Burkina Faso

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WOMEN'S PRODUCTIVE ACTIVITIES, FAMILY FOOD CONSUMPTION, AND CHANGING PATTERNS OF GRAIN PRODUCTION IN BURKINA FASO

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Preface

The South-East Consortium for International Development (SECID) is a non-profit organization composed of thirty-four research and academic institutions located in the southern and eastern United States. SECID provides research, training, and technical assistance to developing countries. In 1980, SECID established the Center for Women in Development with funding from the Office of Women in Development at the Agency for International Development. The Center's primary objective is to ensure that women, as agents and beneficiaries, are included in all phases of SECID's development initiatives. This has included working with SECID member institutions to identify and utilize qualified women faculty and with SECID's overseas projects on design and implementation.

In 1981, the Center established the International Fellowship Program in Technical Assistance. This program was designed to respond to several critical needs in the area of women in development by: 1) increasing opportunities for women to gain international experience; 2) advancing important WID issues via a balanced approach of research and direct participation in community development activities; and 3) integrating WID approaches and issues into existing SECID projects.

During 1983 and 1984 two SECID/CWID Technical Assistants worked with women in Burkina Faso (known as Upper Volta until April 1984) to assess the role of women in family food consumption and grain production. In 1983, Della McMillan, an anthropologist at the University of Florida at Gainesville's Center for African Studies (now at the University of Kentucky), spent three months in Burkina Faso studying the Grain Marketing Development Project. In 1984 Suzanna Smith, a doctoral candidate in the University of Georgia's Department of Child and Family Welfare spent three months in Burkina Faso assessing women's roles in food consumption and production activities. Their reports and recommendations are presented here.

WOMEN'S PRODUCTIVE ACTIVITIES AND FAMILY FOOD CONSUMPTION IN BURKINA FASO

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The author is grateful to project team members with the Center for Research on Economic Development (CRED), of the University of Michigan, Ann Arbor, particularly Chuck May, Ellen Scarlatta, and Chantal Dejou for their invaluable assistance in the field. In addition, the author thanks Esther Ankomah for her energetic involvement with the study, including her translations, ideas, and unique perspective as an African woman.

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OVERVIEW

Like other countries in the Sahel Burkina Faso has been devastated by drought, declining food production, poverty, and illness. In the drought of 1968-1974 "crops were destroyed, wells ran dry, and... severe food shortages were alleviated by large inputs of... food (aid)" (AID, 1977, p. 1). Food production declined 3.6 percent from 1970 to 1978 (Ames, 1983).

In 1984 rains were rare and the crops largely failed (Cowell, 1984). One relief worker in the northern and most affected part of the country said the current drought is worse than 1973. That region requires 20,000 tons of grain, but only 5,500 tons were harvested. The country as a whole will require 200,000 tons of emergency food aid (Cowell, 1984).

Various projects have been undertaken in Burkina to identify food-related patterns and the extent of problems and resources. Emphasis has been placed on grain consumption, production, distribution, and marketing; child and maternal nutrition; and food scarcity and foreign aid. United States projects have been sponsored by private agencies and universities, private reserch groups and nonprofit relief organizations, and U.S. agencies. The government of Burkina and the University of Ouagadougou have implemented research projects to guide food-related policy and planning. Certainly the breadth of content and sponsorthip indicates a strong movement to identify "innovative approaches" (Ames 1983) to increase the availability of food.

Women as actors in farming and marketing systems are seldom included in development plans and research (Lewis, 1981), and projects in Burkina are no exception. None of the projects mentioned above recognized women's unique roles and vital contributions to farming and marketing systems, despite the fact that women are responsible for or integrally involved in virtually every aspect of food production, preparation, and consumption. African women in general are responsible for seventy percent of agricultural production, fifty percent of food storage, ninety percent of water supply, eighty percent of fuel supply, and one hundred percent of cooking, as well as sixty percent of marketing (Blumberg, 1981).

This paper reports the results of field work examining women's productive activities in farming and marketing in Burkina Faso. The purpose is outlined below and followed by an important Introductory Background about the country, family farming systems, and women's work. The third section is the Field Report, which is followed by conclusions.

PURPOSE AND RATIONALE

The primary purpose of this study is to examine women's productive roles within the context of familiar, cultural, economic and environmental circumstances in geographically and culturally diverse regions of Burkina Faso. Until recently work examining women's roles worldwide has concentrated on food preparation and nutrition (Lewis, 1984, p. 171). Few studies have recognized the independent importance of production and consumption. As a result, women's contribution to farms and households has been ignored (Buvinic, 1983, p. 18). In this study women are assumed to be agents of production as well as reproduction, engaging in independent productive activities.

A second aim of this study is to generate hypotheses about the linkages between women's productive activities on the one hand, and family food production and consumption on the other. Although we are familiar with women's roles at various points in the food cycle, their role in production and its relation to food is only beginning to be understood (Charlton, 1984). The exploratory nature of the project must be emphasized. It constitutes preliminary work in this area and has been used to identify existing patterns and potential areas for further research, which are suggested in the conclusion.

I Introductory Background

Attention to several aspects of life in Burkina Faso is essential to a thorough understanding of this study. These include: (1) the people and land, including population trends and agricultural characteristics; (2) the household level farming system, where one can observe the impact of recent changes; and (3) women's roles in farm production. This discussion concerns the importance of women's productive activities and obstacles against these women as the economic system is transformed from a subsistence to a cash-based economy.

Burkina Faso: Population and Land Use

Burkina Faso is a landlocked country about the size of Colorado in the Sahel region of West Africa (see Maps). The population is 7.9 million. With forty-five percent of the population under age fifteen, the rapid growth rate of 2.7 percent per year is likely to continue (U.N. Department of International Economic and Social Affairs, 1982), despite an infant mortality rate that is the

highest in the world (167/1000 live births on the average or 163/1000 in rural areas) and a life expectancy that is one of the lowest, 32 years at birth (U.S. Bureau of the Census, 1984).

The Mossi, the predominant ethnic group, comprise about forty-eight percent of the population (see Maps). The nomadic Fulani make up the second largest group, at 10.4 percent. Up to sixty other ethnic groups inhabit the country, speaking about fourteen different languages and a number of dialects (Peron and Zalacain, 1975). Most people, 90-93 percent of the country's population, are subsistence farmers living in rural areas. Agriculture accounts for forty percent of the GNP and nearly all exports. The per capita gross national product is the lowest in Africa and the per capita income, $110 per year, one of the lowest in the world (McFarland, 1978).

The population is concentrated in the central plateau, also known as the Mossi plateau. The area's population varies from thirty to as many as eighty inhabitants per square kilometer. Fewer numbers of people reside in the extreme north and west. Less than ten percent of the population resides in cities, primarily the capital, Ouagadougou, and Bobo-Djioulasso (Institute National d'Education de Haute-Volta, 1981; U.S. Bureau of the Census, 1983).

Over the course of the last twenty years migration has acted as a safety valve to ease the increasing population pressure. From ten to twenty percent of Burkina's citizens migrate at least temporarily for work on plantations in the Ivory Coast or Ghana (de Wilde, 1967b; Peron and Zalacain, 1975). Young people continue to migrate to cities for jobs and to escape from the constraints of tradition (de Wilde, 1967; Institute National d'Education de Haute-Volta, 1981). Internal migration from one rural area to another is also taking place, particularly toward the more fertile areas of the south and west (see Maps).

In the late 1960s the availability of area for cultivation was less than one hectare per inhabitant for Burkina as a whole, with as little as half a hectare in the central region (de Wilde, 1967b). Although current figures have not been located, one would expect availability of arable land to be even less.

