EXECUTIVE SUMMARY
SOCIO-ECONOMIC SURVEY
BENIN

July 1983

Multinational Agribusiness Systems Incorporated

PEOPLE'S REPUBLIC OF BENIN

MINISTRY OF PLANNING, STATISTICS AND ECONOMIC ANALYSIS

EXECUTIVE SUMMARY

SOCIO-ECONOMIC PROJECT FOR THE DEVELOPMENT OF ONCHO-FREE AREAS

CENTRAL BUREAU FOR PROJECTS
B.P. 2022 - COTONOU
PEOPLE'S REPUBLIC OF BENIN

MULTINATIONAL AGRIBUSINESS SYSTEMS, INC.
1401 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22209

1980 - 1983

PROJECT PERSONNEL

BUREAU CENTRAL DES PROJETS — **MULTINATIONAL AGRIBUSINESS SYSTEMS INC.**

QUESTIONNAIRES DESIGN

MIDINGOYI Soulé, Agro-economist
Project Co-director
HOUSSOU Grégoire
Statistician-Demographer
AKLAMAVO Michel
Agro-economist
AHOUANSOU Théophile
Agro-economist
AVIMADGE Martin
Epidemiologist
EHOUINSON Marcellin
Zoo-technician

Dr Bernard L. DELAINE, Sociologist
Chief of Party
Dr Gerald P. OWENS, Agro-economist
Director

FIELD WORK

MIDINGOYI Soulé
HOUSSOU Grégoire
AKLAMAVO Michel (Part-time)
AHOUANSOU Théophile (Part-time)
AKPODJI Cosme (Part-time)
MONGBO Cosme (Part-time)

Dr Bernard L. DELAINE
Charles K. DANA
(Short-term consultant)

REPORT PREPARATION

MIDINGOYI Soulé
HOUSSOU Grégoire

Dr Bernard L. DELAINE
Gaylord L. WALKER
(General supervision)

We would like to thank all those who participated in this project in particular the Beninese professionals who contributed efficiently to its success. Also our thanks extend to the 120 field enumerators, the 22 controllers and the 60 base line data analysts in Cotonou.

EXECUTIVE SUMMARY

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

LIST OF ABBREVIATIONS

CARDER:	Centre d'Action Régionale pour le Developpement Rural. Regional Action Center for Rural Development.
G.R.V.C.:	Groupement Révolutionnaire à Vocation Coopérative. Revolutionary Group for Cooperative Action.
C.A.E.T.S.:	Coopérative Agricole Expérimentale de Type Socialiste. Experimental Agricultural Cooperative of the Socialist type.
O.N.P.:	Office National de la Pharmacie. National Agency for Pharmacy.
P.M.I.:	Protection Maternelle et Infantile. Mother and Child Protection Center.
U.V.S.:	Unités Villageoises de Santé. Village Health Units.
F.C.F.A.:	Franc de la Communauté Financière Africaine. Franc of the African Financial Community.
U.S.A.I.D.:	United States Agency for International Development.

EXECUTIVE SUMMARY

PREFACE

This report is the result of 3 years cooperative effort between the Central Projects Bureau, the Ministry of Planning, Statistics, and Economic Analysis of the People's Republic of Benin, and the Development Services Division of Multinational Agribusiness Systems Inc. (MASI), with headquarters in Arlington, Virginia, United States. The project was financed through USAID as a part of the Regional Onchocerciasis-Free Area Planning (ROAP) Project (Project number 698-0416).

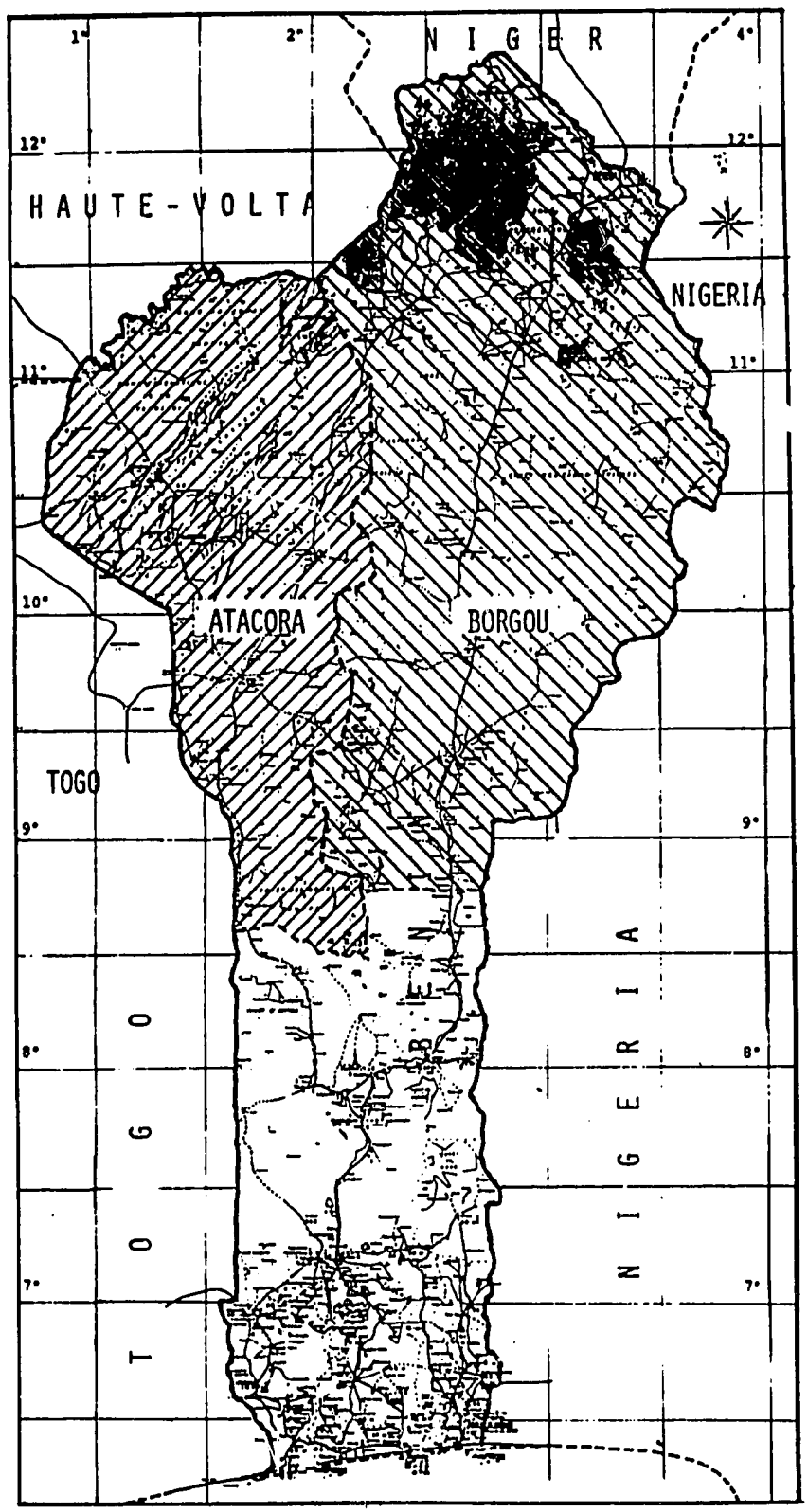
The data base was obtained by approximately 187,200 interviews conducted twice weekly of 15 households each in 120 villages in the two northern provinces of the country. These provinces of ATACORA and BORGOU cover approximately 60% of the country's area and account for 30% of the total population.

