl cost 275 CFA.

## 7. Sugarcane

Sugarcane is grown sporadically alongside rivers and streams throughout the district. Each year a new crop is planted as the previous year's crop is harvested. It appears at the markets from December through April and costs 25 CFA for a forty centimeter piece. It is bought solely by the local population.

### C. Storage Facilities

Storage facilities are of two basic types. The first, and the most commonly used, is a granary made of mud and straw built over a wood or stone platform. The diameter is approximately 130 centimeters, the height approximately two meters. The inside is often subdivided for separating items to be stored. The opening is usually located at the top, measuring approximately eighty centimeters in diameter. A grass mat cover protects the contents. During the rainy season an additional grass mat covering is put around the entire granary to increase protection against the rain. This granary is sometimes built with a side-opening just large enough for the upper part of a person's body to lean through.

Most crops grown, including sorghum, peanuts, beans, garlic, sesame seeds, and red pepper, are stored in this type of granary. Exceptions are potatoes and sweet potatoes, which are sold immediately. Those crops kept for seed are buried in sand inside the huts. Onions are kept in burlap bags.

The second type of granary is used for the storing of sorghum only. It is used by wealthy farmers or farm owners. It is less common than the above-described granary. The granary is actually the top, roof-half of the common hut. Instead of being of thatch, the roof is formed of mud, except for the top third which is of clay. The opening is on top and measures approximately thirty-five centimeters in diameter.

It is closed by a well fitting clay pot. The entire granary is covered by thatching and thus appears to be just another hut, except for the additional straw mat cover fitted over the clay pot.

I inspected both types of granaries. The first type I visited in April, when the granaries are being repaired from the past season and are being filled. Obviously, there are problems with insects and rats since the opening is not securely closed. Mr. Dell, the Agent Technique d'Agriculture in Mokolo, stated that they estimated 30% of the crop stored was lost to destruction by insects and 25% was lost to rats.

The second type is by far superior. It was in September during the last of the rains when I inspected the mud roof type. The sorghum inside was in perfect condition and dry with no signs of insects. The owner stated that he had no trouble with rats.

Less commonly, sorghum is stored in sacks, either of burlap or a fiber and plastic combination, which are kept within a house or storage area. This type of storage is used by government workers who live in an urban situation and by commercants who stockpile sorghum.

### III. Markets

#### A. General Description

The Mandara Mountains region, like the whole north of Cameroon, has an extensive market system. Each village with a sufficient population is likely to have a market. The markets range from large, daily, all year-round markets, such as the one in Mokolo, to small, weekly, dry season markets, such as the one in Tourou.

These markets exist to provide the people of the area with places to come and sell their products or wares and to buy or trade for items they are not producing themselves. They also serve as places to socialize.

Markets are usually reflective of the types of items produced in the surrounding area. For example, Koza is a major sorghum market, lying adjacent to sorghum producing plains. Bourha is a major bean market since the surrounding area produces large quantities of beans. Gamdougoum is an important peanut market, located in an area which produces a surplus of peanuts.

Marketplaces are normally located in the center of the town or village, just off the main road. They range in size from 10,000 m<sup>2</sup> to 1,600 m<sup>2</sup>.

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<sup>1</sup> "sufficient population" can be as few as 500 people

Market structures range from the rare concrete building to the more prevalent grassmat shelter. Several markets have no structures.

With a few exceptions, market activity begins at 8:00 a.m. to 9:00 a.m. and ends at 12:00 p.m. to 1:00 p.m. Exceptions include Mokolo and Koza, which reconvene in the afternoon. If there is an accompanying wine market it usually continues into the afternoon.

Most markets are held on a weekly basis. Exceptions include Mokolo and Koza, which are held daily. However, the majority of their business is conducted on an assigned market day. Market days for each market are determined in accordance with other markets nearby. For example, in the Mogode region, the Rhumsiki market is Tuesday. This allows the population to visit several markets a week. The Mokolo market, the most important market in the district, is the only market in the district to be held on Wednesday.

People travel to the markets by foot, donkey, bicycle, mbylette, motorcycle, taxi and by small and large trucks. The majority of people, including all the women, travel by foot carrying their goods on their heads. Near the plains areas donkeys are used by elderly men for transporting sorghum to the markets. Bicycles, mbylettes and motorcycles are used by the young and medium-aged members of the male population, some of whom are engaged in commerce. Taxis and trucks are used by traders for transporting their goods.

Distances people travel to markets vary. According to the questionnaire results, the most time spent was three hours by donkey, traveling a distance of fifteen kilometers and three hours by foot, traveling a distance of twenty kilometers. The majority of people travel distances less than twenty kilometers to visit a market. The actual distance depends on the location of the person's home in relation to their nearest local market or to the nearest major market.

During the seven month period between September 1978 and March 1979, I visited twelve different markets, six of them once, five of them twice, and one of them four times. See Table 3.

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**Table 3. Markets Visited and Dates - September 1978 - March 1979**

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Mokolo - Sept. 20, Dec. 13, Feb. 21, March 27

Tourou - Sept. 21, Feb. 22

Mogode - Sept. 23, March 5

Koza - Sept. 24, March 5

Zamai - Sept. 25, March 25

Wanarou - Jan. 30

Boukoula - March 6

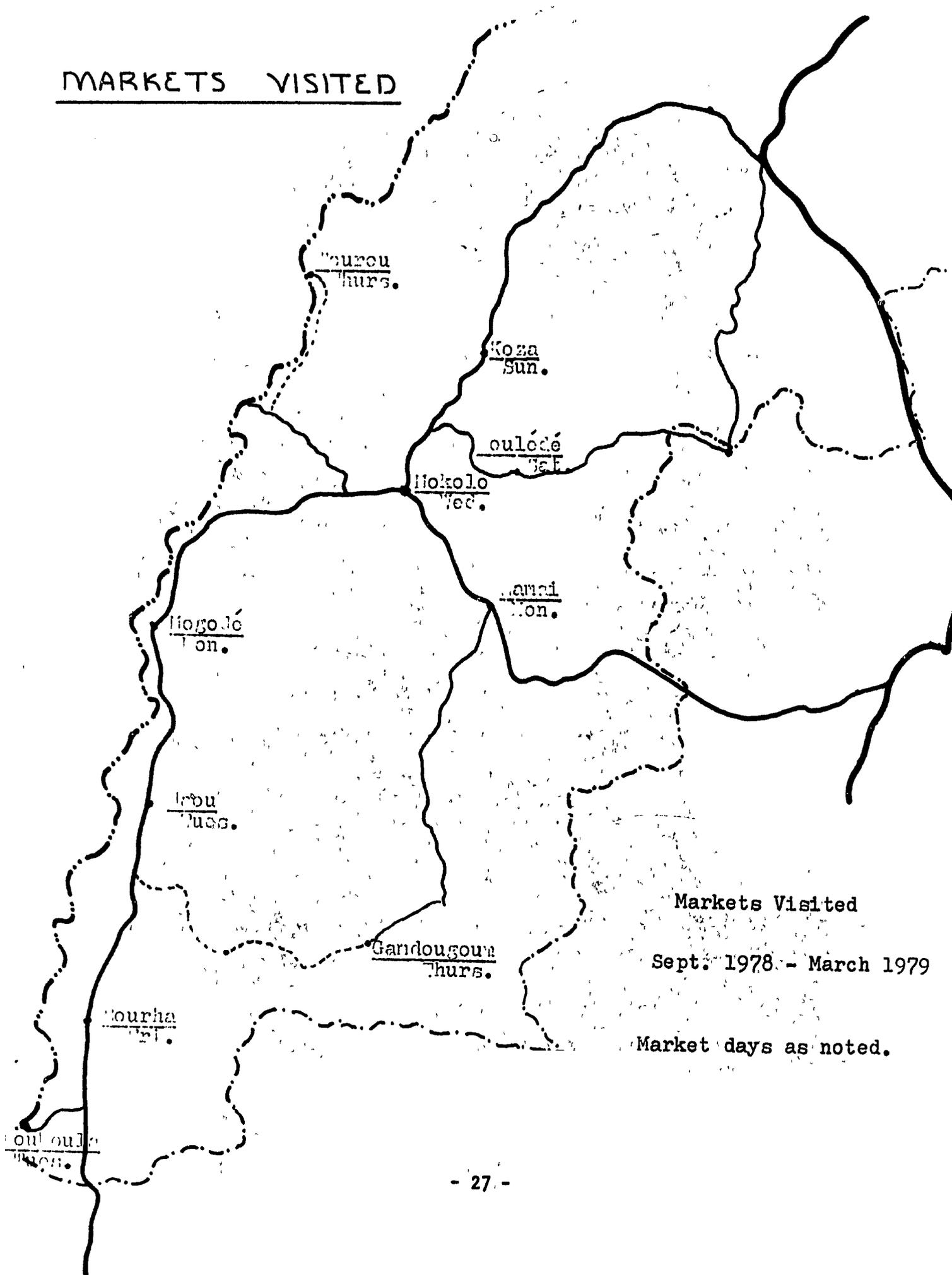
Haou - March 6

Bourha - March 6, March 30

Gamdougoun - March 29

Soulede - March 31

MARKETS VISITED



Markets Visited

Sept. 1978 - March 1979

Market days as noted.

## B. Five Selected Markets

Of the markets visited I have selected five markets to describe in detail. These markets and reasons for their selection are as follows:

1. Mokolo - The largest and most important market of the Mandara Mountains.
2. Zamai - Located between the plains and the mountains and visited by people from both regions.
3. Gamdougoum - A major peanut market, accessible by a very poor road, visited by commercants from all directions - Bourha, Mokolo and Maroua.
4. Tourou - A small, local market, inaccessible during the rainy season, located on the Nigerian border.
5. Mogode - A small market with commercial activities based on the sale of peanuts, potatoes and beans. Includes a wine market.

### 1. Mokolo Market

The Mokolo market was created in 1934 by the administration in an effort to stimulate commerce. Today it is the largest and most important market in the Mandara Mountains region.

Mokolo, and thus the market of Mokolo, is centrally located in the Margui-Wandala District. During the dry season, it is easily accessible from the plains and from the surrounding mountains, thus creating a

natural exchange center for the products from these two environments. From the mountain areas come the agricultural products peanuts, beans, potatoes, fruit, red pepper, garlic and sesame seeds. Sorghum comes from the rural areas and manufactured items from the cities of Maroua and Garoua.

The Mokolo market operates every day from 8:00 - 12:00 a.m. and from 3:00 - 5:30 p.m. Wednesday is the "Grand Marche", the day when the largest number of people attend. According to B. Steck, 93% of the people on this day come from within a twenty kilometer range and 61% come from within ten kilometers.<sup>1</sup>

Of all the markets in the Mandara Mountains region, Mokolo has the greatest selection of both manufactured items and agricultural products. The manufactured items are brought in from Maroua and Nigeria. The agricultural products are produced by the rural farmers within the district.

The main attraction to the market for the rural population is the opportunity to sell their products to a large body of buyers in exchange for cash which they can then use to purchase manufactured items. The attraction for traders is conversely the opportunity to buy the agricultural specialties of the area, peanuts, beans, potatoes, and fruit, and the opportunity to sell manufactured items to the rural population.

The urban population of Mokolo uses the market to supply all needs.

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<sup>1</sup> B. Steck, "Mokolo dans ses relations avec le milieu environnement," cah. O.R.S.T.O.M. Sec. Sciences Humaines, Vol. IX, No. 3 (1972), p. 287.

This population consists of government workers, local traders, wealthy farm owners and foreigners. Their money is an added stimulus to the economy of the Mokolo market.

The Mokolo market is a spacious, well-organized market. There are approximately 10,000 square meters. Like items are grouped together as indicated on the following diagram. The blank areas on the diagram are the walkways. On Wednesday these areas are partially used by the local farmers who come to sell their goods. Mokolo is the only market in the district that has concrete buildings.



## Key to Diagram of Mokolo Market

- A - Largest permanent structure of market, made of concrete bricks. Used by material and tailor shops, except for one cut-wood stall, which opens onto the courtyard. The courtyard is used for storage of sorghum and/or peanuts. During the rainy season the twenty-four small shops are used for the storage of sorghum. In the lower left hand corner is a meat market, opening onto the outside. All sellers and tailors are men.
- B - A large store for selling material. Men sellers.
- C - Material and tailor shops. All men sellers and tailors.
- D - Bar, sells bottled drinks.
- E - Small stores which sell a variety of goods. All sellers are men.
- F - Stores facing both directions. Sell a variety of goods. All men sellers.
- G - Lower half is bar selling bottled drinks, upper half is store.
- H - Stores, variety of goods.
- I - Small stores.
- J - Construction of new mud brick buildings.
- K - Men and women selling food in small quantities, both raw and prepared. Kola nuts and baked bread, sold by men.
- L - Restaurant.
- M - Barber stand with one chair. Diagram of haircuts available.
- N - Cooking huts, young men preparing meat brochettes.
- O - Grass shelter with sacks of sorghum stored inside.
- P - A large grouping of fish sellers. Some of the huts also stock onions.
- Q - Metal and leather workers.

- R - Women selling carrots.
- S - Bicycle repair, by young men.
- T - Peanuts being bought by commercants. Fifteen large scales are available. Also an area where commercants come to buy quantities of peanuts. There are approximately 300 sacks.
- U - Taxi stand.
- V - Men selling goats.
- W - Women selling large clay pots designed for carrying water.
- X - Sheet metal for roofs and doors.
- Y - Handmade ropes.
- Z - Men selling chickens, people sitting around talking, resting and eating prepared meat from the adjacent cooking area.
- AA - Women selling prepared foods.
- BB - Men selling material and used clothing.
- CC - Traditional barbers giving shaves and haircuts.
- DD - People resting and socializing in the shade of the wall and of a few trees.
- EE - Men selling beans, corn, sesame seeds.
- FF - Sorghum being sold by commercants and by local farmers, thirty-six sellers, approximately 125 bags.
- GG - Women selling legumes and red pepper.
- HH - Tobacco sellers, men selling rubber strips, and men selling small handmade knives.
- II - Men and women selling small quantities of peanuts, salt and legumes.
- JJ - Onions being sold by thirteen men and women, 2,500 CFA a sack.
- KK - Women selling bundles of sticks.
- LL - Approximately thirty men selling yams and sweet potatoes.

MM - Men selling woven straw mats.

NN - Stacks of rocks.

00 - Women selling sorghum drink from clay pots.

## Prices

The prices for Mokolo market listed on the following pages are taken from the monthly economic reports submitted by the Post Agricole of Mokolo. For those months with no listings, there were no reports available. The prices not listed in any given month can mean one of two things -- either the monitor taking the prices did not feel a particular item was important or the item was not at that time available at the market.

There are different types of units by which items are sold. One type is by the kilogram, where the item is often weighed by scales to insure correctness. Meat, potatoes and rice are sold in this manner. A second measure is by the bowlful, or agoda. The product is heaped in the bowl as high as it will go. The bowls vary in size but generally for the Mokolo market the agoda most used is nineteen centimeters in diameter and seven centimeters deep. For sorghum this means approximately 1.5 kilograms, depending on the type of grain and moisture content. One bowl of shelled peanuts sold in this fashion weighs approximately 1.9 kilograms. Beans weigh approximately 1.7 kilograms. A third unit is by groups. The number of items in a group varies according to the product. Sweet potatoes are generally sold by stacks of four or five. They range from four to six inches long and wide, and their approximate weight is 3.3 kilograms. Garlic is sold by groups of four or five small heads, weighing in total about .06 kilogram. Onions are sold in stacks of four or five, depending on the

season. In the off-season they are sold by four weighing about .8 kilogram. In the dry season just after harvest, they are sold by five weighing approximately 1.5 kilogram, which is partially due to the higher water content of fresh onions. Carrots, although not mentioned in the report, are sold by bundles of five or six, weighing approximately five kilograms. Eggs are sold by groups of three or five. Oils are sold by the liter.<sup>1</sup>

Generally the people are consistent in the way they sell items and the prices they ask. For example, in a long line of onion sellers, most of whom are selling their own products, everyone will have the same amount of onions in a group and all the prices will be the same. I was told this happens naturally because once a price has become common, everyone sticks to it for fear of getting less than they should. There are, of course, exceptions, especially with people who come to the market irregularly, such as one of the sorghum sellers I talked with in September 1978. He used a twenty-one by seven centimeter bowl and priced his red sorghum at 50 CFA a bowl. This was way below the market price of the day. Either he was in a hurry to sell his grain and be on his way or he had not yet caught on to what he could obtain.

As stated earlier, the prices for 1976 - 1979 were obtained from the monthly reports published by the Post Agricole. Within these reports are short explanations on the status of the crops, rains, roads, etc., all of which can and often do have effects upon the prices. In

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<sup>1</sup> See Appendix 3 "Mokolo Prices, Jan./Feb. 1979".

an effort to better explain the prices of this period, and to give examples of the types of factors that can affect prices in this area, I have excerpted all such explanatory statements from the reports.

They are as follows:

July - August 1976 - Record production of red sorghum, being called the Year of Sorghum.

September 1976 - White sorghum; dry weather early in August delayed plants from being put in place.

October 1976 - Due to dry spells during rainy season, farmers planted less acreage. Increase in production of garden vegetables -- onions, garlic and potatoes. Peanuts -- attack from insects impaired formation of hulls, but there should still be a good crop. Commercialization and transport have picked up.

November, 1976 - Good season of cotton and peanuts. Farmers want better prices for their peanuts.

March 1977 - Peanuts -- demand is higher than supply, causing problems. Actual price is 125 CFA per kilo as opposed to 45 CFA official price. Fear of farmers planting less cotton and more peanuts due to higher prices exists. Sorghum -- severe measures, which start fights, were taken to keep the sorghum from being sold outside of the department to help ward off the shortage.

May 1977 - Rains are late. Everything is held up. Animals are dying from lack of water and food.

August 1977 - Now receiving plenty of rain. Should have good crops if rains last until mid-October. Peanuts -- record production. Red sorghum -- attacked by caterpillars, thus will have a lower harvest than last year. Corn -- very active trading at markets. Production triple that of last year. Potatoes -- production exceeds last year's.

September 1977 - Good rains continue. Good for late crops. Peanuts -- in abundance at markets. Red sorghum -- harvest begins at end of the month. White sorghum -- more fields being planted than last year. Sweet potatoes around Mokolo crop was devastated by caterpillars. Beans -- cultivated a little everywhere because last year's prices were so high.

October 1977 - Rains continue until middle of month. Peanuts -- intensive harvest with abundant trading. Red sorghum -- harvest is nearly finished with high prices at market. White sorghum -- active transplanting with difficulty in finding plants.