The country is divided into three diverse agroclimatic zones with varying terrains and climates (see Maps). The semitropical Guinean zone (also called sub-Sudan) in the southwest has the most rainfall, from 1000 to 1800 milimeters per year. It is an area of lush rolling hills and dense vegetation. At the extreme north is the Sahel, where rain is scarce - as little as 400 milimeters per year. The air is hot and dry almost year round; land is flat with sparse vegetation. The center Sudan, which forms a plateau, includes forests, savannas,

and prairies. It is more densely vegetated than the Sahel, but less so than the Guinean zone (Peron and Zalacain, 1975). The attached maps provide more detailed information about the rainfall, temperature, and agriculture of each zone. They have been included to portray the country's diversity and to acquaint the reader with environmental conditions of each of the areas the author visited, because these are part of the study's context.

Agricultural conditions in Burkina are conducive to growing millet and sorghum, which require little water, can grow in poor soil, and can survive drought, dry heat, and a short rainy season. Sixty to ninety percent of the land is devoted to these crops. Corn is common as a secondary crop. Minor crops, such as beans, peanuts, and sorrel, are often grown in margins of fields or in smaller sectors. The southwest can support fruit, sugar cane, tobacco and rice, which cannot grow in the drier areas of the country (Hammon, 1965).

Historically, Burkina has been self-sufficient in food production, with considerable variation from year to year (International Science and Technology Institute, 1981). In the early 1900's there were famines, but in the post World War II period rainfall was adequate. Declining rainfall in the 1960's created conditions described as "extremely unfavorable natural, economic, and human factors" in an area of limited potential for cultivation and "poor and brittle soils on the whole not very well-suited to agriculture" (de Wilde, 1967, pp. 390; 369-70). Burkina's agricultural outlook in the 1960's was grim, and by the drought of the 1970's, food deficits had reached twenty-three percent of domestic requirements. During 1972-74, consumption fell twenty percent below trend levels, reducing caloric intake to seventy percent of nutritional standards (Haggblade, 1984). The mid 1970's were better crop years, but the trend has generally been toward declining food production and increasing imports, especially food aid (International Science and Technology Institute, 1981). Studies of two regions of the country indicated food production could not meet people's needs in 1982. In 1981, even with fair rains, people purchased more grain than they sold, which is an increasingly common trend (Matton and Vierich, 1983).

There may be a longer term potential for self-sufficiency if certain conditions are met. First, food could be redistributed from the "well-endowed" areas of the southwest to the deficit regions. Such distribution, however, is threatened by poor transportation and communication, as well as lack of proper storage facilities (Guerin, 1984; Haggblade, 1984). Second, improved varieties of crops could be incorporated into existing farming and marketing systems (International Science and Technology Institute, 1981, p. 6). No matter what steps are taken, women must be considered in plans for food self-sufficiency because they: a) are involved in almost every aspect of agricultural production; b) virtually control food preparation, and (c) are heavily involved in marketing (Blumberg, 1981; Konter, 1980).

Family Farming Systems and Marketing Practices

Family farming in West Africa depends on an exchange of labor between the sexes in which men clear the land for women's food crops, while women weed and transplant men's crops (Lewis, 1984, p. 172). Men and women work together to cultivate men's crops, of which women receive a portion for their consumption. Women also often have access to their own plots of land, and may market their surplus for cash.

Although the division of labor is based on exchange, however, the terms are not equal. Women sometimes are helped by men to develop their own land resources, but men can more easily recruit family labor, particularly their wives, to assist them. Men enjoy positions of higher authority, are fewer in number, and have larger holdings for cultivation than women. Women spend more time assisting their husbands than cultivating their own crops (Beneria, 1979), yet rarely do they control the profits of cash crops (Lewis, 1984). Furthermore, a woman may not have control over the profits of her own sales (see Henn, 1984, p. 17). The inequality inherent in this system of exchange has been exacerbated by families' increasing dependence on cash to purchase food and other goods. The consequences are particularly devastating for women.

In Burkina men control production of grains consumed nationally while women control truck gardening (Lewis, 1984). Because garden crops are more difficult to store, transport, and market, they are likely to be distributed only in the local market. Thus a women's income-generating capacity is limited, as is her potential for contribution to local and national development plans (Huntington, 1975).

Furthermore, with increased population pressure and the resultant trend toward privitization of land, men have greater access to land for commercial cultivaton, as well as to agricultural inputs. Women, on the other hand, are unable to get land to start cash crop production (Boserup, 1980). They have little cash income and no access to credit. While men reinvest their profits into commercial farming women are left with poorer land and increasing financial dependence on their husbands (Boserup, 1980).

As food production changes from family-based subsistence production to production for sale, women "may become unpaid family aid in their husband's food

producing enterprises, they may lose the little economic independence they now have, because they supply themselves and their children with food and can sell whatever food surplus they produce" (Boserup, 1980, p. 16).

In addition, as men migrate to urban areas or to neighboring states in search of jobs (Songre, 1973) agricultural output and productivity decline if the man stays away for very long (Miracle & Berry, 1970). Women become overburdened by assuming increased responsibilities for household and subsistence agricultural production as well as for cash cropping.

The critical variable in women's positions in family farming systems and the emerging market economy is their control of resources and the products of their labor. Access to and control of resources increasingly are becoming the keys to economic success. In the case of women, these factors are threatened by women's increased responsibilities at home and on the farm.

Women's Roles in Production and Marketing

Conventional measurements of women's work have been criticized for conceptual inaccuracies and cultural biases. These weaknesses have led to both an underenumeration of the economically active female population and distortions in our understanding of women's productive roles in the Third World (Youssef, 1984).

Recently published data (U.S. Bureau of the Census, 1984) has been structured to remove some of the usual biases by including unemployed persons and homemakers in its statistics of economically active women. In Burkina Faso seventy-nine percent (seventy-four percent urban and eighty percent rural) are economically active. These figures indicate that from ninety-two to ninety-seven percent of women ages twenty to forty-nine are active in the economy. Homemakers account for seventy-six percent of the total, indicating the sizeable proportion of women who would not have been counted if conventional measures had been used. These general statistics do not, however, provide a qualitative picture of women's work. The qualitative dimension emerges from the areas outlined below.

Subsistence farming is the chief occupation for many African women (Stichter, 1984). Yet this category has for some time been addressed in terms of women's roles in food preparation for family use, excluding food preparation and livestock production for cash sales. Women's marketing of agricultural and nonagricultural products is only beginning to be explored, and this study is part of that preliminary effort.

The informal sector, also called the "extensive shadow economy" (Youssef, 1984, pp. 4-9) and the "periphery of the formal sector" (Stichter, 1984, p. 189), includes beer brewing, prostitution, and sales of prepared foods and agricultural produce (Jules-Rosette, 1982). These jobs are not integrated into industry coding or occupational breakdowns; they fall outside institutional and tax structures and business locations (Youssef, 1984). They are, however, flexible enough to fit in with childcare responsibilities (International Center for Research on Women, 1980) and can be done irregularly or along with other activities.

These jobs are not often translated into modern employment because low levels of literacy prevent most women from establishing and regulating extensive, profitable business transactions. In reality, these jobs mean only the "barest survival" and may only act as a "sponge disguising unemployment" (Songre, 1973, p. 209).

Census figures, which are based on questions about a principle economic activity, do not accurately represent the multiplicity of simultaneous roles many women play at various times. For instance, child care and marketing roles might coincide; milk selling may be interspersed with housework; or women may work at gardening during the rainy season and hair-plaiting during the dry season. This study serves to illustrate the combination of productive activities in which women are involved.

Whatever work women do it is essential for individual and family well being. Women are responsible for feeding their children but subsistence activities no longer fully provide for their needs. Women must have some way to obtain cash independently; only then will they control its use.

The International Center for Research on Women (1980) summarizes:

> Women's ability to meet the subsistence needs of their families is inextricaby tied to the extent of control they exert over the intrahousehold allocation of money. It has been reported that where women remain in control of their individual income, as in sub-Saharan Africa..., increased income tends to improve both the quantity and quality of the food available to their families. Increased income of men, who are often not required to help meet family subsistence needs, goes into the purchase of consumer goods and entertainment, and only in case of emergencies into buying food items. (p. 6)

Here we begin to see the important linkage between women's work and family nutrition.