The following studies were planned and carried out in the implementation of this project:

- Socio-demographic study
- Socio-cultural study
- Study on health, hygiene, and nutrition
- Study on cattle migration
- Agro-economic study
- Budget and consumption study

These studies and companion statistical tables are contained in 55 volumes each in French and English published by MASI in the USA. The purpose of the report is to provide a better statistical base for the Government's planning activities.

Socio-Economic Project
for the Development of Onchocerciasis Free Areas
The Two Northern Provinces of Benin



I. METHODOLGY

The methodology used in preparing the studies, the selection of households constituting the sample, the training of interviewers, the collection of data for 12 months in the field, and the statistical analysis of data collected are presented in detail in Volume I. A summary is presented below:

After having established the objectives for each study, the questionnaires were drafted, a manual for the interviewers was written and a sample was selected. The sampling method of probability proportionate to the size of the villages was used to get a representative sample of each of the provinces. As a first survey step 60 villages were selected in each of the provinces according to this method on the basis of a list furnished by the National Statistics Institute. The largest villages had more probability of being selected than the small ones, in the first stage. The same number of households for each village were selected in a second stage, giving each household the same probability of being selected. Thus, 12 agricultural households and 3 non-agricultural households were selected in each of the 60 villages per province, permitting a generalization of the sampling results for the province within a degree of confidence of 99% and a tolerable error of 0.05.

Once the questionnaires had been printed and the households had been selected, two intensive training courses were arranged in the north. The first was aimed at training future checkers charged with supervising and verifying the work of the enumerators; the second was intended to train the enumerators who were then placed, with the support of the provincial and local authorities, in their respective villages where they remained for the 12 months of the field survey.

The statistical data presented in this study were analyzed by computer in the United States, using the IMSL (International Math and Statistical Library) program. Two types of statistics for this analysis were selected: descriptive and inferential statistics. Descriptive statistics consist of a simple distribution or cross tabulation of variables, according to pre-defined categories. These distribution tables are complemented with statistics giving the main measures of dispersion, such as the arithmetic mean, median, mode, standard deviation, and range. The inferential statistics, presented in the form of cross tables, followed tests of significance such as chi-square, the Pearson correlation coefficient, and the Spearman correlation coefficient. Each statistical test is presented with the corresponding significant level. In the context of this study, the relationships found in the sample are generalized when the significance level is less than 0.05, and the error probability is less than 5%.

II. PRESENTATION OF RESULTS

A. Socio-demographic study

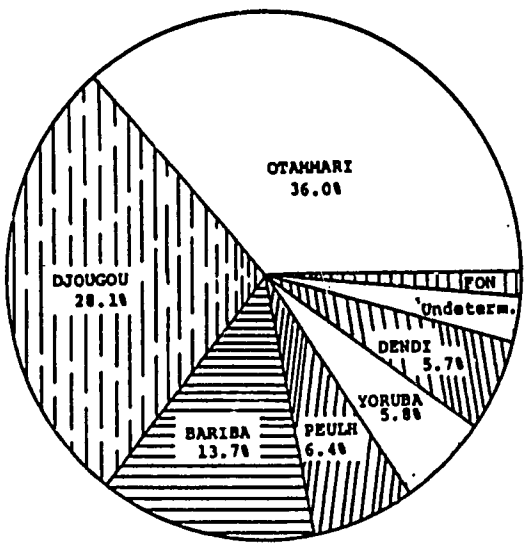
Although ATACORA is characterized by a multitude of ethnic groups, there are two major groups which predominate (see Figure 1). These are the OTAMMARI who constitute 36% of the total population and the DJOUGOU who account for 28%. The BARIBA are next with 13.7%, the PEULH with 6.4%, the YORUBA with 5.8%, the DENDI with 5.2% and the FON with 1.4%. The undetermined (mostly foreigners) account for 2.8%.

In BORGOU the BARIBA predominate by far: making up 70.8% of the population. They are followed by the PEULH (10.4%) and the DENDI (7.45).

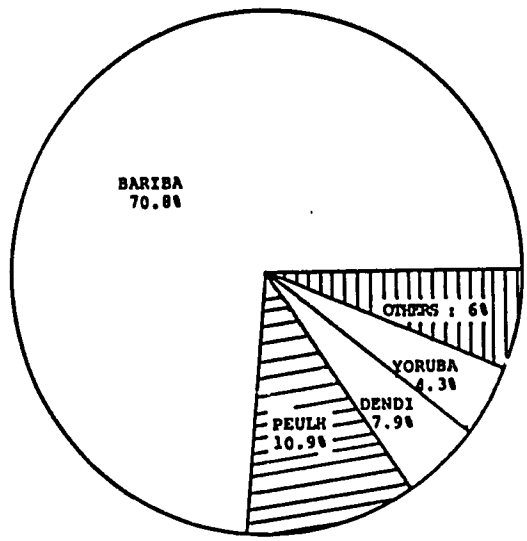
Figure 1

RELATIVE SIZE
OF VARIOUS ETHNIC GROUPS

ATACORA



BORGOU



1. Population in general

The population is very young in the two northern provinces of BENIN since 50% are under the age of 16. Persons over the age of 60 account for barely 6% of the population in ATACORA and 6.5% in BORGOU. The household size varies from

one province to the next and from one group to the next. It is 8.1 persons for all of ATACORA but only 6.5 for the OTAMMARI and 8 for the DJOUGOU. In BORGOU, the average household size is 9.4 persons for the province as a whole and 9.3 for the BARIBA.

2. Household heads

The average household head age is rather advanced at 43.6 years for the OTAMMARI and 53.9 for the DJOUGOU in ATACORA. It is 52 years for the BARIBA in BORGOU. Very few women are household heads, only 8.7% for all of ATACORA and 6.5% for BORGOU. They are generally widows. Of the household heads in ATACORA 66% were born in the same village and 92.7% were born in the province. In BORGOU, 74.8% were born in the village and 91.3% in the province. This points to greater mobility inside ATACORA than in BORGOU but population movements are minor and essentially take place within the province itself. Of 83.1% of the married household heads in ATACORA, 32.6% are polygamous. This rate is 28.5% among the OTAMMARI and does exceed 35% among the DJOUGOU. Of 85.3% of the married household heads in BORGOU, 27.1% are polygamous and 32.5% of the BARIBA are polygamous.

Animism is the most widespread religion in ATACORA. Of the household heads interviewed 57.8% declare that they are Animist, including 79.5% among the OTAMMARI, and 41.4% among the DJOUGOU. The latter are mostly Muslim (43.9%). Islam predominates in Borgou in 60.5% of the population. Among the BARIBA, 55.9% declared that they are Muslims and 28.4% said they were Animists. The DENDI are Muslims to the extent of 97.6%. Among household heads in ATACORA

88.3% are illiterate but this rate exceeds 90% both among the OTAMMARI and the DJOUGOU. In BORGOU, the illiteracy rate is even higher, reaching 90.7% for the entire province and 92.7% for the BARIBA.

The economic activity of the household heads revolves around agriculture as 85.3% of the household heads questioned in ATACORA are farmers and 82.7% in BORGOU. These percentages increase to 88.2% among the OTAMMARI, 87.7% among the DJOUGOU, and 85.8% among the BARIBA.