November 1977 - Price of cotton has been raised to levels more satisfactory to local farmers. Red sorghum -- some places devastated by caterpillars. White sorghum -- being planted in greater quantities than last year due to signaling of possible famine because of intensive caterpillar devastation of rainy season crop. Sweet potatoes -- active

harvest and commercialization, thus impossible to give figures because selling is not controlled. Potatoes -- good roads guarantee good commercial activity. Arrival of traders from Guider, Garoua, Maroua, etc. stimulate trade.

December 1977 - Peanuts -- Official price was not accepted well by local farmers. Actual price is 110 CFA per kilo. Red sorghum -- what remains is immediately consumed.

January 1978 - Most difficult time for buyers and sellers with much debate on prices.

February 1978 - Cotton -- farmers complaining about high price of fertilizer. Peanuts -- production passes cotton since it is eaten locally. Prices are still attractive. White sorghum -- should be successful harvest. Sweet potatoes -- mediocre production. Garden vegetables abundant on market, i.e. carrots, onions, and tomatoes.

April 1978 - Rains begin.

June 1978 - Rains have been coming at convenient intervals.

September 1978 - All crops doing well.

October 1978 - Record rainfall, 987.6 millimeters. Red sorghum -- twice as good as last year. Peanuts -- suffer from too much rain.

November-December 1978 - Red sorghum -- good harvest due to regular

rainfall and quality production workmanship. Peanut traders have not come with their trucks yet since quantities still remain in Douala from last year.

January 1979 - Products doing well at markets. Commercants still not showing interest in buying peanuts. This risks financial hardship on areas where everything functions because of the sale of peanuts, especially around Kapsiki and Bourha.

February 1979 - Good harvest for everyone. The commercialization took a small setback due to the disruptive effect on Kousseri from the civil war in Tchad. Commerce has since picked up. Peanuts -- are now being bought.

The prices of peanuts as noted on the price list are those of the marketplace. These are higher than the prices commercants pay to local farmers when they travel around the department buying peanuts. It is the latter price that is discussed in the monthly reports, although it is the marketplace price which is listed. Summation of the prices paid by commercants for these years are:

Season 1976/77	125 CFA per kilo
Season 1977/78	110 CFA per kilo
Season 1978/79	65-80 CFA per kilo

The peanut buying season begins sometime in December and lasts through March or April, depending upon available quantities. There is

some variation throughout the season, both at different locations and at different periods of the season. This variation is represented in the prices for 1978-1979, which I have obtained during the various market visits. The prices for the other seasons were obtained from the monthly economic reports.

Prices are heavily influenced by the seasonality of a crop. For further information on these seasons, refer to the agricultural calendar. The prices listed do not reflect all the ups and downs that may occur within a single month, or of prices that may be obtained if one were to shop around and bargain determinedly. They do represent the most common price obtained by the majority of buyers. This assumption is supported by the fact that all sellers of a particular item are grouped together. Thus, if one seller is demanding a higher price, the buyer will move on to the next seller. Also, it should be noted that the monthly reports are made at the end of the month and are therefore reflective of these prices.

Official prices as mentioned in the excerpted statements are prices the government sets on cotton and peanuts. The price for cotton is controlled in this manner, but the price for peanuts cannot be. The farmer has the option of refusing to sell his peanuts and waiting for the next competing buyer to offer a more satisfactory price.

I visited the Mokolo market on September 20, 1978, and on February 21, 1979. The prices I obtained on the first visit cannot be directly compared with the prices on the reports because there is no listing

for September 1978. However, they can be compared to the prices of the preceding and following months. On September 20, 1978, the following prices were obtained:

Red Sorghum	90-95 CFA/bowlful	7000-8000 CFA/sack
Red and Yellow Mixed	90-100 CFA/bowlful	4500-7800 CFA/sack
Yellow Sorghum	90 CFA/bowlful	6000-7000 CFA/sack
White Sorghum	90 CFA/bowlful	7800-8500 CFA/sack
Peanuts	150 CFA/bowlful	10,000 CFA/sack
Beans	200 CFA/bowlful	10,000 CFA/sack
Corn	100 CFA/bowlful	6000 CFA/sack

The price of sorghum was slightly lower than the prices listed for August and October 1978. This was due to a surplus of sorghum during September because of remaining stocks from the previous season being marketed at the same time as new sorghum began to be marketed. The 1977 price list for sorghum shows a similar pattern.

The price of peanuts was the same in September as October, 150 CFA per bowlful. In September, beans sold for 200 CFA per bowlful, the same as August and October. September marketing took place at 100 CFA per bowlful, lower than in August but the same as November, December and January. The price is naturally lower than in August since the newly harvested crop was beginning to show up at the market.

On February 21, 1979, the following prices were recorded:

Red Sorghum	75-90 CFA/bowiful	4500 CFA/sack
Red and Yellow Mixed	75-90 CFA/bowiful	4500 CFA/sack
Yellow Sorghum	100 CFA/bowiful	6000 CFA/sack
White Sorghum	100 CFA/bowiful	6000 CFA/sack
Peanuts	125 CFA/bowiful	8000 CFA/sack
Beans	100 CFA/bowiful	Not available
Corn	Not available	Not available

The prices I obtained in February closely agree with those of the January and February economic report listed on the previous page.

Prices of the various crops correspond closely with the agricultural calendar, the success of a crop, and the market demand. In September 1978, the price of red sorghum was beginning to drop due to the newly harvested crop coming to market. By February 1979, the price dropped further due to an abundant harvest and the beginning commercialization of the newly harvested dry season sorghum. The dry season sorghum, white and yellow, was low in September due to a successful harvest the previous dry season, which had created enough surplus to last throughout the wet season. The prices of yellow and white sorghum in February 1979 was higher since supplies were diminishing and the new harvest had not yet shown at the markets.

Peanuts in September 1978 cost 150 CFA/bowiful, which was 50 CFA less than the previous month, August. This was due to the beginning of the harvest. By February 1979, the price had dropped to 125 CFA by my

records and remained at 150 CFA by the administration's records. These prices were due to an abundance of peanuts on the market and low demand at the marketplace.

Beans at the marketplace in September before the harvest cost 200 CFA/bowlful. After the harvest in February the price was 100 CFA per bowlful.

Corn cost 100 CFA/bowlful in September 1978, which is the beginning of the harvest. By February 1979, corn was unavailable in the marketplace.

The prices listed for sacks in September are practically meaningless. When asked the price of a sack, the seller would begin with a top price. To reach a final price, one must begin the bargaining process, which obligates the buyer to purchase the sack when a price has been agreed upon.

In February, I had an assistant who was more able to determine the prices since he himself was familiar with them. His prices correspond with the prices of yellow and white sorghum I later received from the office of the Sous-Prefect which appears below:

January 1979	6500 CFA/sack (80 kilo average)	Mokolo Market
February 1979	5500 CFA/sack	Mokolo Market
February 1979	4000 CFA/sack	A bush market
March 1979	4100 CFA/sack	Mokolo market

Prices were highest just before harvest and lowest just after. Had the previous season of this sorghum been unsuccessful, prices could have been as much as 8000-9000 CFA for one sack of 80 kilos.

The prices for February illustrate the difference between prices at a small local market and a major market such as Mokolo. It also illustrates the difference in prices of items bought near production site as opposed to when they are bought in an area where they are not grown.

## 2. Zamal Market

The market of Zamal is located by the river on the edge of the village of Zamal, which is located just off the Mokolo-Maroua road, nineteen kilometers from Mokolo.

It is a relatively small market in terms of people, approximately 120, spread over an area of approximately 1600 square meters. The market day is Monday from 8:30 a.m. to 12:00 a.m. The market has a variety of goods as is indicated by the diagram.

The market specialty is sorghum. On September 25, 1978, there were eighteen people selling sorghum and on March 26, 1979, there were twenty sellers of sorghum. All types of sorghum were being sold on each of the above dates. Most of the grain comes from the area around Gawar.

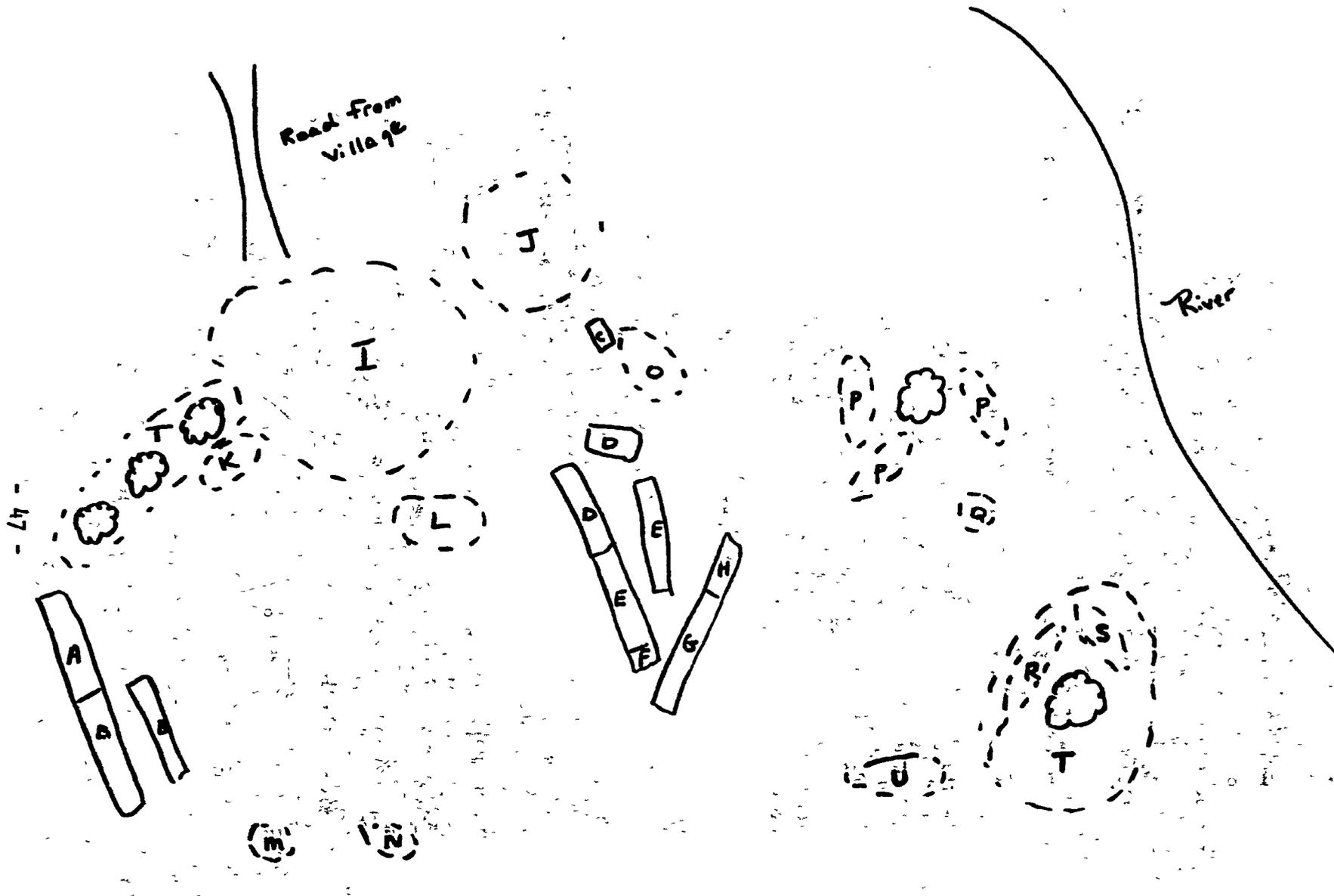
The market activity of September and March was similar in types of products available and numbers of people selling and buying. There

were, however, two basic differences. One was the active peanut buying activity of March and the other was the large amounts of fruits and vegetables available in September, as opposed to March when there was only one man selling a few carrots and mangos. These differences were due to the seasonality of the crops involved.

Another, less major difference, was that in September there were two women selling woven straw tops for calabashes. In March there were none.

The Zamai market is visited by the surrounding rural population of both the plains and the mountains, by the village people of Zamai, population 645, and by traders from Mokolo. The rural plains people sell mostly sorghum. They buy goods from the mountain people, local traders and traders from Mokolo. The rural mountain people sell peanuts, potatoes, pottery, and a sorghum drink, and buy sorghum from the plains people and other items from the traders. The village population engages in the selling of various items such as material, bicycles, calabashes, sheep, organic medicines, prepared food, fresh meat and dried fish. They buy products from the mountain people, the plains people and from the Mokolo traders. Traders from Mokolo buy sorghum from the plains people and peanuts from the mountain people. They sell a variety of manufactured items to the plains and mountain people and to the village population. Some of the buyers will resell the items in their own villages.

Refer to Questionnaire Results - Zamai for information on prices.



ZAMAI MARKET  
MONDAY MARCH 26 1979

## Key to Diagram of Zamai Market

- A - Five benches of meat for sale, by men.
- B - Twenty sellers of dried fish, one full burlap sack per seller. Different sizes of fish, all under eighteen centimeters, sold by men.
- C - One man selling carrots and mangos he brought from Mokolo.
- D - Manufactured items, sold by young and adult men.
- E - Material and local made clothing, sold by men. Material is hung from ropes to form the walls of each man's concession. Woven grassmat roof.
- F - Kola nuts, sold by men.
- G - Women selling prepared food, peanut rolls and "beignets", fried dough.
- H - Girls selling drinking water from clay pots.
- I - Twenty people selling sorghum from full and partially full sacks and from calabashes. Men sell from sacks and women from calabashes.
- J - Peanuts being bought by commercants, four large scales available and one truck. Local farmers bring in the peanuts by foot, bicycle, and donkey. They are carried in sacks, calabashes or tied pieces of material.
- K - Bicycle parts and repairs, two men.
- L - One man selling woven grassmats.
- M - Three men selling sheep.
- N - Two men selling skins of sheep.
- O - Six women selling pottery.
- P - Men selling new and used clothing.
- Q - One man selling calabashes.
- R - Four older men selling organic medicines.

S - Women and girls selling gla, non-alcoholic sorghum drink.

T - People sitting under trees.

U - Two men selling sweet potatoes.

### 3. Gamdougoum Market

The Gamdougoum market is located thirteen kilometers from Hina. It is accessible by very poor dirt roads from Hina and from Guili. It is a weekly market held each Thursday from 8:00 to 3:00 during both the dry and wet seasons.

It is a sizable market covering approximately 7,200 square meters. On the day I visited, March 29, 1979, the entire area was packed with people and goods.

The market specialty is peanuts. Hundreds of local farmers bring their nuts to this market to sell to buyers who come from Maroua, Mokolo, Gazawa, Bourha, Boukoula, Guili, Rhumsiki and Nigeria. At the time I visited, 11:00 a.m., there were six large trucks and several pickups being used to carry the purchased nuts. The entire area for peanuts was crowded with open piles of nuts, sacks of nuts, scales for weighing them, traders and farmers. Farmers were receiving 85 CFA a kilo, which was the highest price obtained at any market during the 1978-1979 season.

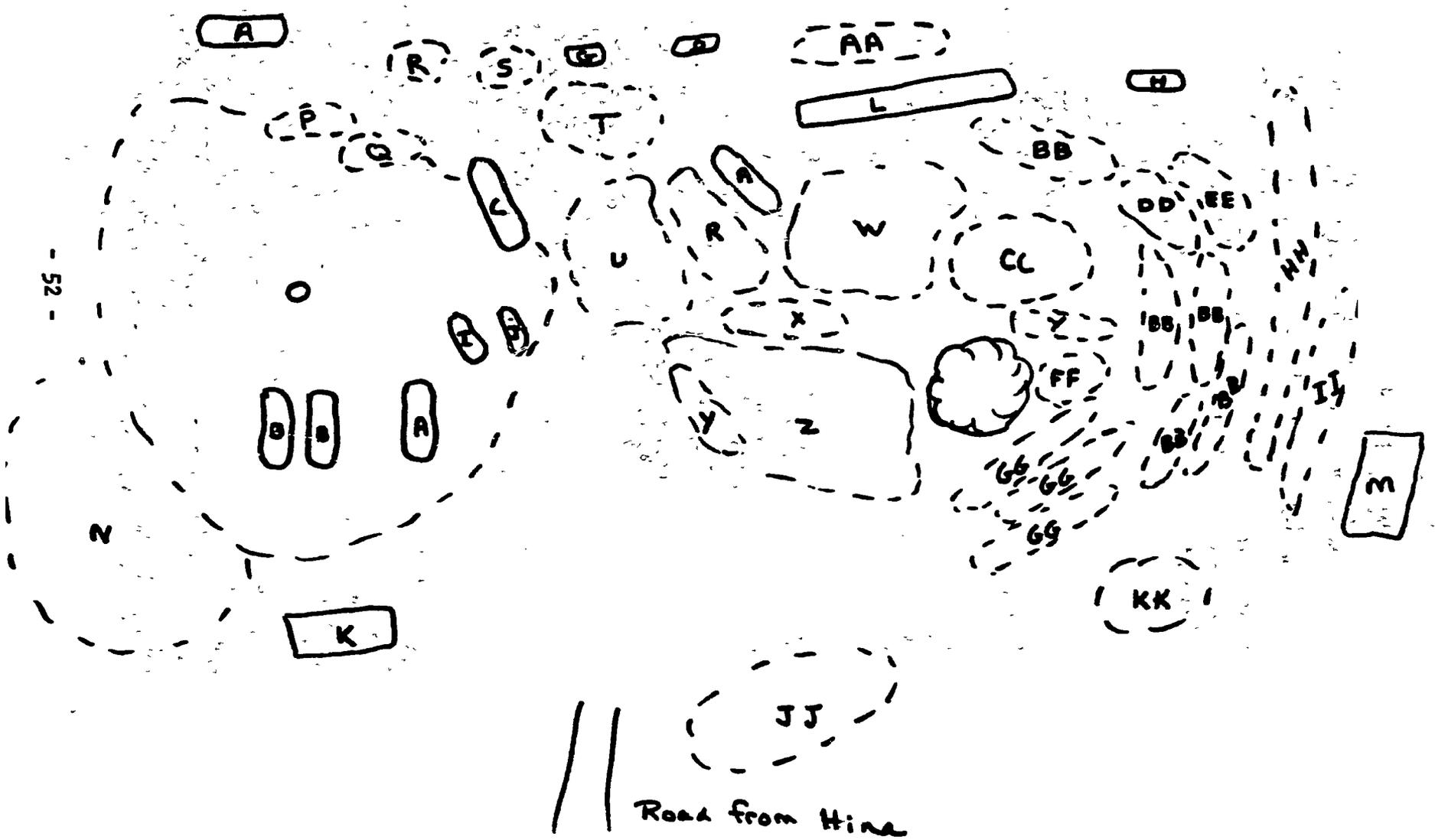
The rest of the market was almost as crowded. Traders, many of whom had come by trucks, were busy selling manufactured goods to the local farmers who had just received cash from the sale of their peanuts. The variety of goods included an unusually large selection of brightly colored materials and enameled pots intended, no doubt, to catch the eye of the newly paid farmer.