II. Field Report

Methodology

This study took place during eight weeks in July, August, and September, 1984. Preliminary field work in Piela in the eastern part of the country, north of Fada-Ngourma and on the Mossi plateau, provided background information about women's work and food consumption and shaped subsequent questioning. Consultation with others involved in consumption and marketing studies provided additional information and clarification. The final phase of the project was undertaken in cooperation with a grain marketing project conducted by the University of Michigan's Center for Research on Economic Development (CRED).

Three of the five villages in the CRED village studies were selected for varying ethnic, environmental, and socioeconomic circumstances. Specific households were recommended by members of the CRED team for women's involvement in various productive activities, including both marketing and cultivation. The sample was not intended to be purely random, but was meant to capture diversity in women's activities, ethnicity, and economic circumstances, while remaining general enough to represent a cross-section of villagers.

Eight families in each village were selected for a total of twenty-four families. This discussion concerns twenty-six women in twenty-one households. The families excluded are those for whom data is redundant or insufficient. A list of families included in this report is included at the end of the study.

Initial interviews were conducted in homes or fields, with women only whenever possible, about seventy-two percent of the cases. Husbands or children were present in about twenty-eight percent of initial interviews; usually these were terminated prematurely because of the woman's discomfort. In all cases second interviews the following day or later in the week were conducted for additional questions, clarification, gift-giving, and goodbyes.

One French-speaking person in each village was chosen as an informant, contact person, and interpreter of the local language. In approximately eight percent of the cases interpreters were women. In two villages one hundred percent of the interviews were conducted with a woman's assistance. The third village, unlike the other two, was composed of several ethnic groups and it was impossible to find a woman who spoke both of the local languages as well as French. Although a female interpreter was available for three of those cases, for the remainder we relied on two African male interviewers who lived in the village and were already acquainted with the sample families to conduct the CRED studies. An English translator accompanied me to each village and worked closely with me in the process of choosing and interviewing subjects and culling information from those discussions.

The questionnaire (included at the back) was used not as a strict format but as a guide that allowed for variations in individual circumstances. It provide both structure and flexibility. Three issues were addressed: 1) women's cultivation responsibilities; 2) their independent economic activities; and 3) family consumption patterns. In keeping with the purpose of the study, information requested was of a general nature rather than of the time-use or weights and measures variety.

Regions

The description of the study begins with the Sahel area of the Mossi plateau in the village of Mene. This area and its people represent the overall character of the country, including its social, economic, and environmental problems. The plateau is the home of the predominant ethnic group, the Mossi. It is the most densely populated area of the country and faces the most serious droughts and grain deficits. The information about women's economic activities that is presented provides the conceptual foundation for the study by describing types of work, the seasonal or complementary nature of work activities, and the factors that most influence women's ability to cope with such a harsh environment. In addition, two other coping strategies, migration to other countries for jobs and the adoption of Islam, are discussed.

In stark contrast to the Sahel area is the grain surplus region, the Volta Noire district, where the village of Dankui was the subject of this study. Current government emphasis is on redistributing the surplus from this area to deficit regions, particularly to the Sahel and other areas of the Mossi plateau. Actual conditions in the area are illustrated in descriptions of economic activities. Most of the discussion revolves around a comparison of women in three ethnic groups. In addition, the Dankui section illustrates the potential impact of social and economic change on women's roles in the economy and household decision-making about food distribution.

The third region is located in the southwest, also lush and known for vegetable and fruit cultivation. Here, in the village of Bare, the Bobofine is the predominant ethnic group. Bobo-Djioulasso, the second largest city in Burkina, is the hub of the area and is not far from Bare. The conditions in Bare reflect the dramatic impact of cash economy and urban access on village life.

Each region is discussed separately to identify environmental and ethnic differences. The common focus is women's independent economic activities, i.e., their access to and control over their resources, and the impact on individual and family life. Within each region different themes develop. In Mene women's strategies for living in a harsh environment are discussed. In Dankui the emphasis is on the impact of economic change on women's roles. In Bare the focus is on urban influence on women's activities. From the discussions of individual cases emerges a continuum of women's autonomy, ranging from extremely dependent to independent. Thus emerges a profile of an "average", the common woman of Burkina Faso.

Mene

Mene is a village of about five hundred located in northern Burkina in the southernmost portion of the Sahel region on the Mossi plateau. The village is about forty kilometers north of Ouahigouya, the fouth largest city in Burkina with a population of about 33,000. Just outside of Ouahigouya the paved road drops off to a dusty, craggy route that is difficult to travel. Villagers do not come and go easily between Mene and Ouahigourya; people of the area see few visitors and trips to the city are rare. Mene itself has an active market. Trade is primarily on a small scale, with women selling soap, cakes, spices and occasionally some grain. Larger sales of grain in bulk, for instance, are generally conducted by traders from Ouahigouya or by villagers or other local people who have been able to transport a larger quantity of goods.

The land is poor and the drought has severely affected productivity. Fields were barren or sprouting only nubs of millet. A riverbed was dry. Rain registered on an agriculture extension worker's gauge was minuscule. One villager compared this to Mene thirty years ago, when trees and streams gave way to barren land and parched riverbends. This area is among the country's most environmentally threatened, as the Sahel pushes southward and drought continues to devastate crops. In addition, overpopulation puts an even greater strain on fragile resources and makes it difficult for people to meet their needs for food, water, fuel, and land. Families with a history of self-sufficiency have become increasingly dependent on food aid and cash to purchase grain. These deficit conditions are complicated by poor roads and lack of transportation. In addition, although Mene has an active market, without an income from other sales survival is difficult.

Together, environmental and economic pressures pose serious threats and force families to find various means for securing food and money. Under these circumstances traditions may be adapted to allow people to meet their needs. Islam, for instance, which allows individual greater economic and social freedom than traditional animism, has made inroads in Mene. Virtually every family in the sample was Muslim, a sharp contrast with other parts of the country where animism still predominates. Similarly, a large proportion of men migrate seasonally for work in the Ivory Coast, leaving their land in the care of wives and brothers. These two strategies are discussed further in the conclusion.

In this harsh context women's ability to function autonomously is critical to survival. They can no longer depend on their husbands to provide for them; indeed, their husbands, with poor harvests and little money to purchase grain, count on wives to provide for themselves. In some instances women rely on conventional sales of cakes, peanuts, and pottery for a few pennies for condiments. Some women remain farmers, cultivating only in the hopes of filling their granaries. In contrast, those women who have been willing to risk family criticism by stepping outside their traditional roles have been most successful

at functioning independently, without relying on their husbands for support. Access to money gives these women independent decision-making power and assures them of being able to feed their children.

It is important to note that although some women have greater economic power, that power is used in the interest of their children and husbands. They do not, however, depend on husbands to care for them and, unlike the petty traders and farmers, if their husbands could not support them the women would have some means of surviving independently.

In short, the economic activities women pursue influence their status, independent decision-making power, and family survival. Five cases presented here illustrate this theme. These involve: 1) three farmers who, in their discussion of their crops, animals, cash, and money, emphasized the relative importance of these types of resources; 2) two industrious vendeuses (market women) who have profitable grain sales and explain the perceived rewards accruing to both husbands and wives; 3) the Islamic leader who speaks for his wife while she quietly sells her animals for a tidy profit; 4) the poor potter and her resentful husband who have little tolerance for intruders; and 5) a migrant's wife whose crops failed because of the drought, who does not pursue independent economic activities but depends on her husband's brother for support.

Farmers P. Amade, farmer and herder, is the oldest of three brothers and the chief of the compound. In addition to him and his wife Zoemboe, there were also P. Boucare, a farmer, and his wife Alizeta; and P. Tassere, another farmer, small merchant, and herder, and his wife Alizeta. The wives were each active as farmers and in their own small trading, although existing records report farming as their only economic activities.