3. Absentees

There are absentees in 27.9% of the households surveyed in ATACORA, members of the household who go away for a certain period of time but who are always considered as a part of the household. These temporary departures involve 37.8% of the households among the DJOUGOU, against 22.3% among the OTAMMARI. In BORGOU, 13.6% of the households are affected by departures. But these departures usually involve young people: 86.6% of the absentees among the OTAMMARI, 79.3% among the DJOUGOU, and 85% among the BARIBA in BORGOU are under the age of 30 years. Most go away for family reasons, to seek work or to study. Almost half go beyond the borders of BENIN to TOGO or to NIGERIA which is a powerful center of attraction for the young people.

4. Wives

Wives normally are much younger than household heads since their average age is only 32.9 in ATACORA compared to 47.9

years for the men. In BORGOU, the average age of the women is 34.8 and 50.1 for the men. In each of the two provinces of the north, the women marry very young, 50% being married before the age of 17 in ATACORA, and 18 years in BORGOU.

We note great conjugal stability considering 78.3% of the wives in ATACORA were married only once compared to 70.7% in BORGOU. About half were married in ATACORA with dowry (47.3%) and 22% lived in a free union. Only 11.3% contracted a customary marriage without dowry. In BORGOU 54.6% were married with dowry, 13.8% lived in free union, and 9% contracted a customary marriage without dowry.

5. Population growth

The birth rate for the year 1981 - 1982 was estimated at 40.6°/$_{oo}$ and the mortality rate 16.5°/$_{oo}$, for ATACORA, which gives a population growth rate of 2.4%. In BORGOU the birth rate for the same period of time was estimated at 51.7°/$_{oo}$ with the mortality rate 11.9°/$_{oo}$ which gives a population growth rate of 3.9%.

B. Socio-cultural study

In spite of the wide diversity of ethnic groups populating the two provinces of the North, it is possible to detect certain common cultural features. Tradition and ancestors constitute a certain social consensus, which contributes to the unity of each group. Tradition profoundly fashions the life of each group, dictating the moral rules to be

observed, the standard of conduct to be followed, and the ceremonies to be practiced throughout a person's lifetime. The old folks, the charlatans, the fetishists enjoy great prestige. They are the guardians of a social system inherited from the past; they ensure their link and communication between the living and the dead, a link which is necessary for the group's permanence. The social function of many ceremonies marking the major stages in their life such as birth, initiation, marriage, death, or ceremonies that mark the major stages in the agricultural production cycle i.e.: planting and harvesting, is to ensure the group's social cohesion by consolidating the unity of the people around the ancestors.

From this perspective, changes can be accepted only if they do not alter the social order established by the ancestors, which run counter to tradition, beliefs, customs, or traditional practices. No major decision can be made without first consulting the ancestors through the charlatans and the religious chiefs.

The social status of women is not in relation to the economic and social role which they play within each of these groups. The groups are dominated and governed by men and are for men. Women have a very important economic and social role, participating in agricultural production just as men, in addition to being responsible for the household and education of the children. However, the woman does not participate in the decison making process since she is considered intrinsically inferior to man. She is the servant of man. The only social function which she is granted is the function of reproduction.

These groups form semi-feudal, strongly structured and hierarchized micro-societies characterized by great inequalities among the notables (old kings, traditional chiefs, fetishists) and the common people at large. Relations between the various ethnic groups are heavily influenced by history and the BARIBA have more prestige than all the other groups. The PEULH and the GANDO are at the bottom of the social scale.

In the villages, community life develops around markets which enable the people from the village and the surrounding villages to get together. This is a preferred place for the exchange of goods and services and the circulation of news. The village is also a place for meetings and for the creation of friendships and, for many people, this is the only social relaxation. Everybody therefore goes to the market: men, women, and children. Some go there to buy and sell products; others go there to have fun and to get together with friends.

C. Health

Health organization revolves around the medical districts which have been set up in each district seat. They are generally directed by a physician and assisted by one or more male nurses, depending upon the importance of the medical station. Certain medical districts do not have a physician; at the community level, there is a medical station and a mother and child protection center (P.M.I.) for all but a few communities. These units are normally directed by a male nurse or a midwife. At the village level there are some village health units (U.V.S.) headed

by a medic or midwife. In addition to the medical districts, under which there are the dispensaries, medical stations, P.M.I. and U.V.S., there are three hospitals in ATACORA, two of which are private. In BORGOU there are four, two of which are also private. The health infrastructure is completed by numerous sales outlets of the National Pharmacy Office (O.N.P.) although they are not sufficiently supplied.

The good geographic distribution of the various health centers means that the distances to be covered to reach them in case of need are not excessive. Pharmaceutical products sales outlets are less numerous and only 8.4% of the population are less than 1 kilometer from such a center in ATACORA; the same applies to 9.1% in BORGOU.

1. Patients

Out of the 782 households surveyed in ATACORA, 376 had one or more members who were ill during the year prior to the survey; that is to say, there were sick people in 48% of the households surveyed. It can be concluded that the 10.3% of the population had been ill the previous year.

Of 834 households surveyed in BORGOU, 280 had one or more members who were ill, there were sick people in 32% of the households surveyed which enables us to estimate the total number in the province at 6.3% of the population.

The diseases most commonly treated by doctors or male nurses in the medical districts in both provinces are malaria, measles, gastro-enteritis, dysentery and broncho-pneumopathies. It should be noted that

onchocerciasis is not mentioned among the diseases treated at the medical district level.

2. Attitude toward medicine

In spite of the establishment of modern medicine for several decades, the population as a whole remains very much attached to traditional medicine. Doctors themselves admit that "the population generally seeks care primarily through native means before going in for consultation".

Diseases are rarely blamed on a natural phenomenon but are generally perceived as being the result of supernatural forces that surround man or ancestors to whom one did not pay enough respect.

3. Nutritional hygiene

There are many cases of gastro-entoritis and dysentery in the North. This is not surprising when one realizes that 12.7% of the households surveyed in ATACORA and 11.6% in BORGOU declared that they have no access to drinking water. Moreover, among those that say that they do have drinking water, many believe that, if the water appears clean, it is potable and can be drunk.

4. Nutrition

In both provinces it is the custom for a mother to nurse her child. The average weaning age of 24 months is rather

advanced, and certain children are not weaned before the age of 30 months.

All family members complained of lack of food (99.3%) for both provinces. No nationality, no district escapes this problem. It does not manifest itself throughout the year but only during periods of transition (see the comments on the districts). During that period, not only does the population get insufficient food to satisfy their hunger, but many have consumed their reserve food and suffer famine. This is a problem which recurs each year.

The morning meal essentially consists of porridge, dough, or sour dough and at noon, dough and porridge or yams. In the evening they again eat dough. More than 90% eat dough. We can say that the meals show little variation and that cereal crops and tubers constitute the essential portion. Very little meat is consumed.

D. Animal husbandry and cattle migration

The two provinces in the north show a strong potential for beef cattle husbandry, which until now was limited and underexploited because of certain restrictions. These include socio-economic restrictions such as cattle herding by the PEULH involving itinerant herds with a low yield; socio-cultural restrictions when the owners of beef cattle consider animal husbandry a source of prestige and financial savings; climatic and food restrictions and water and pasturage problems forcing the herds into migration. There are also restrictions of a pathologic nature with breeds that offer little resistance to trypanosomiasis.

The beef cattle population has been estimated at 196,000 head for ATACORA and 483,000 for BORGOU. Animal husbandry is practiced chiefly by the PEULH. They raise their own animals, and they tend animals for others. This is a traditional and extensive method based on migration during the dry season. The PEULH whom one meets in all countries of West Africa are essentially nomads and herdsmen. They have always specialized in animal husbandry and they are familiar with all aspects of raising itinerant beef cattle. They have a perfect knowledge of the cattle raising area, the condition of pasture land, permanent and temporary watering places, and the diseases which they treat with traditional remedies.