Another area of intense activity was the prepared food and drink sections. Here, women, girls, men and boys profitably catered to the hunger and thirst of the marketgoers.

Other sections of the market, as designated on the following diagram, were equally as active.

Road to  
Gamboura

GAMDOUGOUM MARKET  
THURS. MARCH 29 1979



**Key to Diagram of Gamdougoum Market**

**A - Trucks from Maroua.**

**B - Truck from Gazawa and Maroua.**

**C - Truck from Mokoio.**

**D - Pickups from Nigeria.**

**E - Pickup from Boukoula.**

**F - Pickup from Rhumsiki.**

**G - Pickup from Hina.**

**H - Pickup from Guider.**

**I - Pickup from Bourha.**

**J - Pickup from Gull.**

**K - Bicycles parked under grass hut.**

**L - Sugar cane sold by young men sitting under grass hut.**

**M - Grass hut restaurant.**

**N - Approximately fifty donkeys standing around.**

**O - Peanut area - large area packed with people buying and selling. Stacks of peanuts laid out for sale by the bowlful, as well as bags of peanuts for sale. Commercants with large scales buying peanuts from local farmers. Mostly men in this area.**

**P - Two metal workers, men.**

**Q - Sheet metal, sold by men.**

**R - Handmade ropes, sold by men.**

**S - Woven mats, sold by men.**

**T - Women selling drink from clay pots.**

**U - Sorghum sellers, mostly men.**

**V - Beans for sale, by men and women.**

- W - Variety of manufactured items.
- X - Calabashes, sold by women.
- Y - Onions, sold by men and women.
- Z - Women selling legumes of all sorts, sold mostly in small quantities.
- AA - Block salt, sold by men.
- BB - Material, both Nigerian and Cameroonian, sold by men.
- CC - Enameled pots, sold by men.
- DD - Prepared food, sold by women.
- EE - Men tailors.
- FF - Macabo, a root crop, sold by men and women.
- GG - Clothing, new and used, sold by men.
- HH - Long line of women and young girls selling sorghum drink.
- II - Men selling meat.
- JJ - Women selling pottery.
- KK - Men selling sheep; each man has about four sheep.

Exact figures on the numbers of sellers were impossible to obtain due to the tightness of the crowd and the difficulty of deciding who was selling and who was just standing around.

#### 4. Tourou Market

Tourou is located north of Mokolo at the Nigerian border.

It takes one hour to reach Tourou from Mokolo during the dry season. During the rainy season the town is inaccessible from Mokolo.

The market is held on Thursday from 8:30 to 12:30. It covers an area of approximately 1600 square meters. The market is visited by local people, Nigerians and a few traders from Mokolo. The majority of people come by foot, taking up to two hours to reach the market. There are usually one or two motorcycles and one or two pickups, belonging to the traders who come from Mokolo to buy peanuts from the farmers and to sell a small variety of manufactured goods, dried fish and salt.

The first thing one notices at the Tourou market is the absence of large quantities of anything. There were a few sacks of dried fish and a couple of sacks of sesame seeds. The remainder of items were in small bags or, more often, in small baskets or calabashes. Those items included peanuts, sorghum, beans, pois de terre, leafy vegetables and prepared food. Drinks and water were brought in clay pots.

I visited the Tourou market on September 21, 1978, and again on February 29, 1979. On September 21, questionnaires were administered to the available sellers. The results are located in the Appendix.

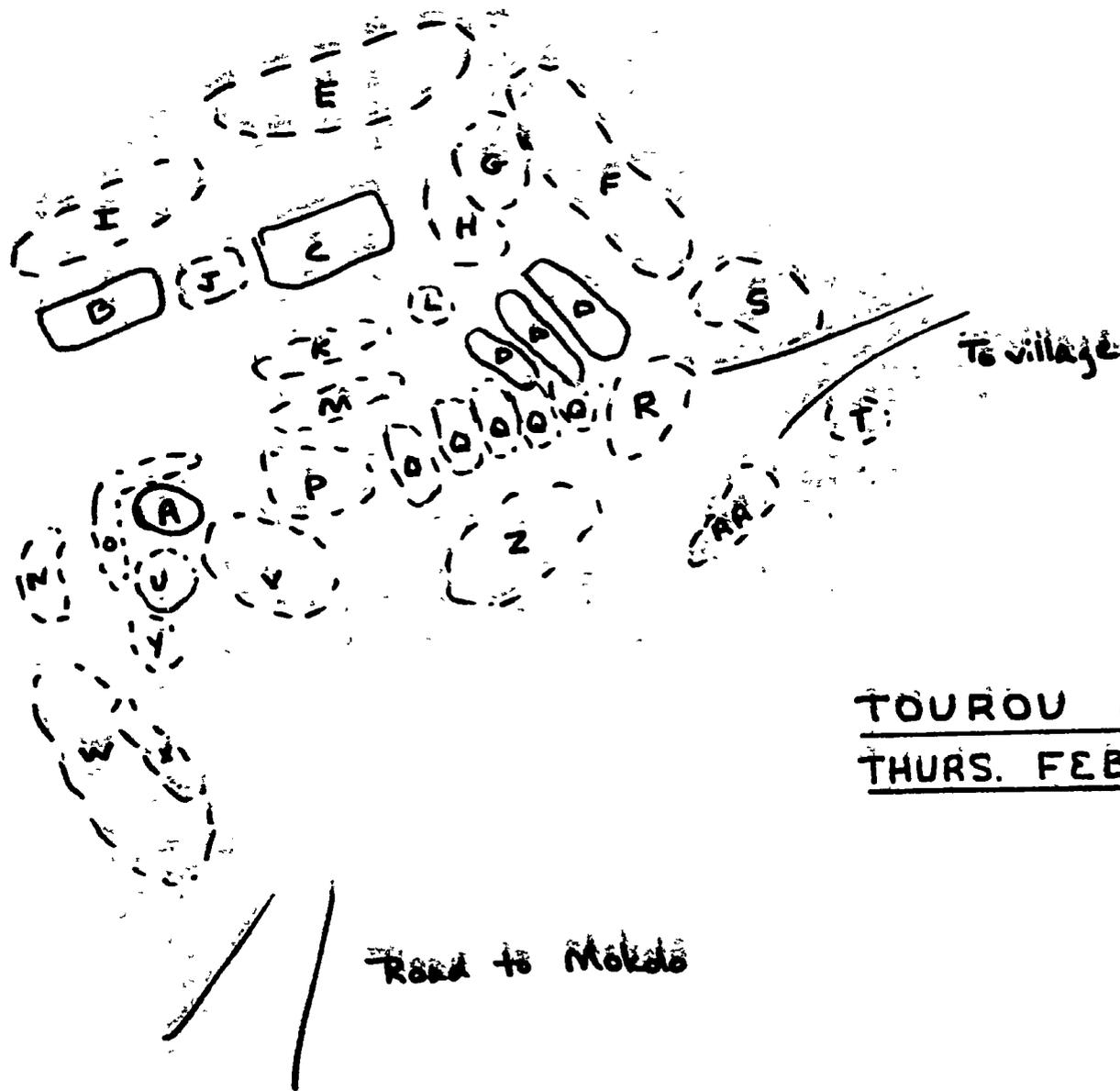
On September 21 we arrived in Tourou at 11:00 a.m. to find, much to our surprise, most of the sellers packing away their goods. Meanwhile, a group of men were playing simple wind instruments and

singing, and a group of women and girls all dressed alike in colorful skirts, beads and polished red calabash hats were dancing. As the business of the market continued to close down, the group of musicians, singers and dancers grew until it encompassed practically everybody at the market. The occasion was a marriage celebration. It continued until 1:30 p.m., at which time all the participants simultaneously left the marketplace.

These celebrations at the Tourou marketplace are quite common and, as this episode illustrated, they become more important than the business of buying and selling.

The second visit was on February 19, 1979. On this day there was no such celebration and the market was more active with buyers and sellers. There was again the distinct absence of large quantities of anything, although there was a larger variety of available items. The market lasted until 12:30 p.m.

For prices, refer to the Appendix, Questionnaire Results - Tourou.



TOUROU MARKET  
THURS. FEB. 29. 1979

### Key to Diagram of Tourou Market

- A - Mud hut with small assortment of manufactured items being sold inside.
- B - Women selling sorghum drink, sitting under grass mat shelters.
- C - Men just sitting under grass mat shelter talking.
- D - Women and a few men sitting under grass mats selling a variety of legumes, sesame seeds, pois de terre, peanuts -- roasted and raw, garlic, onions, fruit, and bean pods. These items were in small quantities being sold from small woven baskets and calabashes.
- E - Men selling goats.
- F - Women selling pottery.
- G - Men selling woven mats.
- H - Men selling skins.
- I - Women selling chickens. The chickens are brought to market in calabashes which have the tops tied back on with cloth.
- J - Shoe repair, two men.
- K - Men selling clothing, mostly skirts which are worn by women for the dances.
- L - One man working metal, knives and hoes.
- M - Men selling fish.
- N - Money changer, CFA and the Nigerian Naira.
- O - Young girls selling water for one Kobo a cupfull.
- P - Men and women selling small stacks of sweet potatoes and macabo.
- Q - Same as "D" above, but without grass mats overhead.
- R - Men and women selling peanuts in small quantities.
- S - Men selling sweet potatoes.
- T - Commercant buying peanuts from local farmer.

- U - Men selling Kola nuts.
- V - Manufactured items sold by men.
- W - Cooking and eating of meat brochettes rolled in peanut powder with spices, prepared by young men.
- X - Men selling meat.
- Y - Young boys selling peanut sticks.
- Z - Women and a few men selling small quantities of sorghum and a variety of beans.
- AA - Women selling large pots for carrying water.

## 5. Mogode Market

The Mogode market is held in the center of town, to the east side of the Mokolo - Rhumsiki road. It is a small weekly market which meets on Monday. Mogode is thirty-five kilometers from Mokolo.

The Mogode market starts later than the other markets I visited. On March 5, 1979, I arrived at the market at 10:00 a.m. to find the people just setting up. At that time they had just begun to butcher the cow for the meat section and only a few traders had their items on display. The peanut section, however, was in full swing. There were about twenty-five people gathered around each of the two scales, with several people waiting in the background under the trees. Each person had an average of three to four kilos for sale. The farmers were being paid 75 CFA a kilo.

After people had sold their nuts they would go over to the main market area. By 11:00 a.m. there was a substantial increase in the number of people at the market but mostly just at the wine section (section "E" on the diagram). In the other sections there were more sellers than buyers. By 12:00 the wine market was packed with people. I was told that the market would continue until late afternoon.

The market is attended mostly by the local people, the Kapsiki Tribe. The majority of them come to sell their peanuts and to celebrate afterwards. In the process, they do a little buying from the few available traders. Other local people just come to watch, and still others, especially the women, come to sell dried and fresh leaves,

spices, and bean pods from calabashes, and to provide prepared food and hot sorghum wine to whoever wants to buy it. Men cook the meat brochettes and young boys come to sell cigarettes, matches, canned fish, candy and packaged cookies.

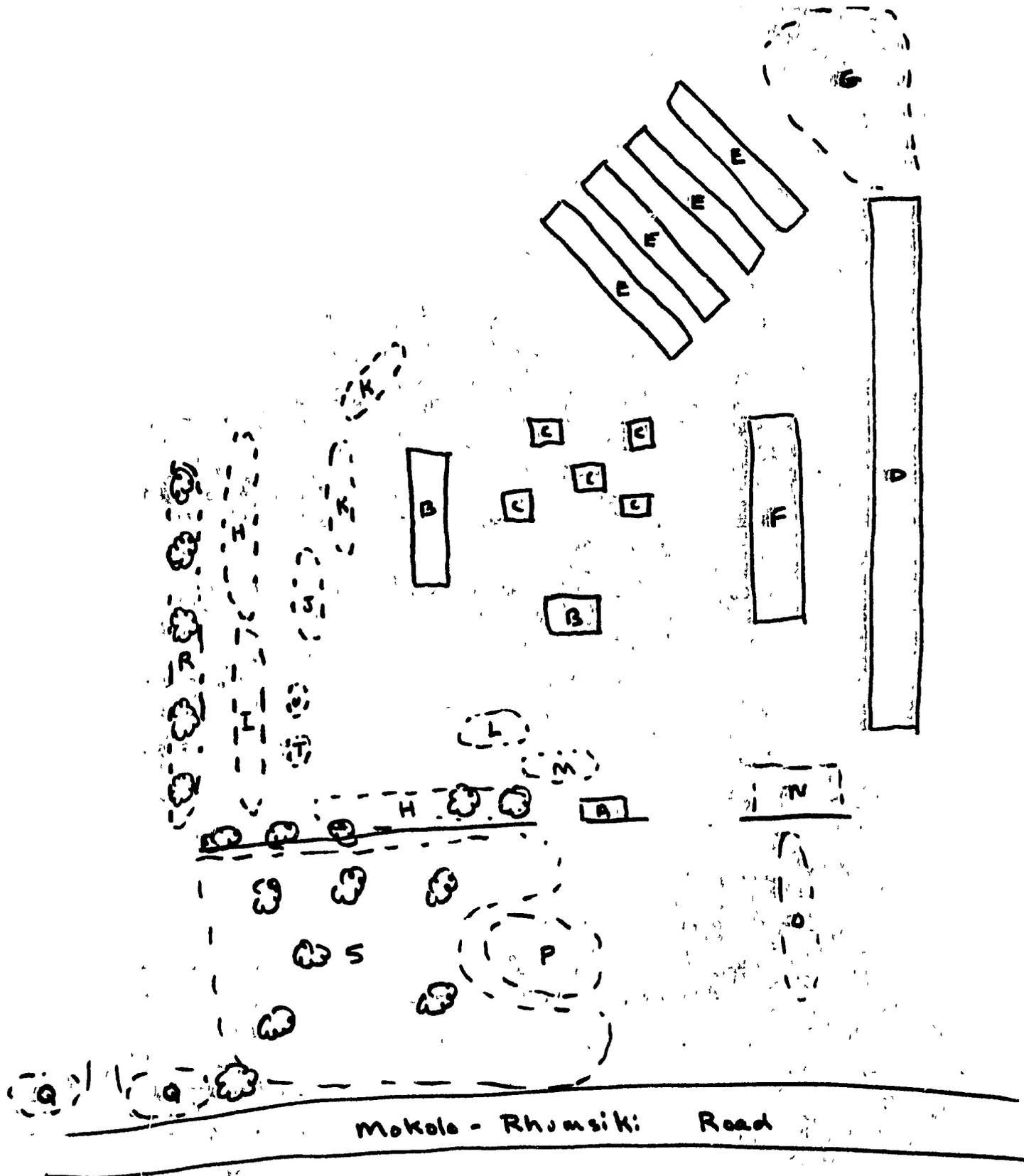
In addition to the local people who come to the Mogode market, there are the traders who come from nearby towns such as Mokolo, Roumzou and Rhumsiki. Although they do not number more than ten, their role is significant. The most important role they play is the purchasing of the local farmers' peanuts, which provides the main source of income for this area. In addition, they sell goods such as the cow for the meat section, dried fish, salt and a small assortment of manufactured items.

The majority of people, particularly the local people, walk to the market from the nearby areas. They carry their goods on their heads. The traders who visit the market come by motorcycle or truck. Some of the small commercants, young men selling cigarettes, matches, canned fish and candy, walk their goods to the market from their homes in town.

On September 25, 1978, the secretary for the Chef de Canton administered the questionnaires to various sellers at the Mogode market. The results, located in the Appendix, reveal that there were several items for sale, including all the major items of the area: peanuts, beans, corn, rice, potatoes and even sorghum. All of these are rainy season crops.

On March 5, 1979, there were no such quantities. Peanuts were the only item seen in abundance. I later asked why there had been no sorghum or other grains for sale. I was told that, except for peanuts, the farmers of this area keep what they grow since they do not have any surpluses. I was surprised that there had not been traders selling grains. I suspect that later on, when the farmers' supplies run low, the traders will find it profitable to bring in sorghum.

Prices obtained for September 1978 are located in the Appendix, Questionnaire Results - Mogode. Additional prices, obtained from some of the monthly economic reports for the Mogode area, follow the diagram of the market.



MOGODE MARKET  
MON. MARCH 5, 1979

### Key to Diagram of Mogode Market

- A - Man selling salt under grass mat shelter.
- B - Three young men selling a small variety of manufactured items under grass mat shelters.
- C - Empty grass mat shelter.
- D - Long grass mat shelter with local women and young girls cooking bean "beignets" in oil over small fires made with dried sorghum stalks.
- E - Wine market under grass mat shelters. Women serve cupfuls of hot sorghum wine from clay pots which sit over small fires. This is the most active section of the market.
- F - Fresh meat section. One cow has been cut up to serve the market.
- G - Men cooking meat.
- H - Men selling material brought in by bicycles and motorcycles. The material is hung on ropes tied between trees.
- I - Men selling cheap jewelry, string, safety pins and thread, brought in by foot.
- J - Men selling onions.
- K - New and used clothing, sold by men.
- L - Man selling woven grass mats.
- M - Woman selling lightweight baskets, the type used for carrying cotton or sorghum heads.
- N - Five men selling dried fish from burlap bags.
- O - Young men selling sugar cane, brought in by bicycles.
- P - About twenty local women selling a variety of fresh and dried leaves from calabashes.
- Q - Two commercants buying peanuts from local farmers, men and women, who have brought their nuts in by foot, bicycle or donkey.
- R - Older men sitting, talking and smoking their pipes.

- S - People scattered throughout the trees, resting and talking.  
Some are waiting to sell their parcels of peanuts to the commercants.
- T - Man selling a few hand screens, used for cleaning rice.
- U - Man selling simple digging tools, wooden handles with curved metal blades.