The women work in their husband's fields in the morning and early afternoon, then they are free to cultivate their own. Each wife has her own fields of peanuts, sorrel, sesame, or beans. In addition, Zoemboe has her own fields of millet and white sorghum. Alizeta, Boucare's wife, grows okra. Zoemboe's more prestigious and economically productive crops may reflect her status as the chief's wife. Certainly her grains give her greater access to important resoucres--the food staple or money if she sells some. In comparison, Alizeta's okra provides only sauce for tô, the porridge-like cooked grain staple, or a few pennies if sold. The harvest from all the wives' fields is stored in their granaries and remains there for consumption, or is sold a little at a time as money is needed.

During the rainy season the women's energy is channeled completely into the fields and the forthcoming harvest. During and immediately after the harvest, beans and millet are made into cakes that are sold from the home or in the market, sometimes hawked by the children, depending on the women's other obligations. These sales are intermittent, second to the harvest, and gains are small but sufficient to purchase salt and condiments for cooking.

Both Alizetas buy cotton and spin it into thread. Boucare's wife gives the thread to her husband to weave and sell; they share the profits, although Alizeta was reluctant to discuss the terms. Tassere's wife gives her thread to someone else whom she pays to make it into cloth. The families use the cloth according to custom, as shrouds. They may sell the remainder to pay for funeral expenses. Tassere's wife reported that she had spent money from the cloth for clothes for the children and a scarf, cloth, and shoes for herself, as well as for grain for her family. Members of the compound seemed to disapprove of Alizeta's use of her money, implying that she used money for her own needs that should have gone to the funeral instead.

Perhaps the cloth's ritualistic symbolism is the issue. Or, perhaps Alizeta is a renegade, deliberately having someone else make her cloth so she can remove it from her husband's control and sell the cloth herself or engage him to sell it but with greater profit for herself, since it is not his cloth. The traditional arrangement, in which women spin and men weave and sell, may be an example of the unequal exchange that was discussed in the section on family farming systems. If Alizeta spins the cloth and gives it to her husband he may sell it in the market without guaranteeing her a profit. If, however, Alizeta gives her thread to someone else, she bypasses her husband's control over her resource and may be able to sell the cloth herself. In this instance, Alizeta seems to have chosen to meet her own needs rather than family obligations. Those family obligations may be designed to insure the continuation of the unequal exchange whereby the woven cloth and profits remain in the male's control.

This issue poses several questions. First, does having someone else make their cloth indeed give women greater control over profits, and if so, are women pursuing this option more frequently? Second, men traditionally have sold their cloth in the market; will women sell their own cloth from their homes or gradually make their way to the market? These questions are particularly relevant given the interest in cotton for domestic textile production and export markets, and men's comparative advantage over women in the production of that cash crop.

Whatever the answers to these questions, Alizeta recognizes the power of money and ownership. For instance, when she uses her own money to buy cereal she keeps it in her own room, not her husband's granary. If she has the money, she keeps the grain; she is not required to share it with others, nor is she dependent on her husband for food: "It's who has the money (that matters)".

Market women Although women frequently sell cakes and condiments in markets, there are fewer who sell cereals. Hammon (1966) suggests that women prefer to avoid market competition, or try to avoid being seen selling their husband's grain. Purchases may be made from sellers' homes or alongside roads in an arrangement that benefits everyone involved, including husbands, producers, and the women themselves. Men thereby avoid spending too much time selling small amounts of grain for which they receive little profit; producers avoid coming to

market without the necessary government papers, and also avoid government regulation of the market; and women sellers keep their husbands from finding out they are selling grain that has been taken from what their husbands have allocated for meals (C. Dejou, unpublished manuscript, 1984). That no one wants to sell their grain is clear. They do so out of necessity, only in small quantities, and with some embarrassment and secrecy.

Women who lack capital are likely to perpetuate the current "alternative" market activities. Changing economic conditions, however, may favor women's active participation in grain sales if they have the capital from animal sales, husbands' contributions, or loans to invest in purchases from commercants (merchants, traders), which would allow them to keep their own grain. Some women in urban areas have become large-scale commercants. In rural areas, however, women have been purchasing grain in smaller quantities and selling it in local markets. Several women have established such small-scale trade in the Mene market. Usually they borrow capital from their husbands to purchase grain, which they sell for a greater profit than they could make by selling the more traditional leaves or cakes.

For instance, G. Ousame has been selling grain for six years. It "just "came to her" to do this, primarily because during the dry season she wanted something to keep her busy. During the rainy season her priority is working in the fields. Her husband matched half of her startup money and is pleased with the success of his wife's sales because now he does not have to provide her with everything. His support is noteworthy and will be discussed in more detail later.

Ousame purchases grain from a commercant in Mene. She decides what to buy based on how much profit she can make, but her family's grain needs are also an important motivation. She buys what her family will eat and uses what she cannot sell for them. All her profits are hers to keep. Although she uses some money for food, which means her husband reaps the benefits of her work indirectly, she does not rely on him for cash.

Y. Salhiata combines her marketing with animal sales. At the time of the interview grain shortages had curtailed her marketing activity, and the potential importance of the woman's animals for continued economic security became more apparent. She has six sheep, which she can sell for $8 to $25, depending on their size and repoductive potential. Profits from these sales go for sugar, coffee, and clothes for herself and her children.

Salhiata has been selling grain for ten years. She had grown tired of asking her husband for money for condiments and decided to "find something else to do to make money." She chose to trade in grains because it did not require an investment in preparatory materials like oil or flour for cooked items. If she wants just a little money, Sahiata can sell less profitable peanuts and legumes.

These are purchased and resold rather than drawn from her own stock. She gave up growing and spinning cotton three years ago, finding it an expensive and time-consuming process without much profit.

Islamic "Housewife" N. Issa did not grow up a Muslim, but adopted Islam in his young adulthood and has traveled to Mecca, spending four years at various jobs along the way. His first wife apparently stayed in France on the way home, planning to return to Mecca. She encouraged her husband to return to Mene to care for their parents.

Issa's second wife, he notes, "says she's Muslim but doesn't know God, doesn't pray from the heart". G. Fatimata, who has been married to Issa for several decades, has had plenty of time to adopt Islamic customs, but still leaves the house with her head uncovered, something a devout woman would never do.

Although Fatimata does not cultivate a garden, she is, nevertheless, economically active. Like other women, she spins cotton thread, which her husband weaves into shrouds. She makes a more substantial investment in animals, a particularly profitable one in the traditional economy, a source of prestige as well as a means of storing wealth. During hard times they may be sold. While men most often hold cattle, women own and tend smaller animals such as goats and sheep, which may be part of a bridewealth payment, as they were with Fatimata.

Even small animals make a significant contribution to the household economy. For instance, Fatimata has sold several sheep in the last year. Because her husband or sons are responsible for buying grain, a portion of the money is always given to her husband. Most recently Fatimata gave him about 1000 francs (a little over $2) of a 5500 franc sale. The rest she kept for cloth, sorrel, or to send to her family (1000 francs). Thus, her control over these animals has also given her control over the income they produce.

At the same time, Fatimata reported she uses som money for her animal sales to buy grain for the family. Issa commented, "In the old days you never bought food in the market." This is because according to Islam it was men's work to cultivate, harvest, and provide for the family and animals. In the old days Fatimata's income from her animals probably was not important to family survival but would have been solely for Fatimata's own benefit. As environmental changes have made it necessary to purchase food, Fatima's income has become vitally important to family survival.

Issa's approach to the distribution of grain also reflects the amalgam of Mossi custom, Islam, and economic necessity that is common to the area. According to Mossi custom, a wife never enters her husband's granary, for fear of illness or death. Although Islamic law does not address this issue, nevertheless Issa prefers to adhere to the local tradition in this matter instead. He adamantly denied that his wife would ever see the inside of his granary. Again, it is his reponsibility to provide for the family. Like other Mossi men, he probably does not want Fatimata to see his depleted stock. In addition, although environmental and economic circumstances challenge the traditional gender-based division of labor and responsibilities, Issa's position as patriarch is entrenched.