Among the various breeds that comprise the cattle population of BENIN are two which predominate in the north, the Borgou breed (51% of the sample) and the Somba breed (36%). Zebu and other breeds account for only 3% of the total. In the sample studied, the average herd size was 71 head, of which almost half (30 head) belong to the herder himself. This proportion was certainly underestimated because the PEULH are rather reluctant to reveal the number of animals that belong to them. The other animals belong to many owners, some of whom may have only a single cow while others have as many as 30. The average number of cattle per owner in the sample was 12.5.

Although the herdsmen are not paid as such for keeping the cows of the others, there are certain forms of remuneration which vary according to the areas involved. Some keep a calf every 3 to 5 years. They can freely draw milk which is the main component of their diet.

Traditional pastoral animal husbandry is heavily influenced by the specific climatic conditions encountered in the north of

BENIN where two entirely different seasons follow each other. The rainy season begins April-May and extends to August, followed by the dry season. Natural fodder reserves, such as pasture land, are depleted by November and many watering places run dry. To guarantee survival of the herds, the PEULH migrate in search of pasture land and permanent watering places. Herds are moved toward the major watering points, which are along the border of Niger and Nigeria toward certain points in the country's interior such as along the Alibori River. Most herders say that they would remain in place with their herds if there were permanent fodder and watering points because cattle migration creates many problems for them. These include diseases that decimate the cattle, lack of water and fodder which weakens the cattle, damage caused in the fields of peasants who then demand money and who mistreat the herds, and finally the fatigue of the animals and the drovers. In the sample considered, of 1,918 animals, 201 died during the last migration, a little more than 10%.

Fodder is essentially provided from pasture land grass supplemented, after the period of harvest, by the harvest remnants such as sorghum and millet stalks. The only cattle feed supplement purchased is salt which is given by 91% of the herdsmen questioned who are aware of certain mineral deficiencies of their animals.

The agro-economic study in the section on livestock and livestock management methods mentions that 27.5% of the households surveyed in BORGOU have beef cattle with an average of 12.7 head for each of these farms, and 3.5 for all of the households surveyed. In ATACORA, 34.9% of the households have such animals but with an average of 6.5 head per farm and 2.3% for all of the households. This percentage is very low but one must remember that the population in the north does not engage

in livestock activities for economic reasons but only for reasons of prestige and savings. This is why 54.1% of the owners in ATACORA and 45.6% in BORGOU sell their animals only when they have money problems, often to meet the costs of ceremonies. 13% in ATACORA and 2.7% in BORGOU declare that they never sell an animal. For them the herd is mainly a source of prestige.

E. Agro-economic study

1. Agricultural households

The average size of an agricultural household in Atacora is 8.2 persons, of whom 4.3 are active and over the age of 15. The active individuals account for more than 50.1% of the population of the agriculture households. The household head's average age is 48.6 years, which is relatively high. Of the households heads interviewed 86.6% were born in their district of current residence. Only in the districts of TANGUIETA and TOUCOUNTOUNA were almost 40% born outside the district. More than 90% of the household heads surveyed did not have a formal education.

In BORGOU, the average size of an agricultural household is 9.7 persons, including 5.2 agriculturally active. The active individuals account for 53.1% of the population in agricultural households. That percentage is lower in ATACORA. The mean age of the household head is also higher, reaching 51.6 years; 82.5% of the households surveyed were born in their district of current residence. Only in the district of TCHAOUROU and MALANVILLE were about 40% born outside the district. As in ATACORA, more

outside the district. As in ATACORA, more than 90% of the household heads had not received any formal education.

2. Farm size

About 40.8% of the farms in ATACORA have one hectare or less. The average farm in ATACORA is 1.70 ha, but 50% of the households have a farm of less than 1.23 ha. In BORGOU, the farms are definitely larger with an average size of 2.35 ha. About half of the households have farms of 1.72 ha or less.

The most frequent method of acquiring farms is customary allocation. Farms acquired in this fashion were 47.7% in ATACORA and 56.2% in BORGOU. Inheritance is the next most widespread form of acquisition accounting for 38.4% in ATACORA and 27.2% in BORGOU.

In ATACORA, on the average there are three fields, subdivided into 4.6 plots per farm, and 1.6 fields, divided into 3.3 plots, in BORGOU. In ATACORA it is the average farms of MATERI and KEROU which are the most heavily partitioned whereas in BORGOU it is the large farms which are subdivided. Single crops constitute 60% of the plots in ATACORA and 61.5% in BORGOU. The average surface area for single-crop land is 0.32 ha in ATACORA and 0.73 ha in BORGOU. The average surface area for multi-crop land is 0.47 ha in ATACORA and 0.71 ha in BORGOU. Single-crop land areas occupy on the average 60% in ATACORA and 62% in BORGOU, whereas multi-crop land occupies, respectively, 40% of the total surface in ATACORA and 38% in BORGOU.

The average distance from houses to fields is 1.2 km in ATACORA and 1.1 km in BORGOU. About 5% of the households in ATACORA are more than 5 km from their fields and the same is true of 4% in BORGOU.

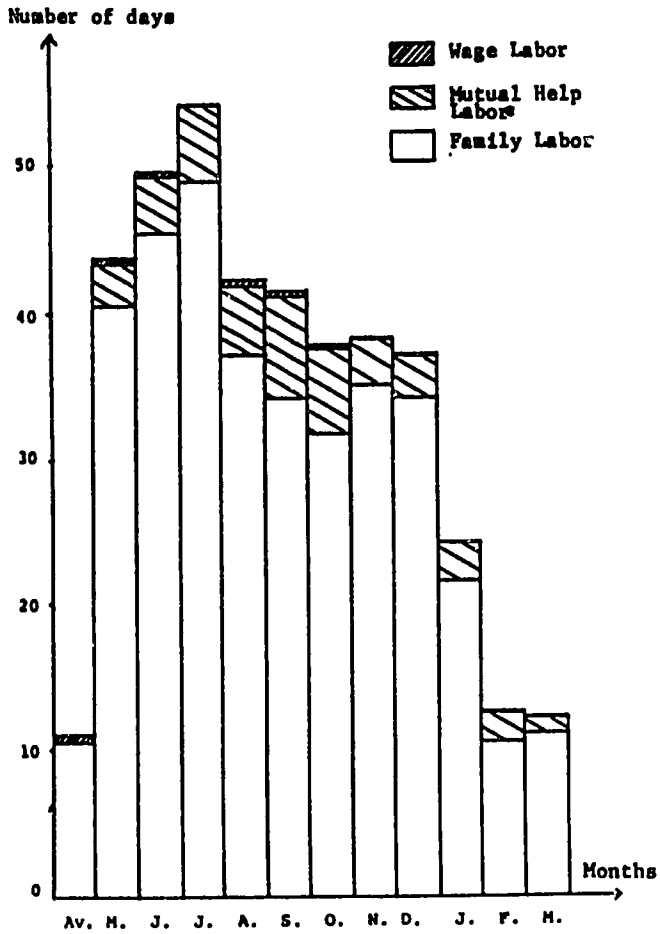
3. Farm work

Only 2% of the households in ATACORA joined a G.R.V.C. and 6% did so in BORGOU. Only one household out of the 644 surveyed in ATACORA belongs to a C.A.E.T.S. and the same is true of almost 1% in BORGOU. Mutual assistance is much more developed in ATACORA than in BORGOU since 43% of the households in ATACORA participate in it, as against only 5% in BORGOU. But in BORGOU, more use is being made of wage labor (27% of the households use it) than in ATACORA where only 15% of the households employ it. Wage labor needs are felt from May to August (see Figure 2).