**Table 4 A. PRICES - MOGODE MARKET** (July 1977, July 1978, August 1978)  
( September 1978, October 1978 )

ITEM	UNIT	JULY 1977		JULY 1978		AUGUST 1978	
		KG. BY UNIT	PRICE PER UNIT	KG. BY UNIT	PRICE PER UNIT	KG. BY UNIT	PRICE PER UNIT
Sorghum	bowl	1.5	100	1.8	125	1.5	100
Peanuts	bowl	1.5	200	1.5	110	1.5	150
Beans	bowl	1.7	75	1.5	75	1.5	150
Sesame	bowl	1	125	-	-	-	-
Souchet	bowl	1	125	-	-	-	-
Vouandzou	bowl	1.7	100	1.5	100	1.5	100
Guava	carton	-	-	-	-	60	2500
Potatoes	sack	-	-	-	-	100	6500
Garlic	bowl	-	-	-	-	1.5	250

ITEM	NUMBER	SEPTEMBER 1978			OCTOBER 1978				
		KG. PER SACK*	PRICE PER SACK	TOTAL WEIGHT	NUMBER	KG. PER SACK*	PRICE PER SACK	TOTAL WEIGHT	PRICE PER BOWL
Red Sorghum	50 sacks	100	5000	5000	60 sacks	100	5000	6000	100
White Sorghum	30 sacks	100	6000	3000	45 sacks	100	6000	4500	125
Peanuts	130 sacks	70	6000	9200	20 sacks	85	8000	1700	115
Beans	10 sacks	80	6500	800	15 sacks	80	6000	1200	150
Vouandzou	5 sacks	80	5500	400	7 sacks	100	5500	700	-
Guava	60 cartons	50	2500	3000	100 cartons	50	2500	5000	-
Potatoes	294 sacks	100	6000	29400	120 sacks	100	6500	12000	-
Garlic	10 sacks	100	15000	1000	20 sacks	100	20000	20000	400
Sweet Potatoes	-	-	-	-	60 sacks	100	5000	60000	100
Corn	-	-	-	-	60 sacks	100	5000	60000	100
Red Pepper	-	-	-	-	-	-	-	-	-

\*Approximately 50 bowls per sack

**Table 4 B. PRICES - MOGODE MARKET (November 1978, December 1978)**

ITEM	NOVEMBER 1978				DECEMBER 1978				
	NUMBER	TOTAL WEIGHT	PRICE PER SACK	PRICE PER BOWL	NUMBER	KG. PER SACK	TOTAL WEIGHT	PRICE PER SACK	PRICE PER BOWL
Red Sorghum	70 sacks	7000	5000	75	80 sacks	100	8000	5000	75
White Sorghum	50 sacks	5000	6000	100	70 sacks	100	7000	6000	100
Peanuts	10 sacks	800	6000	125	40 sacks	80	3200	6500	125
Beans	60 sacks	6000	5000	100	80 sacks	100	8000	5000	100
Vouandzou	20 sacks	1600	8000	150	-	-	-	-	-
Guava	-	-	-	-	-	-	-	-	-
Potatoes	100 sacks	8000	10000	-	49 sacks	120	5880	14000	-
Garlic	10 sacks	1000	27000	500	5 sacks	125	625	35000	700
Sweet Potatoes	200 sacks	16000	1500	-	400 sacks	120	48000	1500	-
Corn	20 sacks	1600	8000	75	20 sacks	80	1600	6500	125
Red Pepper	6 sacks	420	20000	150	-	-	-	-	-

## C. Specifics of the Market System

### 1. Evolution of the Cash Based Marketplace

Most commercial activities are conducted at the marketplace, using money as the means of exchange. In the not too distant past, about ten years ago, there were fewer markets so commercial activities took place on an informal basis at random locations. During those times bartering was common. Now, however, there are seven to ten times as many markets, and cash has been introduced as the exchange medium. This increase of organized commercial activity was due to efforts by the government to encourage farmers to grow crops, such as peanuts, wanted by traders who were willing to come into the area and pay cash in exchange for the farmer's product. Now, since there are many markets, an estimated 250 in Margui-Wandala District, people prefer to conduct their business at the market where they can shop for the best bargain or have a large selection of buyers to sell to. Money is the preferred medium as is indicated by the Questionnaire results.

### 2. Origin of a Market

New markets evolve from the following process. When there is a sufficient population in a village, the people will tell their Chef du Village that they want a market. The Chef de Village then speaks with the Chef de Canton. The Chef de Canton gives his approval, then decides which day the market will meet. This decision is based upon the days of the other markets in the area. At this time, or shortly thereafter, the

Chef du Village will tell the Chef du Canton who will be Chef du Marche. The Chef du Canton again gives his approval. Thus the market begins and gains momentum as more and more people learn of it.

### 3. Chef du Marche

Each market has a Chef du Marche, appointed by the Chef du Village and the people of the village. He performs four major functions.

The first is to keep peace in the marketplace. If there is a fight or a dispute he will try to settle it. If he cannot, or if the disruption continues, he will turn them in to the Chef du Canton. He may also call upon the police if the situation warrants.

The second function is to keep the market organized. If someone has positioned himself or built a structure in a way that disrupts the flow of the market, he will instruct them to do it differently.

The third function is the collection of market taxes from the sellers at the marketplace. The Chef du Marche collects these taxes himself after the sellers have established their places. If there is a decision to be made on the price of a partial sack, he will make it.

The fourth function is to serve as an intermediary between functions of the market and functions of the government. He can provide information as well as carry out any directives of the government, such as the collecting of market taxes.

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When asked if the Chef du Canton always gives his approval, I was told "Yes, because the people know what they want."

The job of Chef du Marche is a status position in the community. Although he does not receive monetary compensation for his job, the Chef du Marche receives the people's respect for keeping order in a place everyone values.

#### 4. Traders

Traders, or commercants as they are called here, play an important role in the market system of Margui-Wandala. They not only give cash to local farmers in exchange for their products, but they also provide goods for sale which would otherwise be unavailable.

Commercants described here are of all types. There are the large commercants who deal in sizable quantities and therefore usually have available capital and major means of transport, such as flatbed trucks. There are the medium-sized commercants who do a more limited amount of buying and selling, and who usually operate within a smaller geographic area. They have, at the most, a small pickup, but more frequently only a motorcycle, mobylette or bicycle. There are also the small commercants who by contrast have extremely limited funds and no more than a bicycle or push cart with which to conduct their business. In some cases they operate entirely on foot, walking from one market to the next.

In Margui-Wandala there are few large commercants. I was told by the Chef des Commercants in Mokolo that there are no more than five commercants in Margui-Wandala who own trucks. Most of the large commercants operating in Margui-Wandala come from other districts. The greater

number of commercants in Margui-Wandala are the medium and small ones.

For the most part, all types of commercants are males. A few women buy and resell small quantities of salt, red pepper and dried fish, but generally the purchase of sorghum to make wine, which is then sold by the cupfuls, is the women's major buying and selling activity.

The following is a list of different types of traders who operate within the Mandara Mountains area market system. This list attempts to define the different activities traders engage in, as well as to help explain the types of roles they play within the economic system of this region.

1. Type that buys available quantities in his area and resells them to commercants outside the area.

Ex: Commercant from Mokolo who uses his two trucks to go about the district buying peanuts from local farmers at the various markets. He then stockpiles them in his compound and resells them to commercants who come from outside the district.

Ex: Commercants from Boukoula who buy quantities of beans, pois de terre, sweet potatoes and peanuts from the local farmers. They then resell them to commercants from outside the area, mostly from Nigeria.

2. Type that comes from outside the district to purchase quantities of available products collected by local traders. They will then resell the products elsewhere.

Ex: Commercants from Maroua, Garoua, Kousseri, and Douala who come to buy peanuts from the above-mentioned commercants.

Ex: Commercants from Nigeria who come to buy sacks of beans, pois de terre, sweet potatoes and peanuts from commercants in Boukoula.

3. Type that comes from outside the area; travels around purchasing small quantities from local farmers, resacks them in large bags, transports them out of the area and resells the product elsewhere.

Ex: Commercants from Maroua, Garoua, Kousseri and Douala who travel to various local markets and buy directly from the small producers.

4. Type that comes from outside the area to sell products from his own area.

Ex: Nigerian traders who come to Boukoula to sell baked bread, candy, packaged cookies, materials, embroidered hats, bicycle parts and other manufactured goods from Nigeria.

5. Type that goes to other areas to buy regional specialties and returns to resell them in smaller quantities to smaller commercants who then resell them at the local markets.

Ex: Commercant from Mokolo who goes to Kousseri once a week to buy large sacks of dried fish. He returns to resell them bag by bag to smaller commercants at the various markets.

6. Type which visits smaller local markets to buy quantities when the price is lowest to resell for a profit at larger markets and to stock-pile and resell when the price is higher.

Ex: Sorghum traders from Mokolo and Koza who travel around to the smaller markets, near and on the plains, to buy sorghum when the quantities are greatest and the price is lowest. They resell it continuously at Mokolo and Koza. As the quantities of sorghum decrease they are able to charge higher prices for the sorghum they have remaining in their stockpiles.

7. Type who sells daily from the same location at one of the larger markets.

Ex: Commercants who have small boutiques which are open daily at the large markets, Mokolo and Koza. They sell a variety of manufactured goods, canned foods, clothing and toiletries.

Ex: Traders at Mokolo who sell the same food item daily, such as sorghum and dried fish.

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Often the sorghum commercants hire others to sell the sorghum for them

8. Type that buys at one market in an area to resell at another market or markets in or near the same area.

Ex: Traders who purchase Nigerian goods at Boukoula and resell them at other markets within the district.

9. Type that purchases items at larger markets to resell to smaller markets.

Ex: Traders who purchase items from Mokolo market to resell at markets such as Rhumsiki, Haou, or Soulede.

10. Type that travels with entire collection to different markets on different days.

Ex: Commerçant who sells material from the back of his motorcycle. He goes to Rhumsiki on Sundays, Mogode on Mondays and Haou on Tuesdays.

Often, these different types overlap. For example, traders who come to sell items from Nigeria may also be buying items in Cameroon to resell in Nigeria. Another example is the boutique owner who often engages in the buying and reselling of seasonal products, such as potatoes, along with his normal activities.

##### 5. Manufactured Items

Manufactured items of some sort were found at all the markets visited. Many of the items are of Nigerian origin. They are either

brought over officially through the douane posts at Karawa or Boukoula, or unofficially anywhere along the lengthy border between Cameroon and Nigeria. Commercants of all sizes participate in this trade.

Other items, of Cameroonian origin, come from the larger towns of the northern province, particularly Maroua.

It is difficult to assess how many of the items originate from Nigeria or Cameroon since many of the items are made in other countries, such as Europe or China, and are brought through both Nigeria and Cameroon. Also, there are many similar items, such as material, made in both Nigeria and Cameroon. These articles are seldom marked and the people selling them differ in their responses as to the origin of particular items.

The movement of manufactured items ranges from truckloads of a single item transported to market, such as enameled pots, to young boys selling a few items.

At Mokolo and Koza goods are sold through small stores. In the other towns and villages they are sold at the marketplace from stalls or an open space where a trader has displayed his merchandise. In addition, there may be one or two places along the main road where a few things can be bought.

Manufactured items are sold only by members of the male population. The following is a list of manufactured items found at larger markets and, to varying degrees, at the smaller ones:

flashlights  
batteries  
flashlight bulbs  
lanterns  
pens  
pencils  
notebooks  
shoes  
shoe polish  
clothing  
material  
sewing items  
safety pins  
scissors  
umbrellas  
plastic billfolds  
costume jewelry  
watches  
mirrors  
razors  
razor blades  
toiletries  
toothpaste  
handsoap  
laundry soap

silverware  
teapots  
tea strainers  
dishes  
aluminum and enameled pots  
cigarettes  
matches  
packaged cookies  
packaged macaroni  
packaged rice  
packaged coffee  
packaged tea  
packaged sugar  
packaged candy  
canned fish  
canned tomato sauce  
canned vegetables  
bicycles  
bicycle parts  
aluminum sheets  
nails  
tools

## 6. Market Taxes

Taxes are paid by all sellers at the market. There are two types of market taxes.

The first is a small tax that everyone, except those paying the second type, must pay once he has reached the marketplace and is positioned to sell. This tax varies from market to market, and even within the same market. <sup>1</sup> The amount paid often depends upon the quantity of

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<sup>1</sup> See Appendix -- Questionnaire Results, question #7.

merchandise to be sold. For example, if a person has half a bag of sorghum and the tax of this particular market is 100 CFA, he may pay only 50 CFA. On the other hand, if he has one and a half sacks, he will not have to pay more than the 100 CFA. These taxes are payable at the marketplace to the Chef du Marche and the seller is given a receipt. The money is then turned over to the Bureau de Commune.

The second type of tax is actually the purchase of a licence, called "titre de patente." A seller must buy this if he is making a sizable profit. For example, if someone were making and declaring 500,000 CFA a year, he would have to buy a licence.

These licences vary in price but are usually not more than 15,000 CFA a year. The commercants selling sorghum at the Mokolo market each pay 15,000 CFA. Tailors, on the other hand, pay only 9,000 CFA a year. Once a seller has purchased his licence, he does not have to pay the smaller marketplace tax. This is why the results of the questionnaire showed that the sorghum sellers in Mokolo had not paid any marketplace tax.

These taxes are due yearly, payable each July, to the Sous-Prefet's office in Mokolo. If a commercant is late in paying, he will have to pay a fine in addition to the normal price. The Sous-Prefet's office periodically sends someone to verify that the commercants are correctly

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There is no set limit on how much profit a seller can make before he must buy a licence.

declaring their profits and paying their taxes.

Another type of patente is for purchasing large quantities of peanuts in the department of Margui-Wandala. These again are purchased from the Sous-Prefet's office in Mokolo. They cost about 15,000 CFA and are effective for one season of peanut buying, usually December through April.

All of the above taxes are turned into the Bureau de Commune. This revenue is then used to meet operating expenses of the Department.

In addition to market taxes, traders operating between countries must also pay customs at the border. This amount is dependent upon the price and quantity of goods. If the trader is exporting and importing large quantities, he must register in Maroua at the Bureau d'Inspection des Imports. This Maroua office is responsible for all the large importing/exporting commercants from the towns of Maroua, Yagoua, Kousseri, and Mokolo.

I was informed that there were no commercants this large in the Margui-Wandala District. Therefore, all commercants originating in Margui-Wandala are administered by the Sous-Prefet's office in Mokolo.

## 7. Socializing at the Markets

Markets of the Mandara Mountains also serve as meeting places. People come to socialize, talk with friends, watch other people, court, sometimes to drink sorghum wine made by the women and sometimes to dance.

In this respect there are two different kinds of markets. One type is the large market on a principal road which draws a variety of people of different regions and ethnic backgrounds. These markets, like Mokolo, Koza and Bourha, are generally business-oriented and socializing is minimal, often just conversing under trees, shopping with a friend or sitting and watching the people go by.

The second type is a more localized market which has a more homogeneous population. Most of the people know each other and socializing often becomes more important than business. These are the markets in which one most often finds the wine markets, or "Marche du Vin", where 50-75% of the market population may be found drinking sorghum wine. This is often accompanied by impromptu dancing. Of the markets I visited, Wanarou, Mogode and Haou would fall under the second classification.

The market at Tourou is also of the second type. Although there is no visible drinking, there is often dancing for specific occasions. At these times the market will almost completely close down and everyone who has come dressed for the occasion will dance in an organized fashion.

## 8. Wine Markets

Wine markets are social gatherings occurring mostly during the dry season. They are localized events where people come together to drink a hot-fermented sorghum drink prepared by the women.

These markets often occur in conjunction with a local weekly market. When this is so they are located adjacent to, or slightly removed from, the normal market. Of the markets I visited, there were wine markets at Mogode, Haou and Wanarou.

Drinking sorghum wine is a tradition of most of the tribes of this area, except for the muslims who oppose drinking. Since the muslims dominate the economic and administrative facets of life in this area, there is never wine drinking at markets where there are many muslims, such as Mokolo, Koza, Bourha, or Zamai.

In the above towns, however, there will usually be places in the neighborhoods, either public or private, where the local farmers who have come to market can go and drink. The more public places are sometimes designated by a flower of some sort set in a bottle outside the door. Most of them are known by reputation. The private places are usually homes of relatives or friends.

Although the administration looks down on wine drinking, especially the use of the sometimes scarce sorghum for the wine-making, there is little they can do to stop it without risking a great upset with the local populace. It is only when there is a very short supply that they will attempt to stop the wine markets from occurring.

#### 9. The Role of Women at the Marketplace

Women are active members of the market scene. At the various markets women and young girls were found to be selling fruit, vegetables,

spices, prepared food and drink, beans, peanuts, small quantities of sorghum, salt, dried fish, chicken, pottery, baskets and wood.

They are active buyers of most of the items available, especially food, kitchenware, costume jewelry, toiletries, clothing and material.

#### 10. The Selling of Water at Mogode

Water selling in Mogode is similar to that in Mokolo and Mora, where one pays for the transport of water delivered to the home, rather than for the actual water, which is free at the source, either a well, a river or a hole dug in a dry river bed.

In Mogode, water is delivered for 25 CFA a twenty-liter jerry can. Push carts, which hold five twenty-liter jerry cans, are used to transport the water.

#### **IV. RECOMMENDATIONS**

As a result of studying various markets and speaking with various people, including administrative officials, missionaries, project directors, traders, buyers and other local inhabitants within the Department of Margui-Wandala, specifically in the mountain areas, I recommend that the following suggestions be considered for future development activities aimed at generating more income for the people of the Mandara Mountains region.

- A. Improved Crop Production
- B. Improved Storage Facilities
- C. Agricultural Cooperatives
- D. Garden Projects
- E. Fruit Trees
- F. Reforestation
- G. Resettlement Projects
- H. Handicraft Cooperatives
- I. Road Improvement
- J. Training Programs
- K. Machine Shop

## A. Improved Crop Production

An improved crop production project will include programs in land improvement and improved agricultural techniques.

### 1. Land Improvement

The surface of the terraced mountainsides and the adjacent sloping plains has badly eroded due to poor farming practices which have left the terrain unprotected against the hot dry winds of February through April and the hard rains of May through September. What soil remains is infertile from years of use without replenishment.

A land improvement and preservation program will include:

- a. controlled grazing of animals;
- b. controlled burning;
- c. crop rotation;
- d. improved terracing to retain more soil and water;
- e. cover crop to replenish soil and check erosion;

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During the dry season farmers burn the ground to rid themselves of insects and rats, as well as to clear the fields for replanting and to stimulate new grass growth for the animals to eat. The burning is completely uncontrolled. It is not uncommon to see an entire mountain burning when a few fields would have sufficed.

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Terracing is now done by rock and soil formation, thus allowing soil and water to pass over. The addition of twigs, leaves and a mulch would help alleviate this flow.

- f. mulching of crops to retain moisture, replenish the soil and check erosion; and
- g. fertilizer of locally available organic materials.

## 2. Improved Agricultural Techniques

Improved agricultural techniques to increase crop production will include:

- a. measure to improve and preserve soil fertility as listed under preceding section;
- b. use of mulch to discourage weed growth;<sup>1</sup>
- c. Increase the number of plows for those areas where they can be used;
- d. Introduction of wheelbarrows, carts and wagons which can negotiate rocky terrain;
- e. Introduction of simple machinery such as thrashing machines and peanut hullers.

Furthermore, the possibility of using simple irrigation systems should be explored.

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Weeding is a major activity during July and August. It frequently requires a greater effort than is possible by the present practices of each person using a short-handled hoe.