For instance, Issa simultaneously spoke heartily of himself and his wife as a team, but during the interview he maintained control over what and how much information was shared. Discussion about his wife and her activities took place primarily through him. Although she was present for all of our first visit and most of our second it was difficult to determine how much he revised her story in his telling of it.

Potter Y. Mariam, the first wife of K. Boureima, is a farmer and a potter. As a farmer, she works in her husband's millet fields and cultivates her own peanuts, sorghum, and legumes. With a good harvest she is able to use everything for consumption. Recent harvests have been poor, however, and it has been necessary for the family to purchase grain. Mariam is unable to purchase her own grain and relies on her husband for food. She leaves these purchases completely to him; he buys cereal but she "doesn't know anything about it."

During the dry season Mariam makes pottery, pounding local sand or old pot shards with water and firing it with wood collected from the bush. Pots can be sold daily in Mene for pennies for the smallest to a little over a dollar for the largest. Profits are used for the purchase of cloth. Mariam has few valuable resources of her own. She has more legumes than grains, no animals, and a small trade that brings little profit. Furthermore, the trade is subject to environmental changes that are making wood and water even more precious, particularly during the dry season when Mariam makes her pottery. With virtually no harvest of her own and little independent income, Mariam depends completely on her husband for food.

Her husband, K. Boureima, who is trying to meet traditional obligations in the face of poor harvests, is unable to provide food from his own crops and must buy grain at high prices. Perhaps because of this, during the interview he was uncooperative, refusing to answer questions about the source of grain. Along with his ill and frail mother who also lived in the compound, he made several angry comments the informant would not translate. Mariam became even more withdrawn, having been hesitant in some of her answers to begin with.

Migrant's Family P. Boucare has been working at a coffee plantation in the Ivory Coast for five months. The migration is considered a temporary but necessary money-making strategy. Boucare migrated with his second wife and their children, leaving behind his first wife and her children, in the care of Boucare's brother, Raogo. Raogo predicts that if this harvest is bad, he too will migrate "because there is no food here. I will have to go to work to get money."

The year's crop looked wilted and was barely calf-high; the family anticipates an unsuccessful harvest. Previous poor harvests have forced them to buy grain from the local Gouvernement Villageois (villager's government); at this preharvest "hungry season" prices are highest. With young children, grain does not last long.

Although the women can grow their own peanuts, sorrel, sesame and legumes, they have had "nothing to do" in the fields because of the drought. None of the harvest is used for sale; only a little is saved for the following year's planting. The women are not involved in other money-making activities.

Summary - Mene

Several patterns of women's productive activities emerged in Mene. Most activities complement women's farming and family obligations, and are scheduled round farming activities. Cake sales are made during and after the harvest as legumes and millet become available. Pottery is made during the dry season when field work is not done. Children may help in the preparation and sale of these goods. Some activities, such as spinning cotton, can be done year round. The cloth can be stored and sold at any time. This is one resource that allows the owner some flexibility since it does not have to be prepared, stored, or sold immediately. Presently the tradition of using cloth for shrouds appears to be giving way to selling it for the cash it can generate. If traditional practices are being supplanted by practices that can satisfy current economic needs, it will be important to determine the implications of such changes for women and their income-generating activities.

In Mene a women's community group works to develop farm and village improvement projects and to provide assistance to villagers who need help with labor or money. Orginally formed as an auxillary to a men's organization that was started nineteen years ago, the women's group began three years later. The men's group was at first a political group, but it later developed humanitarian and agriculture-conservation interests. The membership now includes seventy-five men and women from primarily one neighborhood in Mene. The men and women together have planted trees, built a water filtration system, gathered and laid gravel along the roads and fields to stop erosion, and bought a mill for the group's use. Other projects follow more traditional patterns of labor division by gender, with men constructing houses and wells, and women helping villagers with their fields. The women have developed projects of their own that have been quite successful, particularly with the help of the local extension agent. This agent loaned the group some peanuts for planting. The harvest brought enough profit to allow the group to buy a donkey. Late the agent loaned the group money for a cart. This cart is made available to other villagers for a small fee in grain or cash. The women indicated that they worked with the men's group when the project was something they could do together. They have, however, developed their own organization and treasury, which offers them some independence. This is particularly true in terms of having access to resources they have purchased themselves, such as the donkey and the cart, and to loans and credit when needed.

Substantial resources - animals and purchased grain - are means of storing wealth and providing women with significant incomes if sold. The women who had invested in these "goods" seem to be relatively secure, particularly in their ability to feed their families. Furthermore, their independence may in fact strengthen family ties by preventing migration and assuring that all family members' needs are met. By contrast, women who derive only sporadic income from informal and intermittent sales while depending solely on their husbands for food, seem particularly poor. In these families one might expect more desperate strategies, such as selling family grain. In addition, in these families husbands tend to maintain control over food production and distribution, leaving women even more vulnerable to environmental and economic circumstances. Lacking capital, these women are not able to establish themselves in income-generating activities that could relieve their cycle of dependency.

Clearly, the ability to bring in cash is what gives women some independence and freedom. In this destitute region cash may indeed be the quintessential bottom line, surpassing food and animals as resources that give women decision-making power. Alizeta said that having money is what is important; the one who has the money is the one who is important. Yet her sisters-in-law also have resources. For example, Zoembo has her own fields of millet and sorghum; but Alizeta's own granary was empty after ten days and she had to purchase grain. The second Alizeta had animals - sources of milk and meat, as well as status symbols. She sold the goats during the rainy season to have money for grain.

Family members are becoming forced to respond to declining food production and increasing cash needs by hiring themselves out for wages, rather than continuing to work the land. This pattern has emerged in Indonesia, where families traditionally have farmed together and now hire themselves out for plantation work (Palmer, 1983). In Latin America and the Caribbean, women frequently migrate to cities for employment as domestics (Buvinic and Youssef, 1978). In West Africa able bodied men are migrating to cities and plantations, leaving behind older men, wives, and young children. In Burkina such migrations are often seasonal, further complicating the situation. Environmental and economic threats continue. Family roles and reponsibilities are reorganized.

One final social change that may in fact be a coping strategy for the Mossi is the acceptance of Islam; there has been some speculation in the literature about the impact of Islam on Mossi life, particularly economic life. Hammon (1966) notes that "with the...growth in importance of market exchange, the importance of Islam has increased" (p. 180) by allowing converts greater flexibility in traditional economic and social cooperation with kin. Thus they have more opportunity to pursue other activities outside traditional confines. Converts to Islam can simultaneously maintain security in the indigenous ancestral religious order by asking a sister's son to make sacrifices in the convert's name. Because the Mossi recognize a variety of supernatural forces and the efficacy of other religious systems, accepting Islam does not require the total rejection of traditional belief. Finally, for Mossi migrants abroad, Islam provides a common denominator, a source of social security and religious identity outside the traditional and local kinship network.

Hammond summarizes:

> [Traditional religion] could presumably continue to function well, but the result of contact beyond their own frontiers is leading the Mossi to economic opportunities which weaken the authority of the elders by providing young people with alternative sources of economic satisfaction based on a more individually oriented pattern of economic endeavor. Islamization provides a rationalization for defection from the traditional kinship structure and its system of rights and obligations. In addition, it can provide...freedom from traditional economic responsibilities...(and) a lucrative alternative source of economic and social status.(p. 184)

The acceptance of Islam in this community, in combination with traditional Mossi practices, appears to favor men over women. Mossi women traditionally have been entitled to their own land and its products. Islam also mandates separate gender roles for men and women, but in these, women are the designated guardians of the home, while men control the public, commercial sphere. In Mene all but one woman I interviewed called themselves Muslim, but they all had also maintained their traditional economic activities in the public sphere. Mossi women, however, are restricted to economic endeavors that do not interfere with their domestic obligations. The generation of cash is important to Mossi women, but in keeping with Islamic tenets, cannot be pursued at the expense of responsibilities to their families. This is an important socio-economic consequence of Islam in the area.