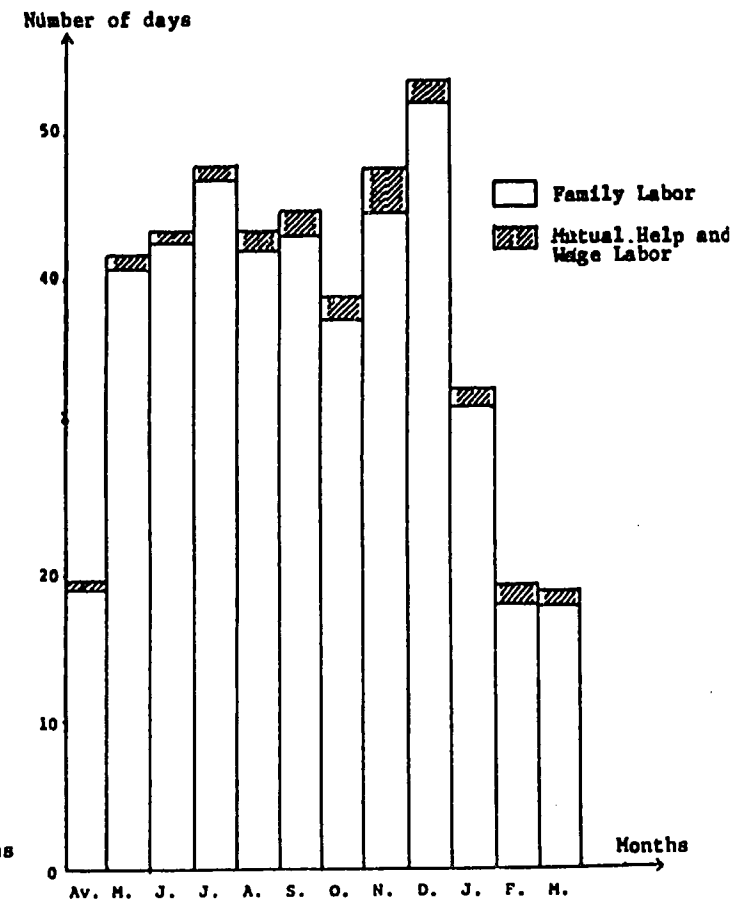
Figure 2

MONTHLY DISTRIBUTION OF THE NUMBER OF MAN-DAYS OF WORK BY TYPE OF MANPOWER

ATACORA



BORGOU

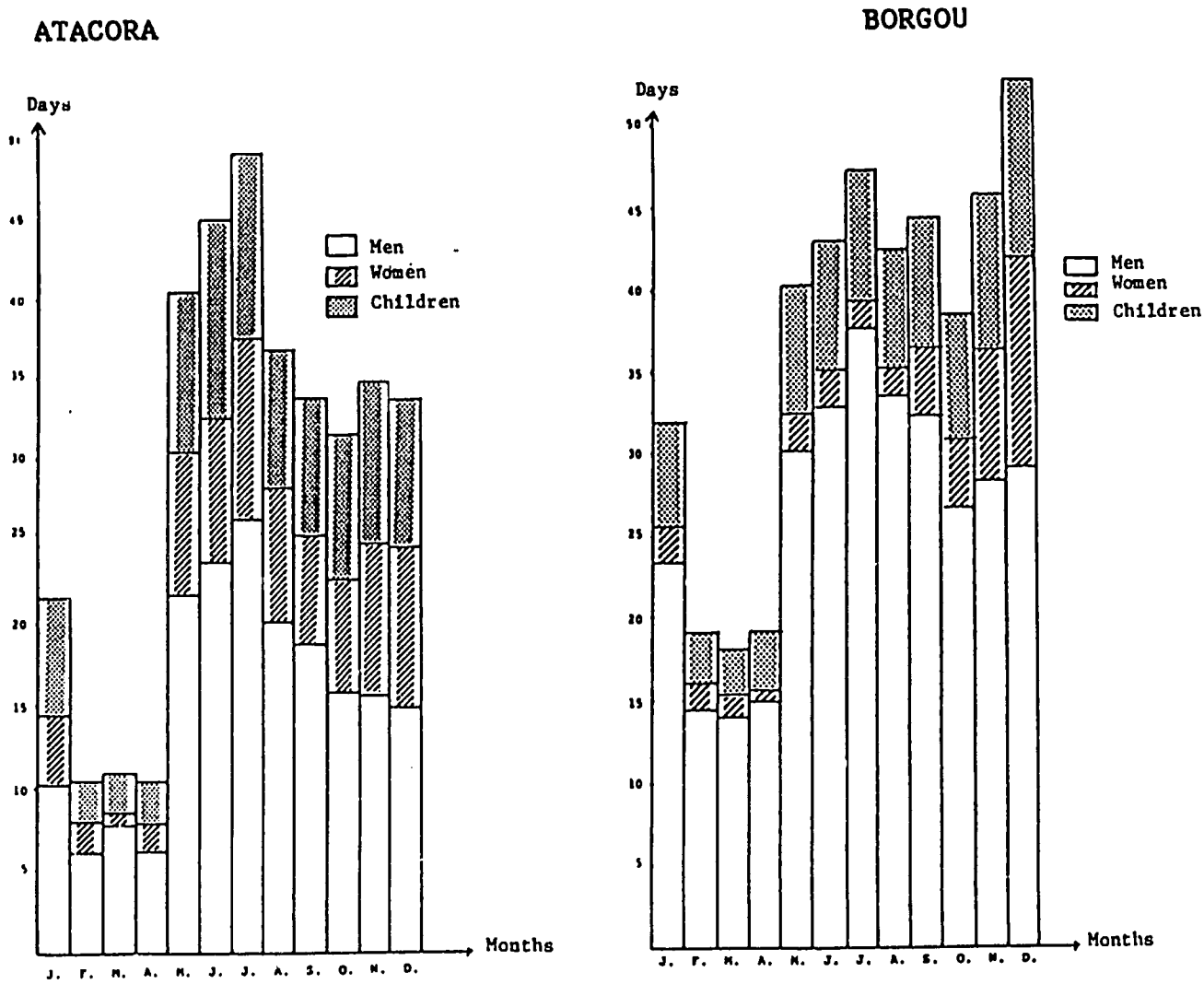


Family manpower constitutes the main source of work (see Figure 3). There is an average of 4.3 active farmers in ATACORA which includes 2 men and 2.3 women, whereas in BORGOU there are 5.2 active farmers, including 2.5 men and

2.7 women. Family manpower accounts for 89% of the work force on the farms in ATACORA and 93% in BORGOU. The rest is made up of draft animal cultivation (1% in ATACORA and 1.5% in BORGOU), mutual aid (10% in ATACORA and 1.5% in BORGOU), wage labor (0.5% in ATACORA and 1.4% in BORGOU), and tractors (0.5% in each of the provinces).

Figure 3

MONTHLY DISTRIBUTION OF DAYS
PROVIDED BY FAMILY MANPOWER, BY CATEGORY



The family manpower structure reveals that 52.9% of the work is done by the men in ATACORA and 71% in BORGOU; 25.8% women in ATACORA and 18.8% in BORGOU; 21.3% by children in ATACORA and 10.1% in BORGOU. Overall, an agricultural household puts in an average of 410 man-days per year on the farm in ATACORA, including 360 days by family manpower. In BORGOU, a farm household spends an average of 476 man-days per year on the farm, including 443 by family manpower.