## **B. Improved Storage Facilities**

Improved storage facilities are recommended to:

1. Increase food supply by decreasing amount destroyed by insects and rats;
2. save the farmers' capital by decreasing the amount of additional food purchased from traders at inflated prices;
3. lower market prices by decreasing market demand on available supplies; and
4. improve quality of food eaten by people and animals, i.e. under duress partially spoiled food will be eaten by people or fed to their animals.

Individual family granaries are a strong tradition in all the tribes of the Margui-Wandala District. A successful program to improve food storage must continue to provide for individual family storage units.

### C. Agricultural Cooperatives

Agricultural cooperatives will provide the means for local farmers to gain a larger share of the profit on their products. At this time farmers sell many of their products to traders who then transport and sell elsewhere. In most cases the profit margin is small for the farmer and large for the trader, especially when the trader has the means of buying and transporting large quantities to profitable markets. Cooperatives would develop the means for taking over the middleman's role in commercialization of the products.

Agricultural cooperatives would further stimulate commerce by providing the farmers with ready markets for their products. Knowing they could sell certain products at a reasonable profit would encourage them to grow as much as possible. Since certain items, such as sweet potatoes, potatoes, and beans grow only in the mountains, there would be little problem in marketing these items to Nigeria, Chad or the other departments surrounding Margui-Wandala.

To assure maximum profits for the local farmers, the cooperative should encompass all food products of the area and remain in operation year-round.

Another reason for a cooperative is to provide basic food items, specifically sorghum, at reasonable prices during shortages. Now, during times of high demand and low supply, farmers are forced to pay high prices to traders who have stockpiled sorghum for the sole purpose

of reselling when the local supply dwindles.

The agricultural cooperative would also be used for channeling seeds, including any improved or new varieties, to the local farmers. Information on the best techniques for growing these seeds could be dispersed at the same time.

In order to be effective, the cooperative centers would have to be accessible to all the people. It is therefore recommended that they be located at the major and most popular markets. Business between the cooperative and farmer would occur on the normal market day of the specific market. The suggested markets would include: Mokolo, Koza, Mora, Zamai, Mogode, or Rhumsiki, Bourah and Hina. Each center would handle the specialties of the immediate area as well as the basic food crop, sorghum.

In order for agricultural cooperatives to be effective in the Mandara Mountains area, the following would be necessary:

1. Cooperation of the administration to help alleviate the inevitable opposition of those middlemen who stand to lose profit in light of a successful cooperative.
2. Immediate capital and continuous credit possibilities must be assured. Even if all the farmers were to pool their resources they could not derive enough capital to begin operations. Credit would be needed at various times to make large purchases, such as trucks or machinery.

3. Training in Cooperative Management will be necessary since the people of this area have no concept of what a cooperative is or how to manage one.
4. A publicity program for introducing the idea to farmers is required. It will require a major effort to win the farmers' trust since the idea of mutual benefits is unfamiliar to them. They will also need to be informed on how to participate.
5. Infrastructure, vehicles and materials will be provided. Buildings, including storage facilities, will be needed at various locations to facilitate the business of the cooperative. Vehicles will be needed for transporting the products to profitable markets. Materials include all those items such as office equipment, produce containers, farming tools, seeds and information.
6. Supervision will be necessary for several years to insure successful implementation. Since knowledge of cooperatives is nonexistent, supervision will be needed to keep the operation on the right track as well as to help resolve problems which might damage operations.

It is suggested that the cooperative project be coordinated with the Department of Community Development for Margui-Wandala, the "Section Departement du Developpement Communautaire du Margui-Wandala."

#### D. Garden Projects

Garden projects are recommended for increasing the quality and quantity of garden items grown and for insuring that the items reach suitable markets.

As mentioned earlier, garden products of Margui-Wandala are those items which are watered manually, at least in part. These products include carrots, lettuce, tomatoes, the second crop of potatoes and onions.

Maroua, Garoua, and possibly Chad, depending on the present war-situation at this writing, will continue to be profitable markets for garden items. There is every indication that these markets could absorb more produce. It is often difficult to find items at these markets and the prices are always high. In addition, other items could profitably be introduced, such as melons, cucumbers, green beans, beets, cabbage, squash and peppers. The same people who buy the present garden items, the foreign community and Cameroonian government workers, could be counted on to increase their consumption of these products in the future. This segment of the population is increasing with the increase of development projects in the north. Also, as the educational and financial levels of the general population rise, people will become more interested in buying a greater variety of garden food items.

The garden projects should be coordinated with the agricultural cooperative. They should be introduced slowly to enable the cooperative

to find suitable markets before farmers spend time, money and effort on producing vegetables they often do not eat themselves.

Garden projects should emphasize crops that grow better in the cooler mountain climate than on the plains. This would include beans, squash, cabbage and beets. Produce which is favored by the local population should also be encouraged. This would include okra, onions, garlic, squash and red peppers. A successful garden project would furnish the needed seeds along with information on how to cultivate them.

It is recommended that these projects be located around Mokolo and between Mokolo and Maroua for ease of distribution to Maroua and Garoua. Projects near Mora would only be suitable if the disturbed political situation in Chad settles to allow a more stable market.

Market potential for garden items sold to Nigeria requires further investigation. The nearest major Nigerian town is Maidugari.

## E. Fruit Trees

Increasing the number of existing fruit tree species and introducing new varieties are possible means of generating additional revenue for the local population.

At this time, guava is the most abundant fruit. It is available at all the markets in great abundance when in season. Mango is the next most available fruit. It comes into season just after the guava. Lemons and limes are available only at the larger markets. Papayas are only occasionally seen at even the larger markets.

Several officials in the Margui-Wandala administration indicated that there would be no problem selling more fruit if it were available. They stated that there is a big demand from both Nigeria and Chad. In the 1976 and 1977 economic reports for the Prefecture of Mokolo, it was mentioned that buyers came from Garoua and Kousseri during October and November to purchase guavas and mangos. Those arriving from Kousseri were exporting the major portion of the transported fruit to Chad. The practice was continued in 1978. Trucks going between Nigeria and Cameroon take partial loads of fruit when they are reentering Nigeria. Unfortunately, the present war situation in Chad has diminished the possibility of a stable market with that country.

The Cameroonian Government is now occupied with increasing the number of guava, mango and citrus trees. The Forestry Service has

established nurseries for the propagation of those fruit trees for eventual distribution throughout the Margui-Wandala District. The October 1978 economic report states that there are 348 mango trees and 116 guava trees presently being grown, and that 1000 mango, 1000 guava and 200 lemon and lime trees have already been planted. It was stated that these trees were grown for their adaptability to rural areas and for increasing production.

At the present time, I believe the above efforts are sufficient to increase the production of these fruits to their present market potential.

Papaya production could be increased but, since it is a simple fast-growing plant, it might better be included in garden projects, at least until the market value could be determined.

Further development would be the introduction of new varieties of fruit trees which could be grown in the mountain soils to possibly take advantage of the slightly cooler climate, and which would provide a marketable fruit. One possibility is the orange tree. There are no quality oranges in the north of Cameroon. Oranges are brought up from the south of Cameroon to the larger cities, Garoua and Maroua, or are flown in from Morocco or Spain to be sold in the best European stores. No oranges were seen in Mokolo or the other markets visited.

If a quality orange could be grown in the mountain area, a ready market would be government workers from the south, and the foreign

community in the larger cities. These markets would include both Diamare and Benoue Districts, as well as Margui-Wandala. Nigeria and Chad would be probable markets.

Other new possibilities might include the grapefruit, cashew nut, pomegranate tree or even the passion fruit vine. Local market possibilities for these or any other new variety could only be determined after their introduction.

Fruit trees provide advantages other than the fruit for eating and selling. The leaves can be used for feeding goats. The wood is used for cooking and heating. The trees provide needed shade. For further discussion on the use of trees refer to the reforestation section.

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<sup>1</sup> Refer to Les possibilites d'amelioration de la production et de la qualite des fruits au Tchad by Heinz K. Wutscher which is annexed to this report.

## F. Reforestation

A massive reforestation project would bring economic returns as well as social and environmental benefits.

At present the administration has a small program of providing trees for various towns. This year trees were grown by the Forestry Service for future planting in Mogode. A few towns have already been provided trees. The number of trees given to each town is usually only sufficient to line the main roads.

I recommend that a larger program be implemented which would provide a continuous wood supply for present use as well as offer additional benefits from an increased supply.

Trees are presently utilized in the following ways:

### 1. Wood

- a. All households use wood fires for cooking and for heating during the colder winter months.
- b. Young girls and women sell small stacks of wood along the roadside and occasionally at the markets. A bundle costs 50 CFA and includes approximately eight to ten pieces, one meter long and three to six centimeters in diameter each. The wood is sold to people who would rather buy their wood than collect it themselves.
- c. Hoes, beds, roofs and the support base for granaries are fabricated from the available wood.

## 2. Leaves

- a. Leaves are fed to the goats.
- b. Ashes from burned leaves are used for gardens.

## 3. Shade

Trees provide protection against the sun for people and animals.

Additional benefits from an increased wood supply would provide:

1. more wood for the above uses;
2. shade for delicate garden plants;
3. future construction material for carts, wagons, furniture, and various simple tools;
4. mulch material for gardens and crops;
5. enrichment material for the soil, such as nitrogen fixation;
6. protection against soil erosion; and
7. guard against desert encroachment.

A reforestation project would require close supervision. The administration has stated that people do not understand the necessity of reforestation and therefore will not take the necessary steps to protect newly planted trees. This includes watering them during the first couple of dry seasons and protecting them from destruction by goats before they are well established.

It is suggested that at least a couple of varieties of trees be grown throughout the region. Selection of these trees would be based

on fast-growing and wood quality properties as well as their suitability to the local soil and weather conditions. A variety of tree species would help provide insurance against devastation should one of the species be attacked by pests or adverse weather conditions.

This program should be coordinated with fruit tree production for combined advantages.

## **G. Resettlement Projects**

Support given to resettlement projects, which assist families in moving from the mountains to the adjacent plains, is recommended. There are at present two resettlement villages in the Margui-Wandala District: Djalingo and Sava. The administration is interested in organizing additional ones.

Reasons for this recommendation are as follows:

1. The agricultural land in the mountains is being overfarmed, and the soil is being depleted.
2. There is no surplus land to absorb the growing population.
3. New villages would provide needed opportunities for people without land.
4. More land would be put into production, providing more food to eat and sell.
5. Improved farm methods can be more easily introduced at the beginning stages of a village's development.
6. They would provide an opportune starting place for other projects such as gardens, small animal husbandry, fruit orchards and handicrafts.
7. Commerce would be further stimulated between the mountain people and those on the plains by virtue of proximity.

Djalingo is a pilot village within the prefecture of Mokolo. It was created in 1976 at a cost of 1,600,000 CFA, financed by SOCOPED.

It is located five kilometers from the Zamai-Hina road. I visited the village on March 29, 1979.

There are twenty-one families living in small painted mud houses organized on a grid pattern. Each family has two rooms plus a kitchen and an outside area that can be enclosed with straw mat walls. A large bore hand-dug well is located in the center of the village. The fields are adjacent to the village and are also organized on a grid pattern. The crops grown and their production figures, as obtained from the Department of Community Development, appear in Table 7 below.

Table 7.

Crop	Hectares	Production (tons)	Tons/Ha
Cotton	7	9.100	1.30
Peanuts	5.5	8.250	1.50
Sorghum (dry season)	10.5	10.500	1.00
Beans (vouandzou)	11	8.800	.80
	34		

Djalingo is reported by the same source as being a modern village which introduced specific grouping of the various crops, sowing in straight lines, animal drawn plows, insect control and reforestation.

The village of Sava was not visited.

The goals for the resettlement villages are: to slow the exodus from rural to urban areas; to stimulate modern living; and to improve rural living conditions.

It is not recommended that future projects by AID would create the new villages, but that they would lend support by supplying capital, materials and training.

## H. Handicraft Cooperatives

Since the Mandara Mountains are densely populated and the land is marginally productive, one must look for alternatives to agricultural pursuits. Handicrafts offer a suitable choice. Handicraft cooperatives, like agricultural cooperatives, insure the greatest amount of profit for the producer.

There are generally two types of handicrafts in the Margui-Wandala District. The first type are those articles made and used locally, available at the markets and rarely sold to tourists.

Handicrafts made and used locally are listed below.

1. Pottery - large pots for storing water, medium-large pots for carrying water, urns for serving drinks and various sizes for cooking.
2. Baskets - lightweight baskets for carrying cotton or sorghum heads, tightly woven baskets for carrying grains and vegetables, and decorative woven lids to cover baskets and calabashes.
3. Woven grass mats - various sizes for sitting and sleeping on the ground, as shelters from the sun, as privacy walls around the homes and as door coverings.
4. Beds - made from small sticks of equal size, approximately fifty-five centimeters tall, ninety centimeters wide and 180 centimeters long, used as beds and benches from which to sell items at the markets, such as fresh meat.

5. Cloth - simple woven plain cloths, and garments made from hand-processed and woven cotton; no color dyes are used.
6. Leather - simple sandals, small pouches and straps.
7. Metal - small knives, hoes, and simple jewelry.

Handicrafts for tourists are available at the hotels in Mokolo, Rhumsiki and Mora, at the Sunday market in Mora, or from the art cooperative at Djingliya.

At the hotel handicrafts are sold by traders from makeshift grass mat shelters. The number of traders present depends upon the season. Tourist season is from October to April. During this time there are usually two to three traders at each hotel in Rhumsiki and Mora, and six to seven at the hotel in Mokolo. During the off-season there are no traders at the Rhumsiki hotel, which closes, and only half the usual number at the other two hotels.

The handicrafts at the hotels are sometimes locally made and sometimes made in other parts of Cameroon or in Nigeria. They include metal statues, containers, bells, simple weapons, beaded and metal g-strings, embroidered shirts and table cloths, ivory pieces, simple musical string instruments and clay fetishes.

The one market in Margui-Wandala which sells a significant amount of handicrafts to tourists is the weekly market in Mora. It is a conveniently located market, one hour from Waza game park and one hour from Maroua. Common tourist attractions here are the different tribal

peoples, decorated calabashes, old silver jewelry, old weapons, knives in leather sheaths, straw hats and various articles the local people use.

The art cooperative at Djingliya, called the Cooperative Artisanate de Djingliya, is located between Koza and Mokolo. It was founded and is presently run by the Catholic Mission. Articles for sale include baskets of various shapes and sizes, woven cotton shirts with embroidery, purses made of woven grasses and cotton, hats made of grasses or animal hair, clay figures, vases, cups, bowls, and ashtrays, metal tools, weapons, jewelry, and religious crosses, wooden masks, statues, candlestick holders, animals, wall plaques and drums made of animal skin.

Handicraft classes are offered by the mission. All the articles for sale in the store are made at the cooperative or in the nearby area. All prices are fixed and marked. Sample price ranges are:

1. Baskets, 150 CFA for the simplest to 1000 CFA for a basket with a lid;
2. Wooden masks, 1000 - 3000 CFA;
3. Pottery, 50 CFA for small bowls to 350 CFA for vases, 400-600 CFA for large pots, 30-50 centimeters in diameter;
4. Drums, 1600 CFA for a medium size, 45 centimeters in diameter and 25 centimeters deep.

The administration is satisfied with the art cooperative because it makes a profit each year. For example, in 1977 it showed a profit

of 556,000 CFA. As a result, the government would like to develop additional art cooperatives.

All signs indicate that the present market for handicrafts made especially for sale to tourists will continue as long as tourists come to visit the Mandara Mountains region. The attractions are the nearby Waza game park, the terraced mountainsides, the volcanic outcrops around Rhumsiki and the markets at Mora and Maroua.

If the volume of handicrafts were increased, the quality improved and new items added, presumably more profit could be made and additional markets secured. Additional tourist markets would include the hotel at Waza, the hotels in Maroua and the Maroua market. The local market could include the whole Northern Province, depending on quantity, quality and usefulness of items made.

Handicraft cooperatives will be the means by which training and materials are provided. Like the proposed agricultural cooperative, it would also handle the distribution of products to profitable markets.

Handicrafts should be encouraged with the local population, the Cameroonian population of other districts, and tourists in mind. It should be noted, however, that tourists provide the most lucrative market with the added advantage of bringing outside money into the area.

Suggestions for additions and improvements are:

1. Textiles - use the locally available raw cotton, process it by introducing hand machinery, add color dyes, create patterns

based on indigenous designs and use a weaving loom for the final product. Woven cotton blankets are an ideal product to begin with since they can be simple, practical and attractive. Potential buyers would include the local population which requires blankets for protection against the cool mountain winds and tourists who buy them for aesthetic reasons. Single layer blankets of the rough cotton weave are now occasionally available through traders who purchase them in Nigeria. A single-bed size covering, white with few colors, can bring 8,000 CFA from visiting tourists.

2. Sewing - fabricate articles from the cloth produced by a textiles project and from materials available in the local markets.
3. Embroidery - create new designs and use better materials.
4. Pottery - Improve the quality of potting clay.
5. Wood-working - Improve workmanship on all wooden products.
6. Leather - Improve tanning methods and workmanship.

## **1. Road Improvement**

A road improvement project would offer the following advantages for commercial activities:

- 1. help reach inaccessible villages;**
- 2. provide better surfaces on which to use donkeys, carts or wagons for transporting goods and materials;**
- 3. facilitate travel and thus commerce during the rainy season;**
- 4. facilitate travel and thus commerce with bordering districts and countries, i.e. Benoue, Diamare, Nigeria and Chad.**

## J. Training Programs

Training programs and seminars will be needed for all of the recommended projects. These programs will be aimed at the rural population.

Two different levels of training must be offered. The first to the adults who will be participants in the new projects. Their programs and seminars will be given in the local language since the majority of the adult population does not speak French. The second level of training will be for those members of the population who have had some schooling. They speak French and have rudimentary reading and writing skills. Their programs will be conducted in French.

Under the present school system 80% of the children who enroll in school will drop out by the 6th level. It is this segment of the population who will receive the second level of training as stated above. They are an important group to train since they are between the ages of ten to twenty, which means they are too young to take over their family's occupation and too old to be unemployed. In addition, the majority of them are not heirs to land. These are the members of the population who flock to the nearby cities seeking employment. Training which leads to gainful employment will encourage at least a portion of them to remain in the region. This will be the generation responsible for the region's prosperity.

#### K. Machine Shops

A machine shop program would facilitate the fabrication of tools, machinery and simple transport vehicles needed for the other recommended programs. It is suggested that a graduating student from the Centre Technique from Maroua be assisted in setting up a shop in Mokolo which would hire apprentices to be trained in simple shop work. The trained apprentices would gradually be assisted in setting up village level workshops. This program should be introduced after other projects are underway and a demand for the above products has been established.

## L. Fisheries

Fisheries are recommended for the Mandara Mountains area if they are deemed feasible from an ecological point of view, since fish is a highly marketable item in this area.