Dankui

Dankui is a small village of about 500 located in the Sudan zone in western Burkina. With ample rainfall (600-1000 mm), varied soils, and groundwater resources (C. McCorkle, personal communication, August 11, 1984), this area is the grain surplus region. Three ethnic groups make up more than ninety percent of the total population: the Bwa, Mossi, and Fulani. The Bwa, the indigenous and predominant group, control the land, although granting access to Mossi and Fulani is only a matter of formality. The latter groups maintain their rights with yearly ritual offerings to the Bwa chief of the land (C. McCorkle, personal communications, August 11, 1984).

The Mossi and Fulani reflect internal migration patterns, movements west from the Mossi plateau and southwest from the Sahel. Migrants from the Mossi plateau have been in the area for about fifteen years. The Fulani, typically a nomadic ethnic group, began settling here in the 1970s.

Women's activities, status, and food-related patterns among the three ethnic groups of Dankui are compared here. Particular attention is given to the impact of women's economic assets on traditional food distribution practices. This section also illustrates the weaknesses of the housework classification in studies of women's work in the Third World, as well as comparing reproductive and productive activities. Women's involvement in cash cropping is also noted and further research suggested.

The following cases are included: 1) wives from two Bwa households present different attitudes toward women's roles; 2) a composite picture of Fulani women's activities represents what is known as "reproduction"; 3) a Mossi migrant describes food consumption practices when her husband is absent; and 4) poor and wealthy Mossi men present their attitudes toward women's roles and their opinions about women's contribution to family farming or financial stability. In these cases, women's opinions reflect the impact on economic autonomy of inequitable access to resources.

Bwa Dependent and Independent Women Unlike Mossi men, who are obligated by Islamic duty to provide land for their wives to use for cultivation, consumption, and sale, the Bwa do not give land to their wives. Bwa women simply look for land near their husband's fields and farm it. Because their husbands do not freely give them money, women usually plant condiments for sauces so they do not need to be purchased (I. Traore, personal communication, August 28, 1984). Unlike the Mossi, Bwa women may enter their husband's granaries. The wives do, however, ask their husband for grain because "he's the chief;" they must also report how much they have used.

Although male dominance in decision-making is traditional among the Bwa and fear of their husbands is attributed to Bwa women (I. Traore, personal communication, August 28, 1984), this pattern is not universal in Dankui. It was interesting to attempt to account for differences. In B. Ouro's traditional family, the husband is strong. His women do everything for him, and are threatened by him and his authority (I. Traore, personal communication, August 28, 1984). The women were very reluctant to discuss their activities, perhaps fearing the children would report their answers to Ouro.

The women do not have their own fields, so they cultivate their husband's cotton and grain. The family does not sell their cereal but must purchase some from a local market or OFNACER, the government-run grain distribution office. Ouro owns animals; his wives do not. Both of Ouro's wives have money-making activities, however. T. Mousanhan makes dolo, a dark and pungent sorghum beer, once or twice a week, at about $1.25 profit per batch. She makes the brew year round but during the dry season, when sorghum is more expensive, her profit on the unchanging price per calabash diminishes. She buys the grain on credit because her husband does not want to give her money for dolo brewing. This makes her financial status precarious. She also sells potash for sauce in Dankui and a nearby village, but only during the dry season, and only when she is not brewing dolo. The second wife, S. Siwemawe, also brews dolo. In the past she has sold potash, but this year she has been cultivating a portion of her husband's tobacco fields, and work has been particularly demanding. Her husband pays Tene about $1.20 to take the tobacco to market, or about ten percent of the total profit on a $12 bag.

A contrast comes from the household of T. Biobo, who offered no resistance while we were there and appeared delighted that we were more interested in talking with his wives than with him. His parting words were, "Good, now I can get back to work." Both wives, B. Bierroma and N. Tene, have their own tobacco fields and sell their harvest in Dankui or a nearby village. One wife makes about $12 a harvest, the other about $16, depending on the quality of the leaves and the demand. Both use their profits to purchase cloth and plates. Bierroma sells grain or bean cakes in the village, and occasionally sells dolo from her home. She purchases the sorghum and sells the brew all in one day for a profit of about $1.50.

In addition to grain, the husband cultivates cotton. The wives commented that he was "supposed to put the money back into the family," implying he did not, but without clarifying where it went. This situation, where the husband maintains control over profit from cash crops, has been documented elsewhere (Boserup, 1980b). N. Tene remarked, "Women should have some economic independence or they will suffer." These two women have reported to CRED that their work was housework, although they maintain their independent sources of income. In ironic contrast, however, Ouro's wives identify their activities as fieldwork and dolo brewing although they have little freedom in amassing an independent income.

Fulani "Reproducers" Both Fulani compounds we visited revealed remarkably similar economic and consumption patterns, and will be discussed together here. Unlike the Mossi, Fulani women are not restricted when it comes to using their husband's grain, except by availability. As one man said, "After I put it in the granary I never look at it again." Older women in particular make decisions about what and how much grain to use or buy, and often are in charge of meal preparation.

Similarly, the women cultivate fields for neither themselves nor their husbands, who are responsible for meeting family food needs. B. Mahamoudou, chief of his compound, explained his people's customs. "If you see a Fulani woman cultivating, her husband is Mossi." It's against traditional law for a Fulani women to raise a daba (hoe), whether for weeding or for working alongside her husband in the fields. A kitchen garden is acceptable, however. One woman, for instance, cultivates her kitchen garden on a portion of her husband's land and uses the produce for family consumption, not for sale. Younger women, who are responsible for meal preparation, usually maintain kitchen gardens. As women increase in age and status, however, moving into middle age, their garden maintenance dimishes along with their meal responsibilities. It is a sign of status and respectability for women to dispense with such obligations.

Women's money-making strategies are intermittent and render only pennies of profit, if pursued at all. During the dry season the women weave grass mats that are primarily for the family's use. Occasionally, colorfully woven platters are sold. One woman sometimes plaits hair for a little money. Perhaps the most profitable activity is selling milk, an efficient complement to the mens' herding. Mahamoudou's daughter-in-law, T. Alarba, milks several times a week during the rainy season, bringing in a few pennies for each louche (gourd container) she sells. In good years milk can be traded for grain but in years of drought like this one, people prefer to pay cash for milk (C. McCorkle, personal communication, August 11, 1984). This practice is not as profitable for the Fulani as exchange for grain. Furthermore, cash purchases of grain, which are conducted in markets, are made by men and take some control out of women's hands. This means that the profit does not necessarily reach the family, as is the rule when women reap a profit. Fulani men benefit from women's profits because women perceive their money as belonging to their families, while Fulani men are not necessarily as equitable in their distribution of funds. For example, in one household a woman used money from milk sales to buy cola nuts and condiments. She remarked that although the money does not go directly to her husband, he still reaps the profits by consuming the purchases.

Mossi Immigrants G. Amidou, his wife Bibata, and his family migrated to Dankui about ten years ago, after leaving their birthplace in the northern part of the country and living for several years in the Ivory Coast. The family's land was given by the Bwa chief of the land for a request, 1000 francs, and a chicken. The family gives the Bwa chief a yearly gift of two tines of grain (16.2 kg or 18 kg with the traditional "heap") to maintain their rights and good standing. Recent poor harvests have made this gift difficult for some families to release from their meager storage, creating bitterness and confusion in the traditional system (C. McCorkle, personal communication, August 11, 1984).

The family maintains a residence in Ouarkoye, a nearby village larger than Dankui, but spends most of the rainy season in the bush near Dankui. This pattern is common among the Mossi who have settled here. Once a Mossi has received land he may give some of it to his wives. Bibata's land is near the house, allowing her to remain close to home. There she cultivates peanuts, okra, and beans for both consumption and the next year's planting. Like her husband, she is Muslim, and identifies her domestic work as her primary role.

Bibata works in her husband's cotton fields and spends some of the money he gives her for clothes for the children, cloth, and other small items. Although she sells prepared cakes, grain sales are more profitable. To reduce costs she sends her children by bicycle to purchase grain at a distant market and resells it for a $5 profit. She also sells collected or purchased karite nuts in season for about 1500 francs per 50 kilogram bag or for a total profit of about $12. Bibata

remarked that she gets not only money but pleasure out of these activities because her time is occupied in the evening. She would like another wife to join the household to help with the heavy work load and make life more interesting.