This figure supports an estimate that an active man on the average spends 95 days per year on agricultural activities in ATACORA and 125 days in BORGOU. The problem of under employment on the family farms is clearly indicated in both provinces. A work day lasts 5 to 6 hours in ATACORA and 5 to 8 hours in BORGOU, but only 4 to 5 hours during the crop cultivation period and 5 to 8 hours during harvest work.

4. Non-agricultural activities

Here we find that 22.7% of the households surveyed in BORGOU and 53.2% of the households surveyed in ATACORA engaged in non-agricultural activities during the 1980-1981 farm year. The mean and median incomes generated through these activities were 55,000 and 24,000 F CFA (francs of the African Financial Community) in BORGOU and 56,000 F and 24,500 F CFA in ATACORA.

5. Tools and agricultural equipment

The material resources used by farmers are rather rudimentary equipment consisting of small agricultural items. In ATACORA, an average of 4.4 hoes, 1.4 machetes, 1.5 sickles, and 1.6 axes per farm. In BORGOU the average is 4.8 hoes, 2.1 machetes, 1.8 sickles, and 2.8 axes per farm.

Storage facilities, average 0.88 granaries per farm in BORGOU and 1.9 in ATACORA. Only in the districts of BANIKOARA, BEMBEREKE, KANDI, and KARIMAMA is there an average of one draft animal per farm. In ATACORA there were reported to be only 25 plows, 5 carts and 72 draft animals for the entire province. These big equipment items are mostly in the district of MATERI.

Loans were used only by 4.1% of the farms in ATACORA: 40.7% believe that they did not need loans, 25.5% did not know how to get a loan, and 22.5% were discouraged by the conditions connected with the grant of a loan. In BORGOU, only 2.9% of the farms used loans; 41.4% believed that they did not need loans, 27.9% did not know how to get a loan, and 20.3% were discouraged by the terms of the loans.

6. Livestock

In ATACORA, 34.9% of the households have beef cattle with an average 6.5 head per farm or an average of 2.3 head for all the surveyed farms; 55.6% of the households have goats with an average of 5.1 head per farm or an average of 2.8 head for all of the farms surveyed; 38.6% of the households have sheep with an average of 5.7 head per farm

or an average of 2.2 head for all of the farms surveyed; 33.1% of the households have hogs with an average of 4.1 head per farm or an average of 1.4 head for all of the farms surveyed.

In BORGOU, 27.5% of the households have beef cattle with an average of 12.7 head per farm or 3.5 head for all of the farms surveyed; 31.4% of the households have goats with an average of 4.9 head per farm or 1.5 head for all of the farms surveyed; 36% of the households have sheep with an average of 5 head per farm or 1.8 head for all of the farms surveyed; 2.4% of the farms have hogs with an average of 7.4 head per farm of 0.2 head for all of the farms surveyed. This small percentage of households having hogs is due to the fact that Islam is very widespread in BORGOU.

Poultry ownership is widespread with 74% of the households in ATACORA having poultry with an average of 11.2 animals per farm or 8.3 for the entire province. In BORGOU, less poultry was in evidence with only 45% having poultry with an average of 9.1 or 0.4 for the entire province.

7. Crop cultivation practices

In ATACORA only 8% of the farmers used chemical fertilizers. Among those who did not, 23.7% did not see any need for doing so because the practice of burning weeds enabled them to get along without fertilizer; 45.2% declared that they did not have money to buy fertilizer, 13.7% did not know how to get fertilizer, and 9.9% said that fertilizer is not available.

In BORGOU, 10% of the farms used chemical fertilizer. Among those who did not: 43.2% did not see the need for the same reasons as in ATACORA, 24.5% declared that they had no money, 15.4% say that they did not know how to get fertilizer and 10.3% maintained that the product was not available.

8. Yield

More than half of the farmers in ATACORA (58.8%) did not expect good yields from their farms. The main causes mentioned in explaining the poor yields expected were drought (38.95), lack of fertilizer (28.2%), and manpower shortage (13.8%). Contrary to what was observed in ATACORA, 74% of the farmers in BORGOU expected good yields on their farms. For the others, the main cause of the poor expected yields was the drought.

Among those who grew cotton, 53.8% in ATACORA and 78.7% in BORGOU, said they use a selected variety. For all of the other crops, the local varieties predominate. In the case of corn, 89.6% of the farmers in ATACORA used the local varieties and 84.7% did so in BORGOU. For peanuts, 70.7% used the local variety in ATACORA and 75.2% did so in BORGOU. For sorghum 9[illegible].3% used the local variety in ATACORA and 91.8% in [illegible]GOU. Finally, 83.3% used local varieties of rice and 80% did so in BORGOU. Generally speaking, the majority of the farmers used seeds from their own harvest. The use of local varieties was still a very widespread practice except for cotton seeds which were furnished through CARDER.

Fields are cultivated on an average of 3 or 4 years after which they are left fallow for 4 to 6 years, both in ATACORA and in BORGOU.

9. Harvesting tree crops

Harvesting tree crops is carried out generally during the slack crop season and involves several products: karite nuts, nere seeds, and baobab seeds. Although picking is not an exclusively female activity, it is nevertheless still true that processing and preparation operations are women's work. In ATACORA, 35.9% of the households picked karite nuts with an average of 112 kg per household; 55.9% gathered nere seeds with an average of 78.4 kg per household and 15.9% collected baobab seeds with an average of 75 kg. In BORGOU 52% of the households picked karite nuts, with 443 kg on the average per household and 51.3% collected nere seeds with an average of 266 kg. In BORGOU, the households did not gather any baobab seeds.

10. Main crops

Sorghum was the dominant crop in both provinces (see Table 1). Sorghum covered more than 40% of the total crop cultivation area both in ATACORA and in BORGOU and was grown by almost 80% of the farmers. Millet was the second crop in ATACORA but only covered 17.9% of the cultivated area. Next were yams which occupied 16% of the crop areas. In BORGOU, the second crop was yams, occupying 19.5% of the cultivated surface area, followed by corn with 19.0%. The other products were peanuts, cassava, beans, rice, voandzou, and fonio which only covered small areas and

which are grown only by 1/5 of the farmers as shown in Figure 4.