Fish is a popular food with all sectors of the population. The government workers as well as many of the higher income traders purchase fresh fish brought from Kousseri once a week. The local farmers settle for dried fish, which is brought from Kousseri in burlap bags and is eventually distributed to all the markets. During the rainy season some fresh fish is caught and sold locally.

Fresh fish from Kousseri costs between 900 - 1500 CFA a fish, usually capitaine, depending on its size. Dried fish at the markets costs approximately 50 CFA for three or four fish, three to four inches each.

Every market I visited had dried fish for sale, all of which had come from Kousseri.

A fisheries project should be aimed at providing the local populace with fresh fish to eat as well as to sell. What is not eaten or sold immediately could be dried for later consumption, or for later sale.

The price of the dried fish for sale would have to be competitive with the prices of existing supplies. If the fish produced by the fisheries were comparable in price to chicken, the local population could occasionally afford to buy it as an alternative. Chickens are priced at 400 to 700 CFA each, depending on their size.

The most secure market would be those people who already buy fresh fish. This would prove especially true if the fish from the fisheries were in better condition than the fish which have traveled three to four hours from Kousseri to Mokolo.

The best markets for this population would be Mokolo and Koza. People from other towns who want fresh fish would come to buy from these markets at the same time they come to purchase other items unavailable in their area.

## V. APPENDICES

1. Questionnaire and Results
2. Estimation of Planted Hectares  
Agricultural Year 1978/1979
3. Mokolo Prices, Jan. Feb. 1979
4. Analyse des Reponses de 10 Cultivateurs du MII Interviews  
Sur Leur Muskwaré De La Campagne 1977/1978
5. Compte Rendu Sur La Campagne Arachidiere 1977/1978.
6. Les possibilites de la production et de la qualite des  
fruits au Tchad

## APPENDIX I

### QUESTIONNAIRE

The following questionnaire was administered during the month of September 1978 to various individual sellers at the five originally selected markets.

The questionnaire was a first step in the research for this study. It was intended to provide various information from which further study could follow. It was never intended to provide reliable statistical data and thus should not be interpreted as such.

For these reasons, I have included the results of each questionnaire as obtained from the various sellers. Each case provides important information as to the kinds of happenings within the market system of Margui-Wandala.

No final analysis will be made of the results, but their contents are referred to from time to time throughout the text.

The questionnaires were administered by myself and one or more assistants. Upon arriving at a selected market, we immediately assessed which basic food crops were the most important in terms of volume and number of sellers. Then two sellers of each variety of each important crop were randomly chosen to answer the questions.

Cooperation from the seller in answering the questions was fairly good since there was usually an assistant from the administration to accompany us, who impressed upon the people that they had to answer our

questions.

The prices obtained for bowlfuls are felt to be fairly accurate since the majority of products are sold in this manner, and the costs are common knowledge. As a result, there was less tendency to try to fool us. Also, since it was clear we were not buying, there was no reason for them to give us false prices. This is further supported by the fact that most prices given were comparable for similar items and similar amounts at any given market.

This assumption does not hold true for prices for a full sack. Since a seller stands a chance of earning the best profit in the minimum amount of time by selling a full sack, prices given were often those which would start the bargaining process. We did not bargain for lower prices since if a price is agreed upon you are obliged to buy. More information on the prices of sacks is available on the section "Prices".

There are several instances where two sellers of a particular crop were not available for questioning. Sometimes this was due to shortage of a particular item, and sometimes due to lack of time to question people before they left. This only occurred for those items which were not very prevalent, but which I wanted to include for the purpose of additional information on potentially important items.

All answers read from top to bottom in the order of the questions asked, except for Question #4, which covers two columns and reads side to side.

Some answers are incomplete. This is due to impatience on the part of the seller and a lack of persistence on the part of the interviewer to prevent unnecessary annoyance when answers were not terribly important.

Prices quoted from last year or last month are not reported since the majority of people said they did not know.

QUESTIONNAIRE

Marche \_\_\_\_\_  
Date \_\_\_\_\_  
Heure \_\_\_\_\_

Marchandise \_\_\_\_\_  
Type \_\_\_\_\_  
Vendeur no. \_\_\_\_\_

Ethnie \_\_\_\_\_  
transport \_\_\_\_\_  
Aller/Retour \_\_\_\_\_

Village \_\_\_\_\_ Moyens de  
duree approximative du voyage, \_\_\_\_\_

Prix unitaire	Aujourd'hui	D'annee derniere en cette saison	Il y a un mois
taille du bol			
diametre _____			
hauteur _____			
1/2 sac _____			
un sac entier _____			
autre _____			

1. Quelle quantite pense-t-il vendre aujourd'hui? \_\_\_\_\_  
Combien a-t-il deja vendu? \_\_\_\_\_  
Est-ce qu'il echange sa marchandise contre une autre? \_\_\_\_\_  
Quelle marchandise? \_\_\_\_\_
2. Qu'achete-t-il avec l'argent qu'il gagne de la vente de sa marchandise? \_\_\_\_\_
3. Combien de fois vient-il vendre a ce marche? Saisons des pluies \_\_\_\_\_  
Saison seche \_\_\_\_\_
4. A qui vend-t-il sa marchandise? (Donner les noms des ethnies et des vil-  
lages d'ou les gens viennent) \_\_\_\_\_
5. Est-ce qu'il vend a des gens qui revendront, eux-memes, la marchandises?  
Qui? (Donner les noms des ethnies et des villages) \_\_\_\_\_
6. Ou revendront-ils la marchandise? \_\_\_\_\_
7. Quelles taxes doit-il payer pour vendre a ce marche? \_\_\_\_\_  
A d'autres marches? \_\_\_\_\_
8. A quels autres membres se rend-t-il? (Donner les noms des marches, les joui  
et s'il y va pour vendre ou acheter ou les deux) \_\_\_\_\_

Votre Nom \_\_\_\_\_

## MOKOLO - Questionnaire Results

Wednesday Market and Daily

Visit: September 20, 1978

10:00 - 12:00 noon

SELLERS OF:	ETHNIC & VILLAGE	TRANSPORT MEANS & TIME	PRICE & SIZE OF 1 BOWL	PRICE OF 1 SACK	QUESTION #1	QUESTION #2	QUESTION #3	QUESTION #4	QUESTION #5	QUESTION #6	QUESTION #7	QUESTION #8
#1 Red Sorghum	Matakam Godala	foot ---	18 x 7 100	8000	1 sack none yes - clothes	clothes	each Wed.; everyday	women mts.	women who make wine	---	none	none
#2 Red Sorghum	Matakam Mokolo	---	21 x 7 50	7000	6500 3/4 sack clothes, fish,meat, drink	clothes sauce ingred.	each Wed.; each Wed.	doesn't know	women who make wine	at their homes	none	none
#1 White Sorghum	Matakam Haou	foot ---	19 x 7 90	8500	2-3000 410 CFA fish	clothes meat everything	each Wed.; everyday	all the women	no	---	none	none
#2 White Sorghum	Kapsiki Rhumsiki	taxi ---	18 x 7 90	7800	3 sacks 3500 CFA clothes drink,fish	clothes drink fish	each Wed. each Wed.	the women	women who make wine	---	none	Rhumsiki Sun.
#1 Yellow Sorghum	Foulbe Mokolo	foot 7 min.	19 x 7 90	7000	1 sack 33 bowls no	gives to wife for food	everyday; everyday	Mafa,Foulbe, Sudists, Ma- basse, Rhum- siki,Kuiepe Li bam	no	---	50 CFA	Douval Kousseri Maroua buys
#2 Yellow Sorghum	Foulbe Mokolo	foot 10 min.	19 x 7 90	6000	1/2 sack 17 bowls no	meat peanuts beans	2-3 days/ wk;4 days/ wk	Mafa,Foulbe, Sudists,Dam- sai,Mavoumai, Souglia,Givei, Oupai,Gouzda, Soulede	no	---	none his patron pays	Mabasse Kousseri Maroua any

MOKOLO - Questionnaire Results (continued)

SELLERS OF:	ETHNIC & VILLAGE	TRANSPORT MEANS & TIME	PRICE & SIZE OF 1 BOWL	PRICE OF 1 SACK	QUESTION #1	QUESTION #2	QUESTION #3	QUESTION #4	QUESTION #5	QUESTION #6	QUESTION #7	QUESTION #8
#1 Small Millet	Mafa Koza	foot 3 hrs.	19 x 7 95	7000	1 sack ½ sack no	clothes food	everyday everyday	Mafa, Foulbe, no Sudists, Mabase, Douvai, Oudai, Soulede, Ouzda	no	---	50 CFA	Mabasse buys Kousseri Maroua Rhumsiki
#2 Small Millet "Penicillaire"	Mafa Gavai	foot 10 min./ 10 min.	19 x 7 100	6000	14 bowls 4 bowls beans, corn peanuts	donkey clothes food farmhand	rarely 3 times/ wk.	Foulbe, Mafa, Sudists, Mokolo, Givei, Mabase, Rhumsiki	no	---	100 CFA	none
#1 Peanuts	Kapsiki Mokolo	taxi ---	18 x 7 150	10000	doesn't know; 300 CFA no	buys more peanuts to sell	each Wed. each Wed.	women	women for making oil	at the markets	50 CFA	none
#1 Beans	Mafa Rhumsiki	foot doesn't know	19 x 7 200	10000	1 sack 6 bowls peanuts, corn, beans, sorghum, potatoes	clothes meat	doesn't come; each Wed.	Foulbe, Mafa, Sudists	Foulbe Mokolo	Mokolo Nigeria Maroua	50 CFA 200 CFA	Kossohai sells
#1 Corn	Foulbe Mokolo	foot ---	18 x 7 100	6000	5000 CFA none everything	everything	each Wed; eveyday	doesn't know	no	---	none	none
#2 Corn	Foulbe Mokolo	foot corn comes by can	19 x 7 100	6000	1 sack 2 bowls potatoes	potatoes	everyday; everyday	women	no	---	50 CFA	Rhumsiki Sun.

## ZAMAI - Questionnaire Results

Monday Market, Weekly

Visit: September 25, 1978 at 10:10 - 12:00 noon

SELLERS OF:	ETHNIC & VILLAGE	TRANSPORT MEANS & TIME	PRICE & SIZE OF 1 BOWL	PRICE OF 1 SACK	QUESTION #1	QUESTION #2	QUESTION #3	QUESTION #4	QUESTION #5	QUESTION #6	QUESTION #7	QUESTION #8
#1 Red Sorghum	Musselman Mayo Lade	donkey 6 hrs.	19 x 9 100	5500	50 bowls; none; no	food & pay farm help- ers	none; 1st time	Matakam, Foulbe, Soulede, Zamai, Tchouvoc	yes; women who make wine	he doesn't know	100 CFA sack; 50 CFA sack	MayoLade Thurs. sells
#2 Red Sorghum	Foulbe Mayo Lade	donkey 6 hrs.	20 x 10 100	6000	1 sack 50 bowls; no	clothes & pay farm helpers	none; 1 time/yr.	Matakam, Foulbe, Soulede, Tchouvoc	he doesn't know	---	100 CFA sack	none
#1 Yellow Sorghum	Foulbe Mayo Lade	donkey 6 hrs.	18 x 10 125	7500	1½ sacks 30 bowls; no	clothes	5 times; rarely	Foulbe, Matakam,Sou- lede,Zamai, Tchouvoc, Mafa	doesn't know	---	100 CFA sack	none
#2 Yellow Sorghum	Foulbe Gawal	donkey 6 hrs.	21 x 11 120	7700	2 sacks; 20 bowls; no	peanuts	2 times; doesn't	Foulbe,Ma- takem,Sou- lede,Mokolo, Zamai,Tchou- voc	no	---	100 CFA sack; 50 CFA	Gawal Wed.
#1 Peanuts	Goudow Gadala	foot 1hr./ 1 hr.	18 x 9 100	9000	3 bowls; none; no	meat	doesn't 1 time	Foulbe,Ga- zawa,Mokolo	yes - Maroua Mokolo Garoua	Maroua Mokolo Garoua	50 CFA; 50 CFA	Gadala
#2 Peanuts	Foulbe Zamai	foot 5 min./ 5 min.	20 x 11 125	9000	5 bowls; none; no	clothes farm helpers	5 times; 5 times	Foulbe,Ma- takem,Sou- lede,Mokolo, Gazawa	yes - Foulbe, Gazawa, Mokolo	Gazawa Mokolo	---	none
#1 Corn	Gulziga Djalingo	bicycle 2 hrs./ 2 hrs.	19 x 7 125	½ sack 3750	18 bowls; 11 bowls; no	clothes shoes	none; each Mon.	people from Mokolo,Zamai, Mouhour,Sou- lede,Tchouvoc	yes - Mokolo	Mokolo	hasn't pd.yet	Wanarou Tues. visit only

ZAMAI - Questionnaire Results (continued)

SELLERS OF:	ETHNIC & VILLAGE	TRANSPORT MEANS & TIME	PRICE & SIZE OF 1 BOWL	PRICE OF 1 SACK	QUESTION #1	QUESTION #2	QUESTION #3	QUESTION #4	QUESTION #5	QUESTION #6	QUESTION #7	QUESTION #8
#2 Corn	Guiziga Pomla	bicycle 30 min./ 30 min.	20 x 7 125	6000	44 bowis; none; no	clothes, meat, fish, salt, sugar, matches	each Mon.	Foulbe, Mafa, Zama, Mokolo, Sou- tede, Tchouvoq	yes- Mokolo	Mokolo	100 CFA sack	Gawao Wed/ buys; Zamai & Sa- bongai/sel

## TOUROU - Questionnaire Results

Thursday Market, Weekly

Visit: September 21, 1978 11:00 - 12:20

SELLERS OF:	ETHNIC & VILLAGE	TRANSPORT MEANS & TIME	PRICE & SIZE OF 1 BOWL	PRICE OF 1 SACK	QUESTION #1	QUESTION #2	QUESTION #3	QUESTION #4	QUESTION #5	QUESTION #6	QUESTION #7	QUESTION #8
#1 Small Millet	Hide (Matakam) Gossi	foot 2 hrs.	17 x 6 4 shillings; 80CFA	---	12 bowls; 8 bowls; no	clothes meat goats	2 times/ month; all the time	Mafa Niger- ian; Hide, Ma- dagai; Koza, Mafa, Moskoia, Ldengldeng, Libam, Ri- doua, Roua,	yes - Musselman, Mokolo, Koza, Roua	Mokolo Koza	20 CFA 20 CFA 20 CFA	Madagai Gossi
#1 Peanuts	Magouzo Touf	foot 1 hr.	16 x 7 200	12000	doesn't know; 2000; no	more peanuts	each Tues; each Tues.	Nigerian; Bouche	no	---	20 CFA	none
#2 Peanuts	Mafa Dgenden	foot 1hr./1hr.	100 nuts 20 CFA	---	400 CFA 200 CFA no	clothes chicken sorghum	1 time; 1 time/ month	Hide, Mussel- man, Mafa, Ni- gerian, Tou- rou, Madagali, Wandai, Mabase, Magoumaz, Libam, Oupai	yes - Musselman, Mafa, Bor- Mosogo	Mokolo Koza Mosogo	20 CFA 20 CFA 20 CFA	Hogomaz Wandai Mabase Madali
#1 Beans (Cowpeas)	Matakam female Tourou	foot 2 hrs.	16 x 6 100	not avail- able	15-20 bowls; 1 bowl; yes- dishes; clothes	dishes clothes	each Thurs.; each Thurs.	Gras	no	---	---	none
#2 Beans (red)	Gras female Touf	foot 1hr./1hr.	15 x 7 80	not avail- able	300 CFA 300 CFA clothes	clothes	each Thurs; each Thurs.	Gras	no	---	20 CFA	none

TOUPOU- Questionnaire Results (continued)

SELLERS OF:	ETHNIC & VILLAGE	TRANSPORT MEANS & TIME	PRICE & SIZE OF 1 BOWL	PRICE OF 1 SACK	QUESTION #1	QUESTION #2	QUESTION #3	QUESTION #4	QUESTION #5	QUESTION #6	QUESTION #7	QUESTION #8
#1 Sesame	Soupas Koulkobai	foot 2½hrs./ 2½hrs.	12 x 10 275	5200	8 bowls 400 CFA	chicken goats	each Thurs.; each Thurs.	Gras	yes-to women who make soup	---	25 CFA	none
#1 Pois de Terre	Malistra Bouche (Nig.)	foot 2hrs./ 2hrs.	14 x 6 60	not avail- able	doesn't know; 60 CFA; yes,meat	meat	1 time; 1 time	Maskatas, Lerdem, Dhebon, Gamassis	no	---	25 CFA	Bouche

## MOGODE - Questionnaire Results

Monday Market, Weekly

Visit: September 25, 1978 8:00 - 10:00

SELLERS OF:	ETHNIC & VILLAGE	TRANSPORT MEANS & TIME	PRICE & SIZE OF 1 BOWL	PRICE OF 1 SACK	QUESTION #1	QUESTION #2	QUESTION #3	QUESTION #4	QUESTION #5	QUESTION #6	QUESTION #7	QUESTION #8
#1 White Sorghum	Kapsiki Mogode	foot --	21 x 8 ---	6000	1 sack 2 sacks no	clothes taxes	1 time; 1 time	Kapsiki, Rhumzou, Kapsiki area	Rhumzou, Kapsiki area	Mokolo	25 CFA	Mokolo Wed. visit only
#2 White Sorghum	Kapsiki Kawale	foot 2½hrs.	--- ---	6000	3 sacks none no	clothes taxes	--- ---	Kapsiki, Rhumzou	no	---	25 CFA	Kawale Mieika (N)
#1 Peanuts	Kapsiki Kawale	foot 2½hrs.	--- ---	6250	15 sacks 17 sacks no	cows, goats sheep, taxes	2 times; 4 times	Kapsiki, Mogode	yes- Musselman, Garoua	Douala Garoua	50 CFA 50 CFA	Rhumzou Sun. sells
#2 Peanuts	Kapsiki Rhumsiki	foot 2hrs.	21 x 8 ---	6250	8 sacks 18 sacks no	clothes taxes	1 time; 3 times	Kapsiki Mogode	yes - Musselman. Garoua	Douala Garoua	25 CFA	Sir Mon.
#1 Beans	Kapsiki Mogode Teki	foot 1½hrs.	21 x 8 ---	9000	1 sack 3 sacks no	sheep taxes	1 time; 2 times	Kapsiki, Mogode	yes - Kapsiki, Rhumzou	Mokolo	25 CFA 25 CFA	Rhumzou Sun. visit only
#2 Beans	Kapsiki Mogode	foot 45 min.	21 x 8	9000	2 sacks 1 sack no	clothes save	1 time; 1 time	Kapsiki, Mogode	yes - Kapsiki, Mokolo	Mokolo	25 CFA 25 CFA	Rhumzou visit only
#1 Potatoes	Kapsiki Mogode	foot ---	--- ---	6000	3 sacks --- no	clothes Taxes	--- ---	Kapsiki, Mogode	yes - Musselman, Mokolo	Mokolo	25 CFA	Sir visit only
#2 Potatoes	Kapsiki Teki Mogode	foot 1½hrs.	--- ---	6000	2 sacks ---	taxes	1 time; ---	commer- cant from Mokolo	yes - same as #4	Mokolo	25 CFA	Rhumsiki Sun.