After the harvest, Amidou visits relatives in the Ivory Coast for a month. I was curious about how the family handled the Mossi rule forbidding a wife to enter her husband's granary in his absence. During Amidou's leave Bibata sends her children into the granary in Dankui. In Ouarkoye, however, she has free access to a bag of purchased grain her husband has left to last until his return. This presents more evidence of family adaptation to changing economic circumstances, even when it means modifying long-accepted traditions about food distribution. In addition, that bag of grain is likely to have been purchased from OFNACER at the cheapest time of the year. In addition to its costing less, it is also less strictly connected with customary prescriptions about granary storage and access.

Mossi Gentry The chief of the Mossi quarter, N. Seydou, provided a contemporary interpretation of the centuries-old tradition enforcing male control over access to the granary and the attendant penalty of illness or death for women who disobey. Seydou said, "The wife will run away if she sees (how little) is there!" Clearly, men are dependent on their wives for virtually every aspect of agricultural subsistence production, food preparation, and now assistance with cash cropping. They cannot afford to lose their wives.

Seydou's first wife, B. Bibata, is timid, quiet, and defers to her husband. Nevertheless, she controls her own assets in several ways. Bibata has her own fields of millet, corn, peanuts, and beans, all of which she cultivates for family consumption. She has her own granary as well, which she can stock with her own or purchased beans and grain. When her stock is depleted (about three to four months after the harvest) she goes to her husband and follows the traditional pattern of requesting grain. In his absence she relies on a child to secure the grain from her husband's granary. When her husband has no more grain to lend Bibata, she sells one of her own animals to buy cereal. Children cart the animals to a nearby market then buy the needed grain with profit from the sale.

B. Bibata has land, animals, and money. She carefully maintains an independent food supply. She can rely on her own means to feed her family rather than counting on her husband for what he may not be able to provide. He too admits that this is the case. Her economic independence is beneficial for the family, rather than threatening to family ties. As long as Bibata and her children can rely on her means, family stability can be preserved. If such a delicate balance between people and resources were shifted, the family would be forced to consider new alternatives, such as male migration.

Mossi Lower Class For P. Bourema the custom of keeping women out of the granary has become not just something to joke about, as it was for N. Sedou, but an unrealistic pretense. Bourema, a Mossi, has two wives and fourteen other family members. They were one of the poorest and least healthy families in this study. Although the wives are supposed to ask their husband for grain, they often just helped themselves to it. Both wives have individual fields of grains and legumes. The produce is sufficient to feed the family for only three months, and is certainly not enough to sell. Last year the family purchased fourteen 100 kilogram sacks at one time. This lasted for the remainder of the year. Thus, having their own grain gives women greater power relative to their husband in times of scarcity. Collective purchases of grain diminish some of the traditional boundaries separating one person's grain from another's.

Individual and family money-making strategies are limited. The chief grows cotton and sells it for an agreed-upon amount to the government-subsidized textile manufacturing company, as he has for fourteen years. His wives spin the leftover cotton into thread and he weaves it into cloth, which is only occasionally sold to neighbors. Practically every family spins, weaves, and sells at the same price, so demand is low.

Summary - Dankui The situation in Dankui offered the opportunity to clarify some important points about women's work, including differences between production and reproduction and changes in women's work in response to changes in the economy. Changes in women's roles have a potentially powerful affect on family life, and this situation has been met with mixed results.

Although feminist materialist theory proposes that the emergence of the "housewife" is associated with male domination and women's confinement to the home, in Dankui the term "housework", if used to label an individual's primary productive activity, does not accurately represent women's work, and provides no measure of the meaning the work implies to the women who use it. Bwa and Mossi women who say their primary productive activity is housework are in fact involved in a variety of money-making activities. Relative to the Bwa and Mossi, however, Fulani women are much less active in production, have little economic independence, and might more accurately be called housewives. Their activities can best be described as reproductive in the sense that they feed back into household and family maintenance, yet they confine women to particular roles and duties within the household and limit their economic freedom.

If anything, it appears that women's roles in the economy are becoming diversified. More important, it dictates that transformations in traditional roles are taking place. Because of population pressure, male out-migration, and poor harvests, women, who are responsible for feeding their children, have an increasingly important role in household food production and distribution. They

must combine traditional and preferred farming with income-generation strategies. B. Bibata, wife of the Mossi chief, represents this subtle shift in women's place in the economy. She harvests her own grain and sells animals to buy her own bags of grain as she needs it, over which she maintains control. Her access to resources gives Bibata greater control over decisions that affect her life and money and her children's lives, including their health. It is also noteworthy that her husband pokes fun at the Mossi tradition limiting women's access to grain, recognizing the importance of Bibata's contribution to the household. By doing so, he is expressing support for her autonomy.

A second change is a new balance of power between husbands and wives that may be emerging as a result of cash cropping. Women's work is becoming increasingly vital. Soon they may be negotiating the terms by which they will contribute their labor. Alternatively, they may be giving up their own subsistence production and relying even more on their husbands' generosity in providing grain or cash. Changes in husband-wife decision-making strategies as the result of the introduction of cash crops has been observed in rice paddies in Cameroon (Jones, 1983). This subject bears further investigation among the Mossi in Burkina, who have adopted cash cropping, particularly of cotton, and are thus entwined in the textile industry's wholehearted campaign to produce cotton for export and domestic manufacturing. In particular, the influence of cash cropping on women's access to grain for consumption and sale should be considered.

An additional and somewhat less optimistic observation about the impact of socioeconomic change on family life can be made. Traditionally, marriages are arranged among similar groups with common family interests. The woman moves to her husband's family's home; as long as he is a villager from Dankui or a nearby village, family ties can remain fairly secure and family obligations can be maintained. Most villagers who were asked about plans for their daughters' futures said they prefer for their daughters to marry farmers rather than merchants or other more urbanized males. A merchant, who travels and perhaps lives in a town or city, would be more likely to threaten traditional family ties by taking a daughter away to a strange and distant urban setting. In addition, the merchant is removed from the land, the very source of traditional roles and spiritual life. Bourema, however, in his poverty-striken household said, "Whoever comes first is okay to marry, a farmer or a merchant." Perhaps traditional cultural patterns have become economic liabilities for his family, and the most pressing concern has become that the women marry so he can be free of the responsibility for their care. After marriage Bourema's daughter would continue to cultivate her crops. Like other villagers, Bourema could see his daughter working in the fields, planting, weeding, harvesting, collecting water and fuel, assisting with cash crops, and selling a few goods for money for condiments. Because women do all this work, it is in any male's best interest for women to continue in this traditional role, particularly as the men assume greater profit-making activities like cash cropping and have increasingly less time for subsistence farming. With few resources at his disposal Bourema, like N. Seydou, recognizes a wife's contribution to production. Unlike Bibata, however,

Bourema's wives and daughters have few resources of their own. Thus they have little chance of establishing their own econmic autonomy.

Bare

Bare, a village of 1000 in southwest Burkina is about twenty-five kilometers from Bobo-Djioulassou. Traveling from Bobo, about half the trip is made on a paved road running from Bobo toward Ouagadougou (see Maps). Small commercial traders must travel through Bare to reach an established market nearby. In the last year Bare has begun its own market and traders now reach the village on a regular, planned basis.

The Bobo-Dkoula and Bobo-Fing, both part of the more general Bobo ethnic group, predominate. Some Fulani live in the area on a more or less permanent basis. Bare is home to a surprising proportion of war veterans who fought with the French. They have returned not only with knowlege of and ties with the West, but with military service pensions, which have a significant effect on the local economy.