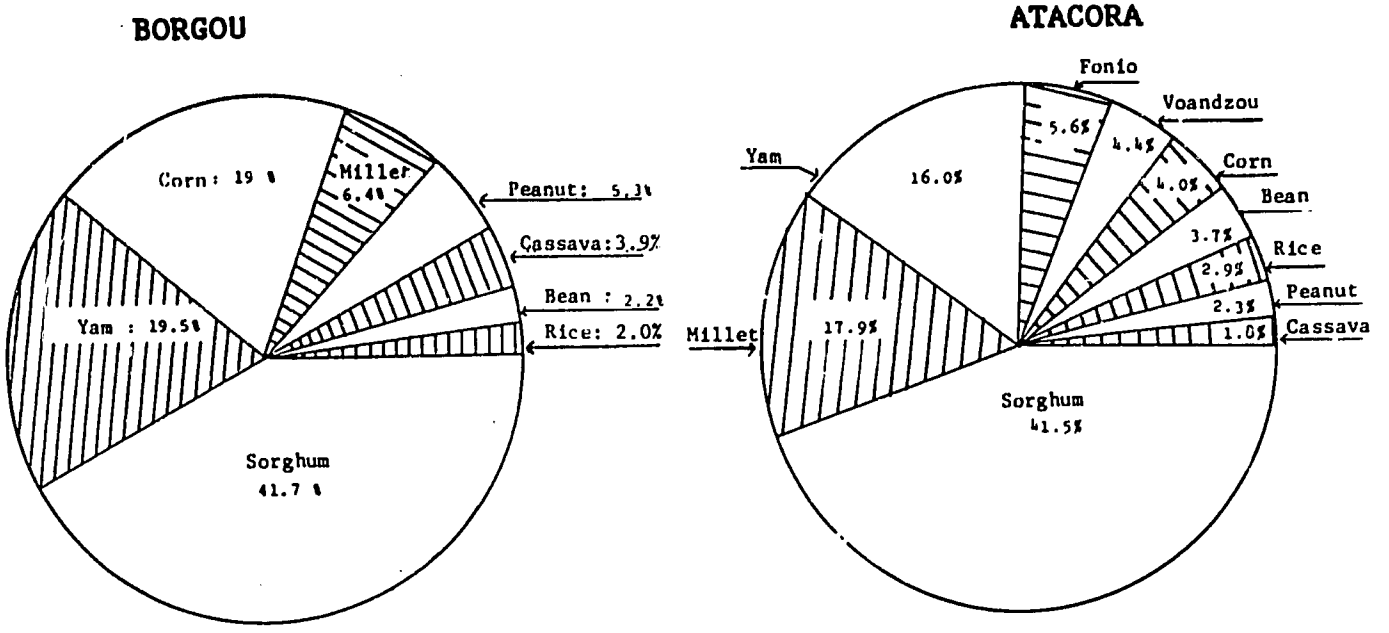
Table 1

DISTRIBUTION OF MAIN CROPS
IN NORTHERN PART OF BENIN

CROPS	BORGOU		ATACORA	
	AREA %	FARMERS %	AREA %	FARMERS %
SORGHUM	41.7	84.4	41.5	79.8
YAM	19.5	65.6	16.0	76.0
CORN	19.0	75.5	4.0	22.2
MILLET	6.4	9.9	17.9	53.2
PEANUT	5.3	14.0	2.3	13.9
CASSAVA	3.9	18.9	1.8	13.2
BEAN	2.2	11.6	3.7	28.2
RICE	2.0	6.0	2.9	19.9
FONIO	-	-	5.6	12.7
VOANDZOU	-	-	4.4	22.3

Figure 4

RELATIVE IMPORTANCE OF MAIN CROPS



F. Budget and consumption study

The purpose of this survey is to identify the budget practices and describe the structure of the household budget with the help of the various expenditure and income items and to determine the quantities of food products consumed in the household and by individuals.

Generally the household head is the person who controls the income, and the decision as to expenditures is made by him on a priority basis. This was the case in 83.3% of the households in ATACORA and 87.9% in BORGOU. Among the saving systems used, hoarding at home was the most frequently used method; it was practiced by 73.5% of the households in ATACORA and 51.6% in BORGOU. In the North, there was very little tontine, a form of saving which is very prevalent in the south. Savings

institutions, such as the National Savings Fund, the Local Mutual Agricultural Credit Fund, and the banks were rarely used. Furthermore, 20.8% of the households in ATACORA and 41.0% in BORGOU reported that they were not saving anything. The total amount of savings was very small: 70.1% saved less than 20,000 F CFA during 1980 in ATACORA and 77.4% did so in BORGOU for the same period of time.

1. Incomes

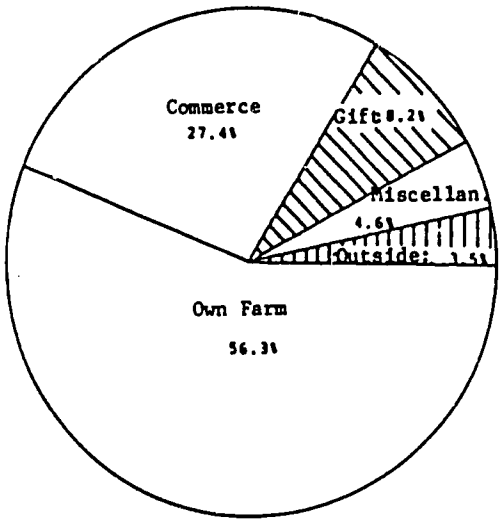
The annual household income in ATACORA was very small, barely amounting to 100,000 F for a farm household (see Figure 5) and 170,000 F for a non-agricultural household on the average (see Figure 6). The median income of a farm household was only 32,800 F and 38,800 F for non-agricultural households in ATACORA. Although these figures were probably understated, we can estimate, on the basis of household expenditures, that the average per capita income was around 20,000 F CFA, (100 dollars) for the year 1980.

In BORGOU, the annual income is definitely higher. It is 270,000 F for a farm household and 305,000 F for a non-agricultural household but the median is only 80,000 F and 134,000 F respectively. The average per capita income in BORGOU was around 23,500 F (115 dollars) for the year 1980.

Figure 5

FARM HOUSEHOLD INCOME STRUCTURE

ATACORA



BORGOU

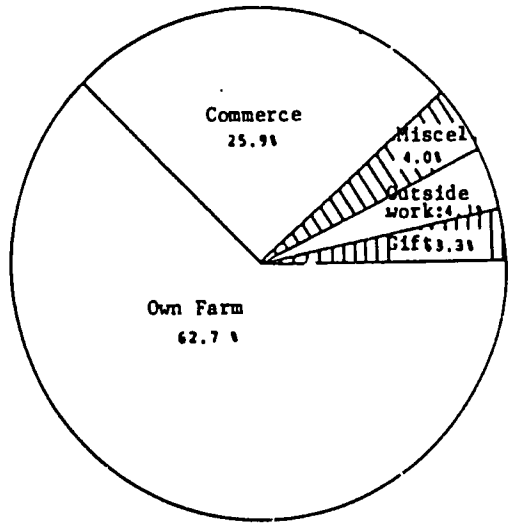
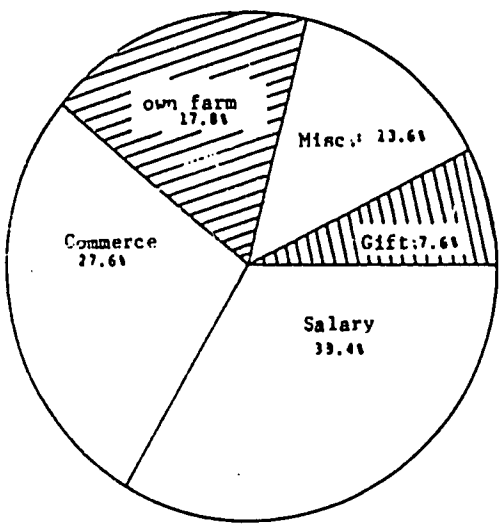


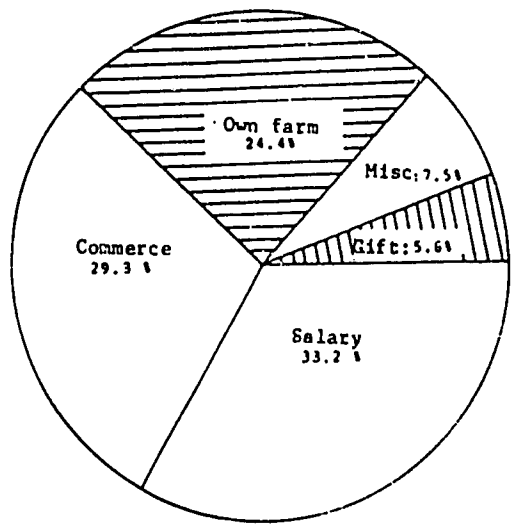
Figure 6

NON-AGRICULTURAL HOUSEHOLD INCOME STRUCTURE

ATACORA



BORGOU



Farm household income structure in ATACORA indicated 56.3% of the income was from farm operation: 27.4% from commerce, 3.5% from outside work, with the balance from gifts (8.2%) and miscellaneous. For non-agricultural households, salary accounted for 17.8%. Non-agricultural households without land holdings, which permit them to supplement their incomes, were rare. Gifts accounted for 7.6% and miscellaneous for 13.6%. Commerce was supplementary income for farm households as well as non-agricultural households.