MOGODE - Questionnaire Results (continued)

SELLERS OF:	ETHNIC & VILLAGE	TRANSPORT MEANS & TIME	PRICE & SIZE OF 1 BOWL	PRICE OF 1 SACK	QUESTION #1	QUESTION #2	QUESTION #3	QUESTION #4	QUESTION #5	QUESTION #6	QUESTION #7	QUESTION #8
#1 Corn	Kapsiki Kawale	foot 2½hrs.	---	4500	3 sacks ---	taxes clothes	1 time; ---	Kapsiki, Rhuzou	yes - Kapsiki, Mokolo	Mokolo	25 CFA	Rhumsiki Sun.
#1 Rice	Kapsiki Mogode	---	21 x 8 ---	6000	2 sacks 1 sack	clothes	1 time; 1 time	Kapsiki, Mogode	no	---	25 CFA	---
#2 Rice	Kapsiki Kawale	foot 2½hrs.	21 x 8 ---	6000	1½sacks none no	taxes	1 time; ---	Kapsiki, Mogode	no	---	25 CFA	

## KOZA - Questionnaire Results

Sunday Market &amp; Daily

Visit: September 24, 1978 9:10 - 11:40

SELLERS OF:	ETHNIC & VILLAGE	TRANSPORT MEANS & TIME	PRICE & SIZE OF 1 BOWL	PRICE OF 1 SACK	QUESTION #1	QUESTION #2	QUESTION #3	QUESTION #4	QUESTION #5	QUESTION #6	QUESTION #7	QUESTION #8
#1 Red Sorghum	Mandara Goldavi	donkey 2hrs./ 2hrs.	22 x 13 150	6000	2 sacks 4 bowls no	sorghum clothes	1 time/ wk; 1 time/wk	Musseiman, Mafa, Gouz- da, Djingila	yes - Mafa, Gouzda, Sou- lede Djingila, Maoua Kouyepe	Gouzda, Soulede, Djingila, Maoua Kouyepe	50 CFA	Kolofata buys
#2 Red Sorghum	Matakam Koza	foot --	22 x 12 150	6500	2-3 sacks 10 bowls no	small sor- ghum; school money for children	1 time/ wk; 1 time/wk	Mafa, Musselman, Djingila, Koza, Gouz- da, Soulede	yes - Mafa	Koza Soulede	50 CFA	none
#1 White Sorghum	Mafa Koza	foot 5 min.	20 x 13 150	7500	1 sack 5 bowls no	food	1 time/ wk; 1 time/wk	Mafa, Musselman, Djingila, Doungar, Massa. Mayo Soulede	yes - same as #4	same as #4	100 CFA	none
#2 White Sorghum	Mandara Maoua	foot. 1hr./ 1 hr.	22 x 12 150	6000	2-3 sacks 2 bowls no	food clothes children's school	1 time/ wk; 1 time/wk	Mafa, Foulbe, Banki (N)*, Kraoua, Djingila	yes - Mafa, a Nigerian Banki (N) Mokolo	same as #5	50 CFA 50 CFA	Maoua

\*(N) after names denotes Nigerian town.

APPENDIX 2

ESTIMATION OF PLANTED HECTARES POST AGRICOLES - MOKOLO, HINA AND MOGODE AGRICULTURAL YEAR 1978-1979

Estimation of Hectares Planted by June 1978

POST AGRICOLE	RAINY SEASON SORGHUM	DRY SEASON SORGHUM	PENICIL-LAIRE	CORN	RICE	PEANUTS	COTTON	POTATOES	SWEET POTATOES	MANIOC	NIEBE BEANS	VOUANDZOU
Mokolo:												
Matakan-Sud	12,500	328	8,330	35	61	4,305	3,175	40	190	55	1,850	205
Mokolo	2,300	0	1,020	6	8	1,020	0	6	30	21	313	81
Hina:												
Hina	4,023	1,053	195	58	23	983	0	0	15	20	460	129
Mokong	3,182	124	152	45	12	733	0	3	14	15	362	102
Moufou	3,074	928	146	46	13	709	0	2	12	16	352	78
Gawar	2,280	1,798	113	40	11	549	0	0	11	15	264	99
Boula	1,191	397	63	22	20	296	0	0	7	8	152	44
Zamai	1,051	578	52	19	3	203	0	0	9	9	124	33
Mogode:												
Kapsiki	3,200	5,160	900	85	5	2,250	0	85	97	24	3,050	14
<b>TOTAL</b>	<b>32,801</b>	<b>10,366</b>	<b>10,971</b>	<b>356</b>	<b>156</b>	<b>11,048</b>	<b>3,175</b>	<b>136</b>	<b>385</b>	<b>183</b>	<b>6,927</b>	<b>785</b>

Excerpted from Rapport D'Activites Agricole Mois d'Octobre Mokolo

APPENDIX 3

MOKOLO PRICES Jan. Feb. 1979

Product	Unit of Measure	Equivalence in kg. or cl.	Average Price
Red Sorghum	bowl	1500	75
White Sorghum	bowl	1520	100
Rice	kg	1000	130
Flour	kg	1000	125
Potatoes	kg	1000	100
Sweet Potatoes	stack	3300	100
Okra (dried)	bowl	360	110
Peanuts	bowl	1960	150
Beans	bowl	1700	100
Ignames	stack	3750	400
Macabo-Taro	stack	1260	100
Plaintain	stack (7)	900	140
Red Pepper	bowl	800	400
Peanut Oil	liter	920	300
Onion	stack	800	100
Garlic	stack	60	100
Sorghum Beer	liter	400	25
Carrots	group	500	100

Taken from the Jan. Feb. Economic Report for Mokolo.

## APPENDIX 4

## ANALYSE DES REPONSES DE 10 CULTIVATEURS DU MIL INTERVIEWS SUR LEUR MUSKWARI DE LA CAMPAGNE 1977/78

ETHNIE	NOMBRE DE PERSONNES DANS LE SARE		NOMBRE D'ACTIFS DANS LA CULTURE		NOMBRE D'AGODAS RECOLTE	REMBOURSEMENT DE PRET	UTILISATION					VENTE	STOCKE **	
	A	E	A	E			CADEAUX	TROC	ZAKAT	ALIMENTATION ANIMALE	FABRICATION DE BIERE			
Foulbe	2	0	2		412	40	12	0	40	32	0	200	0	88
Mousgoun	5	2	5		1.600	80	10	0	0	480	40	0	0	990
Foulbe	3	3	2		1.650	0	240	0	160	80	0	400	0	970
Foulbe	10	5	4		3.200	0	80	0	360	520	0	720	80	1.440
Foulbe	8	3	5		8.000	0	320	400	960	1.920	0	800	800	17.800
Moundang	12	12	4		4.060	0	640	290	160	270	0	880	80	17.740
Foulbe	3	4	1	2	800	160	160	0	80	0	0	0	0	400
Guiziga	8	13	4		2.720	0	0	240	80	0	0	240	0	12.160
Foulbe	7	4	4		4.000	0	160	700	400	1.400	0	560	0	780
Guiziga	3	4	3		880	0	50	140	40	24	80	80	0	466
TOTAL	61	50	34	2	27.352	280	1.672	1.770	2.280	4.726	120	3.880	1960	
%					100	1	6	6.5	8	17	0.5	14	3.51	43.5

Sur une recolte totale de 342 sacs, 184 sacs avaient ete distribues ou vendus et de 12 sacs stockes. La difference, soit 146 sacs representent la consommation de 61 adultes et 50 enfants pendant la periode de la fin de la recolte a la derniere semaine du mois d'octobre, compte non tenu des quantites de mils achetees pour la consommation ou restantes d'une recolte anterieure (ou recues d'autrui comme cadeaux ou en troc).

Admettons la periode sus-mentionnee comme 240 jours, la consommation observee represente 435 gm. par personne et par jour (pour une agoda de 994.3 gm)

1. Le poids net moyen d'une agoda (n°3) de Madjeri etant 967 gm., d'une agoda de Safrari 1.003 gm. et admettant les proportions des deux varietes d'etre 1 : 2.

\*\* The figures of the last column are the sums used by the farmer and his family after all the other uses are subtracted.

**APPENDIX 5**

**-- COMPTE RENDU SUR LA CAMPAGNE ARACHIDIÈRE 1977/1978 --**

IBA.HAM.-

REPUBLIQUE UNIE DU CAMEROUN  
PAIX - TRAVAIL - PATRIE

MINISTERE DE L'AGRICULTURE

DELEGATION PROVINCIALE DU NORD

DELEGATION DEPARTEMENTALE DU  
MARGUI - WANDALA

SECTION DEPARTEMENTALE DE L'AGRI-  
CULTURE DU MARGUI - WANDALA

COMPTE RENDU SUR LA CAMPAGNE ARACHIDIERE

1977 - 1978.-



S O M M A I R E :

- I. PREAMBULE
  - 11. Rappel des prévisions de récolte de la campagne 1976/1977
  - 12. Campagne Agricole 1977/1978
- II. PLUVIOMETRIE PAR POSTE AGRICOLE ANNEE 1977
- III. CALENDRIER CULTURALE :
  - 31. Labour
  - 32. Semis
  - 33. Levée
  - 34. Sarclages-buttages
  - 35. Parasitisme
  - 36. Maturité
- IV. EVOLUTION DE LA PRODUCTION ARACHIDE D'HUILERIE :
- V. Commercialisation :
- VI. Essai engrais SCCAE-Arachide 28-206 :
  - 61. Tableau récapitulatif essai Postes Agricoles
- VII. PROJET SEMENCIER GUETALE :
  - 71. Tableau récapitulatif des réalisations
  - 72. Test variétal
  - 73. Traitement Phytosanitaire
- VIII. PROGRAMME DE LA CAMPAGNE 78/79 PROJET SEMENCIER
- IX. CONCLUSION

I. PREAMBULE:

11. RAPPEL DES PREVISIONS DE RECOLTE DE LA CAMPAGNE 1976/1977:

- Superficie totale cultivée(ha).....	= 23.512
- Rendement(en coques) Kg/ha.....	= 619
- Production totale en coques(tonnages).....	= 14.565
- Fraction commercialisée(Tonnes).....	= 8.197

I2. CAMPAGNE AGRICOLE 1977/1978	Prévisions	Réalisations
- Superficie totale cultivée(ha)	24.687	24.815
- Rendement(en coques) Kg/ha	650	640
- Production totale en coques(T)	16.055	17.234
- Fraction commercialisée décortiquée(T)	8.028	5.724,5

...../.....

### III. CALENDRIER CULTURAL:

31. Labour: Effectué en Mai 1977, le labour à la charrue a couvert 2.102 ha, la superficie restante "22.713 "ha a été travaillée manuellement, à houe locale.
32. Semis: Entamé en Juin, le semis s'est prolongé jusqu'en juillet, selon l'arrivée et la régularité des pluies dans diverses localités.
33. Levée: La fonte de semis n'est généralement pas constatée dans les champs. L'attaque des corbeaux et rougeurs a pu être contrecarrée. Dans l'ensemble, la levée s'est avérée très bonne.
34. Sarclages-Buttages: Les sarclages et buttages ont eu lieu simultanément aux mois de Juillet et Août, période la formation des gynophores.
35. Parasitisme: Lors de la végétation, aucune attaque à proprement parler n'a entravé le développement des plantes. Les myriapodes (iules) et les autres insectes n'ont provoqué que des efforts très négligeables.
36. Maturité: Elle a débuté en Septembre et a atteint Octobre 77, mois où la récolte a été amorcée.

### IV. EVOLUTION DE LA PRODUCTION. ARACHIDE D'HUILLERIE:

La Production a atteint 17.234 tonnes contre 16.055 tonnes prévues et contre 14.565 tonnes l'année dernière. Le rendement moyen est de 642 Kg.

Nous remarquons une légère augmentation dans le rendement (23 Kg) et par conséquent aussi dans la production (2.569 T); la superficie a également augmenté (de 1.303 ha).

.../...

CAMPAGNE 1976/1977			CAMPAGNE 1977/1978		
Superficie (Ha)	Production (T)	Rdt (Kg/ha)	Superficie (Ha)	Production (T)	Rdt (Kg/ha)
23.512	14.563	619	24.815	17.234	642

V. COMMERCIALISATION:

Le tonnage d'arachide décortiquée commercialisée est inférieur à celui de la campagne dernière (5724,5 T) seulement contre (8.197 T.). En outre, la commercialisation se contrôle difficilement au niveau des villages à cause des fuites souvent constatées vers le Nigéria.

ARRONDISSEMENT DE MOKOLO:

Prix (Unitaire)/ Kg	Commercialisation arachide décortiquée ( T )
75 F	5.724,5

.../...

VII. PROJET SEMENCIER - GUETALE.

Le Centre de multiplication des semences sélectionnées s'occupe principalement aussi de la production des semences d'arachide d'huilerie et de bouche, en plus du sorgho.

71. TABLEAU RECAPITULATIF DES REALISATIONS CULTURE ARACHIDE:

Variétés	! Destination !	Superficies(ha)	! Production (T) !	Rendement Kg/ha
2B-206	! Huilerie !	75	! 75 !	1.000
3-103	! Huilerie !	37,5	! 37,5 !	1.000
Test Variétal	! Huilerie !	2,5	! 2,5 !	1.000
GH - II9- 20	! Bouches !	25	! 25 !	1.000
Total .....	!	140	! 140 !	-

72. TEST VARIETAL

Le Test a porté sur les variétés suivantes:

Variétés	! Superficies(ha ) !	! Production (T) !	Rendement Kg/ha
55- 437	! 0,5 !	! 0,5 !	500
87-3-1	! 0,5 !	! 0,5 !	500
2B-204	! 0,5 !	! 0,5 !	500
BC 59-3-37	! 0,5 !	! 0,5 !	500
70- III	! 0,5 !	! 0,5 !	500
Total.....	! 2,5 !	! 2,5 !	2.500

.../...

73. TRAITEMENT PHYTOSANITAIRE:

Sept mille cents (7.100) kilogrammes de semences ont été désinfectés au thioral et les 140 ha ont été traités contre les chenilles et autres insectes.

VIII. PROGRAMME DE LA CAMPAGNE 78/79. PROJET SÉMIENCIER:

Le projet entend étendre son action dans deux Postes Agricoles pour le Margui-landala;

TABIEAU DE REPARTITION.

Centre et Postes Agricoles	Superficiés (Ha)	Production Prévisionnelle (T)	Rendement Kg/ha	Observations
Guétalé	150	150	1.000	Projet Sémencier
Hina	150	150	1.000	300 paysans contractuels
Mourha	50	50	1.000	100 paysans contractuels
Total.....	350	350	-	

IX. CONCLUSION:

La Campagne arachidière 1977/1978 se caractérise par une nette amélioration aussi bien dans les superficies que dans les rendements pour l'ensemble du Département. Nous considérons qu'elle a été une réussite. Il en est de même pour les essais Agraires SOCAPRE dont les résultats sont assez satisfaisants (cf tableau essais).

A Guétalé, le Projet Sémencier a fait des réalisations intéressantes avec un rendement moyen de 1.000 Kg/ha, et le meilleur atteint 1.350 Kg/ha. Ce projet suscite par ailleurs le regroupement des champs en milieu paysan où il établit des contrats avec les Agriculteurs intéressés.

Malheureusement pour la commercialisation, nous ne pouvons obtenir des chiffres à peu près exacts sur le tonnage, ceci à cause des fuites constatées vers les Départements et pays voisins. C'est le faible prix d'achat pratiqué qui est à l'origine de la plupart de ces fuites. /-

Eholo, le 26 JUIN 1978  
P. LE CHEF SECT. AGRICOLE  
L'ADJOINT,  
(é) GAO DENIS

POUR COPIE CERTIFIÉE CONFORME  
MOKOLO, LE 23 SEPTEMBRE 1978  
LE CHEF SECTION  
DU DEVELOPPEMENT COMMUNAUTAIRE,



SIDI DANI

**APPENDIX 6**

**-- LES POSSIBILITES DE LA PRODUCTION ET DE LA QUALITE DES FRUITS AU TCHAD --**

## Les possibilités d'amélioration de la production et de la qualité des fruits au Tchad

Heinz K. Wutscher

Un séjour de trois semaines, même s'il est complété avec des publications et des informations recueillies localement, constitue une base assez mince pour faire des recommandations pour la production des fruits. Si les recommandations sont mises en pratique à moyenne échelle pour tester leur validité elles pourraient éventuellement conduire à une plus grande et meilleure production de fruits au Tchad.

Sur les marchés la qualité des fruits localement produits est faible. On pourrait l'améliorer par des procédés d'horticulture relativement simples. A cause de son climat et de par sa situation géographique le Tchad ne deviendra probablement jamais un facteur majeur sur le marché mondiale de fruits frais. Cela n'empêche pas que les fruits produits au Tchad puissent être vendus sous forme de produits manufacturés.

En 3 ou 5 ans l'amélioration de la variété et de la qualité des fruits au Tchad nécessiterait seulement un minimum de dépenses. Cela ne vaut pas la peine d'essayer de vendre de nouvelles espèces de fruits qui ne sont pas familières au public, par contre une meilleure qualité et une plus grande quantité des fruits déjà communs au Tchad offriraient une amélioration rapide du régime alimentaire local et de bons revenus pour les producteurs. Les pépinières de la Direction des Eaux et Forêts en collaboration avec CARE/Aid offrent déjà au public une variété d'arbres fruitiers. L'amélioration des espèces d'arbres par greffage par écusson et greffage sur souche avec des variétés supérieures importées, l'utilisation de souches convenables et de graines sélectionnées seraient un moyen rapide de mettre de bons arbres fruitiers à la portée du public. Il semble qu'il y ait un grand intérêt à planter des arbres fruitiers: plusieurs personnes m'ont dit ceci: "Les ACACIA ALBIDA sont pour mes Enfants, les ARBRES FRUITIERS SONT POUR MOI". Plantés dans les arrière-cours les arbres fruitiers n'amélioreraient pas seulement le régime alimentaire mais ils fourniraient aussi de l'ombre et amélioreraient l'environnement domestique. C'est seulement l'extrême sud du Tchad qui a une assez grande quantité de pluie (1000 mm par an) pour produire le plus de récoltes en fruits tropicaux et subtropicaux sans irrigation si des niveaux de production que l'on considère nonmaux dans les autres régions sont escomptés. Même au sud la répartition de la pluviosité est inégale. Cependant la plupart de la production fruitière dans le monde vient des régions où la pluviosité est moins que nécessaire pour une croissance optimale. L'irrigation est la clé pour la production de fruits et légumes de haute qualité. Les cultures irriguées tendent à être de plus haute qualité parceque leur approvisionnement en eau peut être réglé et parcequ'il y a peu de problèmes de maladies dans les endroits secs.