In BORGOU household income was 62.7% from farm operations, 25.9% from small-scale commerce, and 4.4% from outside work. The rest consisted of gifts (3.3%) and miscellaneous (4.0%). For non-agricultural households, the salary accounted for only 33.3% of the income. Commerce represented 29.3% and farm operations accounted for 24.4%, an even larger portion than in ATACORA.

2. Expenditures

The household expenditure structure in ATACORA showed that farm households spent 2/3 of their income on the following:

- Food..... 34.2%
- Commerce..... 11.6%
- Ceremonies and leisure..... 12.4%

Non-agricultural households spent more than 2/3 of their income in only two categories. Food accounted for 51.7% of all expenditures and commercial purchases consisted of 23.0%. The portion devoted to ceremonies and leisure was only 2.8%.

In BORGOU the household expenditure structure showed that farm households as well as non-agricultural households spent 2/3 of their income on food and commercial purchases.

Food represented 30.7% of the expenditures of the farm households and 38.9% for the non-agricultural households. Commerce accounted for 29.2% of the expenditures among the farm households and 43.3% among the non-agricultural households. Other expenditures, such as ceremonies and leisure, housing and clothing were insignificant and, for all of these categories, did not exceed 17.8% for farm households and 8.7% for non-agricultural households.

3. Food consumption

An examination of the detailed structure of food consumption (see Table 2) in ATACORA showed that consumption per individual and per year was higher among the farm households than among the non-agriculture households, both for cereal crops and for tubers; 125 kg of cereal crops for farm household as against 98 kg for non-agricultural households and 195 kg of tubers as against 107 kg. Cereal crop consumption was higher than that for all of BENIN (87.7 kg according to a study by French Cooperation in 1980). Tuber consumption was very much lower, especially for the non-agricultural households, with 107 kg against 217 kg.

Non-agricultural households consumed more beef and pork than farm households but less mutton and goat meat. Finally, the non-agriculture households consumed more eggs but less milk than the farm households. In contrast to

ATACORA, food consumption of farm households in BORGOU is barely higher than that of the non-agricultural households. Food consumption among non-agricultural households consisted of more beef than farm households (10 kg per individual per year, against 8 kg) but they consumed neither mutton, goat meat, nor pork. Finally, non-agricultural households consume less eggs but as much milk : 10 liters per individual per year, for agricultural and non-agricutlural households in both of the northern provinces according to a study by French Cooperation, published in 1980.

Table 2

CONSUMPTION STRUCTURE
(kg per individual per year)

PRODUCTS	ATACORA		BORGOU		BENIN
	FARM HOUSEHOLDS (kg)	NON-FARMING HOUSEHOLDS (kg)	FARM HOUSEHOLDS (kg)	NON-FARMING HOUSEHOLDS (kg)	FRENCH COOPERATION STUDY, 1980 (kg)
Cereals	125	98	150	146	87.7
Tubers	193	107	144	115	217.2
Beef	2	7	8	10	3.7
Mutton	2	1	1	-	3.7
Goat	2	-	3	-	0.7
Pork	1	2	-	-	1.6
Eggs (Unit)	5	13	8	5	-
Milk (Liter)	9	3	10	10	4.4

III. GENERAL OUTLINE OF THE SOCIO-ECONOMIC STUDY FOR THE DEVELOPMENT OF ONCHOCERCIASIS FREE AREAS

VOLUME 1:	General information - Methodology
VOLUME 2:	Socio-demographic data. ATACORA
VOLUME 2B:	Socio-demographic data. ATACORA Statistical tables
VOLUME 3:	Socio-cultural data. ATACORA
VOLUME 3B:	Socio-cultural data. ATACORA Statistical tables
VOLUME 4:	Data on Health-Hygiene-Nutrition. ATACORA
VOLUME 4B:	Data on Health-Hygiene-Nutrition. ATACORA Statistical tables
VOLUME 5:	Animal husbandry and transhumance. ATACORA
VOLUME 5B:	Animal husbandry and transhumance. ATACORA Statistical tables
VOLUME 6:	Agro-economic data. ATACORA
VOLUME 6B:	Agro-economic data. ATACORA Statistical tables
VOLUME 7:	Budget-consumption data. ATACORA
Volume 7B:	Budget-consumption data. ATACORA Statistical tables
VOLUME 8:	Socio-demographic data. BORGOU
VOLUME 8B:	Socio-demographic data. BORGOU Statistical tables
VOLUME 9:	Socio-cultural data. BORGOU
VOLUME 9B:	Socio-cultural data. BORGOU Statistical tables

VOLUME 10: Data on Health-Hygiene-Nutrition. BORGOU

VOLUME 10B: Data on Health-Hygiene-Nutrition. BORGOU
Statistical tables

VOLUME 11: Animal husbandry and transhumance. BORGOU

VOLUME 11B: Animal husbandry and transhumance. BORGOU
Statistical tables

VOLUME 12: Agro-economic data. BORGOU

VOLUME 12B: Agro-economic data. BORGOU
Statistical tables

VOLUME 13: Budget-consumption data. BORGOU

VOLUME 13B: Budget-consumption data. BORGOU
Statistical data

VOLUMES 14 to 27 General information on the Districts. ATACORA

VOLUME 14B: District of Bassila. Statistical tables
- Socio-economic data
- Socio-cultural data
- Data on Health-Hygiene-nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 15B: District of Boukoumbé. Statistical tables
- Socio-economic data
- Socio-cultural data
- Data on Health-Hygiene-nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 16B: District of Cobly. Statistical tables
- Socio-economic data
- Socio-cultural data
- Data on Health-Hygiene-nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 17B: District of Copargo. Statistical tables
- Socio-economic data
- Socio-cultural data
- Data on Health-Hygiene-nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 18B: District of Djougou Urbain. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Agro-economic data
- Budget-consumption data

VOLUME 19B: District of Djougou Rural. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 20B: District of Kérou. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 21B: District of Kouandé. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 22B: District of Matéri. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 23B: District of Natitingou. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 24B: District of Ouaké. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Socio-economic data
- Budget-consumption data

VOLUME 25B: District of Péhunco. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Socio-economic data
- Budget-consumption data

VOLUME 26B: District of Tanguiéta. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 27B: District of Toucountouna. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUMES 28 to 41 General Information on the Districts. BORGOU

VOLUME 28B: District of Banikoara. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 29B: District of Bembereke. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 30B: District of Gogounou. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 31B: District of Kalalé. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 32B: District of Kandi. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 33B: District of Karimama. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 34B: District of Malanville. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 35B: District of N'Dali. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 36B: District of Nikki. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 37B: District of Parakou. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 38B: District of Perere. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 39B: District of Segbana. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 40B: District of Sinendé. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data

VOLUME 41B: District of Tchaourou. Statistical tables
- Socio-demographic data
- Socio-cultural data
- Data on Health-Hygiene-Nutrition
- Animal husbandry and transhumance
- Agro-economic data
- Budget-consumption data