La qualité exceptionnelle de l'eau du Lac Tchad et de ses affluents ferait d'eux une excellente source d'eau d'irrigation pour les vergers. Les vergers constituent une utilisation plus avantageuse de la terre par rapport aux surfaces cultivées où le vent et l'érosion de l'eau constituent des problèmes. C'est surtout dans les zones arides que les vergers sont productifs avec un minimum de fertilisation.

Le Projet S.A.W.S près de N'Djamena est un projet de développement des plus frappants et des plus prometteurs que j'aie vu pendant mon séjour ici au Tchad. Les vergers irrigués au Ba-Illi et à Bougoumène montrent la potentialité de la production fruitière avec irrigation au Tchad.

Les Fruits actuellement produits au Tchad et les recommandations pour leur amélioration.

Bien que les arbres fruitiers soient choses courantes dans la partie centrale et sud du Tchad l'approvisionnement des marchés locaux est irrégulier et les prix sont élevés. La qualité est basse. Pour améliorer les variétés produits, pour prolonger la saison des divers fruits et pour améliorer, les pratiques horticoles je recommande que soient établies immédiatement deux sources de greffage et de semence améliorée.. L'une serait le Projet S.A.W.S. près de N'Djamena, l'autre à la station agricole de Delli ou à la pépinière des Eaux et Forêts à Sarh. Pour épargner du temps si l'on dispose des fonds, il serait avantageux d'importer des arbres greffés, trois pour chaque endroit par variété pour au moins trois variétés de mangue, avocat, citron. Ces arbres serviraient de sources de greffage pour approvisionner les pépinières. Travail de la cime (changement de la variété) des anciens arbres implantés avec d'indésirables variétés serait aussi possible. Dès sources de semence pour les souches du citronnier et des variétés sélectionnés de papaye et de goyave seraient aussi implantées dans ces endroits. De petits tests de plantation de fruits qui d'ordinaire ne sont pas produits au Tchad, qui en réussissant pourraient aussi servir comme sources de matériaux de reproduction pourraient être également introduits. Je suis sûr que le personnel forestier des endroits envisagés aide des directives nécessaires peut maintenir les sources de bourgeon et de graine hors d'atteinte des virus et conformes au specimen.

Si l'importation d'arbres greffés s'avère trop chère; le bourgeon pouvait être importé après que les souches convenables seront implantées.

Le détails ci-après sont donnés pour chaque variété de fruit.

La Mangue ( MANGIFERA INDICA )

C'est probablement le manguiers qui est l'arbre fruitier le plus commun au Tchad. Presque tous les manguiers sont des plants de type polyembryonnaires qui se réalise à partir de la graine. Ils produisent de fruits acceptable mais quelque peu petits. Parceque leur fruit envahit les marchés pour une courte durée de temps, les prix sont bas. Pour prolonger la saison de commercialisation on devrait produire davantage de mangues monoembryonnaires. Celles-ci ne se réalisent pas à partir de la graine et doivent être greffée, mais toutes les variétés supérieures proviennent de cette espèce. Il y a quelques manguiers greffés dans les jardins domestiques à N'Djamena, à Bougoumène et au Ba-Illi mais leur qualité est peu frappante (variétés chinoises et saigonnaises). De meilleures variétés peuvent exister dans des jardins locaux. Elles devraient être recherchées et propagées. Elles semblent meilleurs fructifères que celles qui sont développées à partir des plants. Les arbres greffés de TOMMY, ATKINS, KENT ZILL ou de HADEN (ou n'importe lequel des 30 à 40 variétés améliorées disponibles) importés de la Floride

fourniraient des sources de bourgeons pour greffer les jeunes plants qui sont produits actuellement dans les pépinières. Les jeunes plantes de manguiers constituent de bonnes souches et j'ai démontré la technique de greffage à quelques personnes. Le manguiers est bien adapté aux conditions d'un sol pauvre et bien que les rendements ne semblent pas être très élevés il est bien adapté au Tchad.

### Le Citron

Le citron le plus commun au Tchad est le citron Mexicain (*Citrus aurantifolia*). Il est produit à partir des plants comme dans la plupart des pays tropicaux. La qualité est standard, les rendements semblent être inhabituellement bas. Il y a peu d'information sur la façon dont les soudages affectent le rendement de la lime, elle peut donner un rendement meilleur quand elle est greffée aux souches. Ce qu'on appelle localement PAM-  
PLEMOUSSE est en fait le pummelo (*Citrus grandis*) et non pas le vrai pamplemousse (*Citrus paradisi*). Tous les arbres que j'ai pu remarquer sont des jeunes plants ce qui signifie qu'il y a beaucoup de variabilité parce que le pummelo est monoembryonnaire. Il y a à la fois des espèces blanches et des espèces rouges. Mais la qualité en est également mauvaise. J'ai vu aussi quelques grandes limes et de citrons (*Citrus limon*) également produits à partir des jeunes plants. La récolte fruitière à l'exception de quelques vergers irrigués au Ba-Illi était très faible. On devrait abandonner la propagation des plantes de pummelo. D'excellentes espèces de pummelo peuvent être importées des Etats Unis ou de la Traislande. Bien que j'ai pu voir seulement quelques arbres non porteurs de vrais pamplemousse je suis certain que cela réussirait bien ici. Pour reproduire de vrais pamplemousses, ou des espèces de pummelo sélectionnés par greffage il faudrait avant tout produire des souches de plantes. Je recommande le Swingle citrumelo, la lime Rangpur, la mandarine Cleopatra, l'orange amère comme souches. L'orange acide peut éventuellement devenir l'objet de la maladie TRISTEZA VIRUS et ne devrait être utilisée qu'à une échelle limitée. La TRISTEZA affecterait également les plantes de lime Mexicaine. La TRISTEZA est présente en Afrique du Sud et en Afrique du Nord et on peut s'attendre à la voir apparaître au Tchad. Les semences de ces variétés devraient être introduites comme indiqué plus haut. La reproduction du citron se fait par bourgeonnement. J'ai démontré la technique à quelques autochtones.

Les seuls citronniers greffés que j'ai pu trouver étaient à Deli et au Ba-Illi. La souche était du limon à l'état brut (*Citrus jambhiri*) que l'on trouve aussi dans quelques jardins domestiques comme substitut au citron. C'est un choix malheureux car même dans de meilleures circonstances la qualité du fruit s'avère faible et il est susceptible au pletin (PHYTOPHTHORA SPP fungus) qui est assez commun dans les plantations des citronniers.

Les quelques mandariniers (*Citrus reticulata*) que j'ai pu voir avaient de très faibles quantités de fruits le fruit est petit et la qualité médiocre. Les mandarines peuvent mieux produire sur des souches, comme suggéré, mais je pense que d'autres espèces de citron conviennent mieux au Tchad.

Je n'ai trouvé aucun oranger (*Citrus sinensis*) ou des oranges produites localement. Probablement l'orange serait verte et légèrement acide ici mais je crois que la variété Valencia produirait probablement des fruits convenables pour le marché local.

La Valencia devrait être greffée sur des Souches. Dans les vergers irrigués, le citron était trop arrosé ce qui peut expliquer les faibles rendements. De légères irrigations tous les trois jours sont excessives; l'irrigation doit intervenir seulement quand les arbres commencent à se flétrir. L'eau devrait être envoyée à une profondeur de 14 cm du delà même de la ligne d'égouttement des arbres. Les citronniers ne doivent pas être intercalés avec d'autres arbres fruitiers parce que leurs besoins en irrigation sont très différents. L'introduction de la lime Périsane (Tahiti) et l'EDREKA ou la LISBON LEMON améliorerait la disponibilité et la qualité des fruits du citron acide. Les deux seraient greffés sur des Souches.

#### La Goyave (PSIDIUM GUAJAVA)

Les goyaviers sont très communs dans tout le Centre et la partie Sud du Tchad mais tous sont des plantules de type sauvage. Le fruit est petit et sa qualité est faible. On pourrait améliorer la qualité en important des graines de "BEAUMONT" ou de plus récentes variétés de l'Université de Hawaii. L'importation des bourgeons de Hawaii ou de la station expérimentale de la fertue IFAS en Floride conviendrait mieux parce que les plantes sont toujours variables. Une fois les sources de matériaux de reproduction implantées, on devrait précéder à une reproduction par greffage ou par boutures de racine. Les goyaviers supportent un grand nombre de conditions du sol y compris une nappe aquifère élevée la goyave est très riche en vitamine C et peut facilement être transformée en jus ou en compote. La goyave semble être l'une des espèces de fruits les mieux adaptées au Tchad.

#### La Papaye (CARICA PAPAYA)

Le papayer est un arbre qui est commun autours des maisons au Tchad. Les variétés que j'ai pu échantillonner étaient d'une qualité médiocre. On peut obtenir des semences de variétés meilleures à l'Université de Hawaii ou à la Station expérimentale de la ferue IFAS en Floride. L'irrigation est nécessaire pour la papaye spécialement dans le Centre du Tchad, mais plantée près des maisons elle semble bien survivre même dans des zones arides probablement à cause de l'évacuation fortuite des eaux usées. Une erreur commune au Tchad est de laisser le papayer devenir trop grand. On devrait les enlever et les remplacer quand ils atteignent une hauteur de 3 à 4 m. Les hauts plants sont inproductifs et il est difficile de récolter leurs fruits.

#### Le Bananier (MUSA SPP)

Il semble n'y avoir que deux variétés de bananiers au Tchad :  
1) Le Cavendish bas et compact et 2) une variété de grande taille aux petits fruits qui est probablement la Lady Finger. Les bananes sont des fruits peu ordinaires au Tchad même dans les régions du Sud qui ont une forte pluviosité. J'ai pu voir une plantation près de Léré. Les bananiers poussaient très bien, mais parce que la pousse des drageons n'était pas contrôlée, il y avait le plus souvent une croissance végétative avec peu de fruits. La culture de la banane devrait être intensifiée dans les endroits possibles au Tchad, et plus de variétés, spécialement les plantains, devraient être introduites. Des morceaux de la graine (des morceaux de la racine souterraine) sont employés pour la reproduction.

Parceque les bananes mûrissent toute l'année elles constitueraient une source valable de nourriture à la fin de la saison sèche quand les autres sources d'approvisionnement en amidon s'avèrent insuffisantes.

### L'anacardier ( ANACARDIUM OCCIDENTALE )

L'anacardier supporte des conditions défavorables de sol beaucoup plus que le manguiier et devrait bientôt devenir une source valable de fruits de noix et d'huile au Tchad. On pourrait également exporter les noix. J'ai vu seulement une planche à Bébidja, mais toutes les pépinières des EAUX ET FORETS ont des semis d'anacardier prêts à être distribués. Probablement les plants constituent la meilleure méthode de reproduction actuellement, mais dans le futur on arrive à sélectionner des espèces d'arbres supérieures on peut les reproduire par greffage par ecusson et greffage sur souche, comme on le fait d'habitude en Amérique Centrale.

### Le Corossel ( ANNONA SQUAMOSA )

Le Corossel est un fruit délicieux mais rare au Tchad. Facile à faire pousser à partir de la graine, il mérite une plus large distribution spécialement dans les jardins domestiques. La conservation du fruit mûr est de très courte durée, on devrait le planter seulement pour la consommation locale. De la même famille, le corossel acide ANNONA MURICATA est apparemment inconnu au Tchad mais mérite d'y être introduit. J'ai remarqué une espèce apparentée, ANNONA RETICULATA dans la brousse près de Sarh. On m'a donné pour elle le nom d'ANNONA SENEGALENSIS mais parceque tous les ANNONAS sont des espèces du Nouveau Monde il semble probable que les plantes sauvages proviennent de ANNONA RETICULATA.

### La Grenade ( PUNICA GRANATUM )

Il y a de petites plantations de grenades au Ba-Illi et à Bougoumène qui poussent bien. Chacune se compose de selections inférieures. Si on pouvait trouver des selections supérieures, elles pourraient être reproduites par boutures. Les éléments arabes de la population seraient probablement d'accord pour payer un bon prix de bonnes grenades.

### L'ananas ( ANANAS COMOSUS )

L'ananas est vendu dans les magasins locaux mais je ne suis pas certain qu'on le produise au Tchad. Il y a une petite plantation dans un jardin privé à Bébidja. L'ananas prendrait probablement dans beaucoup de régions du Sud et du Centre du Tchad si l'on pouvait la protéger contre les chèvres et lui donner une irrigation supplémentaire. On devrait essayer là où l'on peut remplir ces conditions. Les boutures, matériaux préférés pour la reproduction, d'une bonne variété (Smooth Cayenne Red Spanish, Monte Livia) pourraient être obtenus de l'étranger. Ils sont faciles à expédier. Le fruit produit au Tchad ne serait probablement pas d'une qualité à exporter parceque les hautes températures d'ici paralysent le développement de l'arôme, mais les marchés locaux pouvaient probablement absorber une production limitée.

Fruits qui actuellement ne sont pas produits au Tchad, qu'on pourrait essayer et qui pourraient être une source de revenus à l'exportation.

### L'Avocat ( PERSEA AMERICANA )

Bien que les avocats soient vendus au Tchad, apparemment ils sont importés des pays voisins. Au Sud on pourrait produire des avocats sans irrigation, au centre du Tchad l'irrigation est probablement nécessaire. On doit faire pousser des arbres, greffés. Pour avoir une source de bourgeon, on devrait importer des arbres greffés de LULA de BOOTH 7, de POLLOCK et d'ANAHEIM. On pouvait utiliser comme souches les semences localement obtenues. On mélangerait les variétés pour assurer un croisement de fécondation. Si les avocats poussent bien au Tchad on pourrait vendre facilement les fruits choisis en Europe et le reste sur les marchés locaux. L'avocat a la plus haute valeur nutritive de tous les produits vivriers tropicaux/subtropicaux et pourrait être un supplément valable au régime alimentaire Tchadien.

### Le fruit de la passion ( PASSIFLORA EDULIS )

Des deux variétés du fruit de la passion le jaune PASSIFLORA EDULIS VAR. FLAVICARPA est beaucoup vivace, vigoureux et beaucoup adapté pour la production de jus. Le fruit de la passion violet, PASSIFLORA EDULIS est beaucoup susceptible au PHYTOPHTHORA fungus et devrait être greffé sur le fruit jaune. Les deux sont des plantes grimpantes et on doit les faire pousser sur des treillis, par contre ils sont vite productifs. Le fruit de la passion violet est vendu frais ou comme pulpe en conserve: le jus de fruit jaune est à lui seul excellent mais est d'habitude employé pour faire des mélanges avec d'autres jus. Si on peut démontrer que les fruits de la passion sont adaptés aux conditions du Tchad, ils seraient un supplément valable aux fruits locaux. Tout ce qu'il faut, c'est importer des semences pour quelques petits tests .

### Divers fruits susceptibles d'être implantés au Tchad,

Parmi le grand nombre de fruits que l'on trouve dans les pays tropicaux et qui n'ont probablement jamais atteint une grande importance commerciale il y en a quelques uns que l'on pourrait, je pense, essayer d'adapter au Tchad. La Cerise de Suriname (EUGENIA UNIFLORA) donne des fruits d'une saveur agréable, c'est une bonne source de vitamine C. Le Loquat ERIOBOTRYA JAPONICA est un arbre d'arrière cour désirable à cause de ses feuilles vertes sombres et de ses fruits jaunes au goût pareil à celui de la pomme.

Le caroubier (CERATONIA SILIQUA) donne des fruits comestibles et de l'ombre dans les pays autour de la Méditerranée. Je suis étonné de m'avoir pu trouver au Tchad. Maintenant il y a des raisins (VITIS VINEFERA) qui sont disponibles et qui demandent peu ou pas de réfrigération. Il y a quelques vignes qui poussent dans des jardins domestiques à N'Djamena. Les raisins que l'on fait pousser en treille donneraient à la fois de l'ombre et des fruits et les chèvres ne les dérangeraient pas.

La sapodille (ACHRAS ZAPOTA) un grand arbre qui donne des fruits très sucrés à été introduite dans beaucoup de pays tropicaux à partir de son pays d'origine, l'Amérique Centrale. L'espèce apparentée, la Sapote COLOCARPUM SAPOTA donne aussi d'excellents fruits.

Les variétés de mûres (RUBUS SPP) de faible réfrigération nouvellement

développées, si elles étaient adaptées ici, fourniraient à la fois des haies vives et des fruits.

Le Longan (EUPHORIA LONGANA) donnerait des fruits de haute qualité à la fin de la saison sèche, si on l'adaptait ici.

La noix de Macadamia (MACADAMIA TERNIFOLIA) est la noix la plus chère sur le marché et pouvait fournir un petit volume de produit à haute valeur à l'exportation, si on l'adaptait à la partie Sud du Tchad, zone des pluies. Le palmier à huile africain (ELAEIS GUINEENSIS) a été expérimenté près de Koumra. Je n'ai pas pu voir la plantation mais apparemment ce palmier aurait besoin d'irrigation pour bien pousser au Tchad. Il y a bien sûr, beaucoup d'autres produits arborifères qu'on pourrait bien adapter au Tchad. Beaucoup seront introduits par des voyageurs mais c'est valable de faire un effort organisé pour améliorer à la fois les variétés des fruits déjà existants et d'en importer de nouvelles.

#### Aide technique et Sources de matériaux de plantation.

Je serais heureux d'apporter aide et conseil pour l'obtention de matériaux de plantation. Voici mon adresse HORTICULTURAL RESEARCH LABORATORY, 2120 CAMDEN ROAD, ORLANDO, FLORIDA 32803.

#### Autres sources pour information sur les plants tropicaux

- 1) Department of Horticulture University of Hawaii, Honolulu, Hawaii 96822, (Dr. Henry Nakasone, Chairman)  
(Guavas, mangoes, passion fruit, papayas, macadamia nuts, avocados, pineapple)
- 2) IFAS AGRICULTURAL EXPERIMENT STATION, Homestead, Florida  
(Dr. Carl Campbell, Dr. Simon Malo)  
(avocados, mangoes, guavas, sapodilla, sapote, loquats)
- 3) MAYAGUEZ INSTITUTE OF TROPICAL AGRICULTURE, Mayaguez, Puerto Rico (Dr. Frank Martin, Director)  
(pummelos, pineapple, oil palm)
- 4) US SUBTROPICAL RESEARCH LABORATORY, Old Cutler Road  
Miami, Florida (Dr. Richard Knight)  
(passion fruit, mangoes, guavas)

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