This interchange between Bare and contemporary urban life and trade gives the village a unique character. Villagers with the means have the opportunity to engage in their own commerce in Bobo or to sell goods in Bare. It is the effect of this rural-urban exchange that is the focus of discussion. The cases provide a contrast between traditional and urban life: 1) two businesswomen have extraordinary resources in Bare and urban Bobo (one in particular illustrates the powerful impact of assets on household decision-making); 2) a young dolo brewer reflects enduring traditions; 3) a widow and subsistence farmer with little or no independent income depends almost completely on her son; and 4) three wives combine traditional farming and occasional sales of agricultural produce.

Small Businesswomen The first two women described have their own businesses, with transactions taking place in Bobo and Bare. These women reflect the contemporary, urban influence on village life. K. Bintou is the fourth and oldest (age fifty-five) wife of S. Dramane. Although all Sanou's wives are economically active, Bintou is the most enterprising. She has a history of small trade in Bobo, where she sold beans and baobab leaves, produce, and Maggi boullion for sauce before she moved to Bare after her first husband's death. She has continued these sales in Bare, but has added bottled beer and soda, which are more profitable items. In addition, Bintou prepares and sells peanut butter balls for sauce and other condiments when they are available. Bintou buys beer and soda once a week from a truck that travels the route from Bobo. She sells about five cases a week at 350 CFAs profit per case, or about $4 profit per week. At a penny a piece, peanut balls are not a big money-maker, yet only two or three women sell this staple ingredient for sauces and it may be a quick way to bring in some additional change.

Bintou travels to Bobo two to three times a week to purchase the produce she sells in Bare. Undoubtedly Bintou knows what her profit is, but she seemed inhibited by her son's unexpected presence during the interview. She declined to discuss any other details of her money-making activities after his arrival. Clearly there is a demand for her wares, however, as several villagers made purchases from Bintou's home during one interview.

K. Doussou is one of Bintou's competitors. The wife of a sedentary Fulani, who is a successful farmer and a war veteran, Doussou was unlike any other women I met, in Bare or elsewhere. With 250 cattle of her own, she possesses the most highly valuable assets available. Livestock is a short-term money-maker and long-term investment. Milk can be sold on a regular basis; if crops fail or extra money is needed, the animals themselves bring a sizeable cash return. Doussou employs three men for milking, then sends the milk to Bobo, where her sister sells it for 125 CFAs per calabash. Occassionally, the bulls are sold when they are sick, or they are used for food. Doussou also has the only working grain mill in Bare. The other two, which are broken, are owned by men. She has had the mill for about five years and has seen that business grow. Village women grind grain for 35, 40, or 50 CFA per container, bringing Doussou about 3500 CFA or $7-$8 per day year round.

The last five years Doussou has had a grain magazine, which allows her to buy grain immediately after the harvest when it is cheapest, store it, and resell it at a profit throughout the year. She buys up to five sacks of red and white sorghum and millet, which she sells in September, October, and November. After that she buys smaller amounts of grain, about 1000 CFAs worth at a time, and resells it for 1500. This is also stored in grain sacks in the magazine. Doussou also owns a magazine in Bobo. The family's consumption patterns were unusual; Doussou is completely in charge. She chooses from bags of grain from her husband's fields that have been stored in the magazine. Doussou then gives the grain to a resident in their home who prepares the meals, a wife of one of the guardians of the cattle. Because Doussou prefers corn meal to other types of grains, that is the grain most often consumed.

Several nonrelatives live with Doussou and Salif, who have no children of their own. These people tend the couple's animals, and draw some salary. There is also a young woman who prepares meals and does not receive a salary. With many villagers related by generations of marriages among kin, these residents may be considered part of the family. The young woman's contribution to domestic chores may be considered as payment for lodging, while the men's income-generating work with the animals may require financial compensation.

Doussou's household is an interesting blend of old and new. Although she is Bobo, her husband is Fulani. Like Fulani women who do not cultivate, Doussou limits her cultivation to gardens near the house, and her family's livelihood is based on livestock. Although Doussou's freedom may come from her mixed ethnic and religious status, it is her money that gives her power. Doussou has her own small business, one that could be considered more formal than informal, more consistent than intermittent, and shaped by careful decisions rather than the needs of the season. She has free access to grain and is responsible for decisions involving its use; she invests and reinvests her money into various income-generating activities.

Dolo Brewer A traditional and important part of village life is dolo drinking, which is typically done at a dolo brewer's home as a social event. Most people drink the thick, pungent brew, and each neighborhood has its own brewers. S. Koliya is a dolo brewer. She purchases red sorghum from local produce sales in small amounts at a time because it is too expensive for her to buy in full bags. Each batch of brew requires four measures of grain. These batches are made each month, so altogether Koliya uses twelve measures, or about two bags of sorghum. Like other brewers, Koliya sells the dolo by calabash, which is priced according to size and the price of grain. There is, however, little variation in price; each dolo brewer charges the same amount. Koliya was reluctant to reveal her exact profit, but said she spends it on cloth and spices.

As the youngest wife and a new mother, Koliya is responsible for preparing daily meals for her husband. She steadfastly insisted that because she is forbidden to see her husband's granary, she must ask him for the grain for his meals. When the husband is absent, he appoints a young child to go into the granary, where the child crawls in through the small opening at the top. Koliya asked a young girl to demonstrate this process, and it became apparent that physical reality as well as custom prevented her from retrieving the grain herself. The hole, which is at the top of the granary to minimize access by scavengers, is an unseemly entrance for wives and mothers.

Farmers Unlike Koliya, who has a baby at home, sixty-four year old Serewouro works in the fields every day. Although she has brewed dolo in the past, because of a shortage of grain she has not done so this year. She reports that people are buying the grain along the road before it gets to Bare. There is little left by the time it gets to town. She has no time to go look for it. Serewouro is also a recent widow, however, and an expensive funeral has probably depleted her financial resources. It is common for funerals to go on for weeks, with the family entertaining the entire village.

Serewouro reported no additional money-making activities. While we were there, however, she spread a cloth with handfuls of peanuts, which she sold for five CFA to children who stopped by. They were probably taking the nuts to their mothers for the upcoming noon meal. This illustrates an additional observation about measuring women's work. Activities that are intricately connected with subsistence production may not be considered "economic activities" in women's minds, nor in the eyes of the community. This was clearly the case with Serewouro's peanut sales. That these activities are productive as well as domestic or reproductive has been recognized (Lewis, 1984), but if women themselves are unaware of the meaning of the question, such information may be lost. This may be further complicated when the profit is returned to the head of household; in this case Serewouro gives the money to her son Ardjuma, who has assumed family responsibility since his father's death.

Dafra, Sin, and Soukab, the wives of S. Sopossira, are farmers. Each has a field of peanuts for consumption, not sale. Although they worry about this year's lack of rain, they have been able to hold over a reserve from last year's harvest. In the past these women have sold karite nuts in the market but this has been a poor year and not many nuts have been available. Each wife does make regular trips to the market to sell spices and leaves for sauces. One trip nets 300 to 400 CFAs, less than one dollar.

Both this family and Serewouro's represent the traditional economic exchanges between men and women, whether husbands and wives or mothers and sons. Sopossira's wives are financially dependent on him and return a substantial amount of farm labor for grain and other necessary support. Following her husband's death, Serewouro's son Ardjuma became head of the household; he is responsible for his mother and has final decision-making authority in the family. Serewouro's labor and occasional income from peanut sales go directly to Ardjuma.

Summary - Bare Bare's unique location influences its social fabric and the activities of women who live and work there. A curious cultural melange - of bottled beer and homemade dolo, hand weeding and machine milling, French and Djoula languages, and radios and drums - exists in Bare. The relative richness of the land provides natural resources that do not exist in Mene, and the wealth of some villagers has provided financial, mechanical, and commercial resources not available in Mene or Dankui.

In Bare the Groupement Villageous, which is an innovative government-sponsored community farmer's group, takes on various projects that villagers agree to support, including buying and selling local grain. This is an enterprise the government is eager to promote in this region because it is a potential source of grain and produce for other parts of the country. It is to the government's benefit to identify and develop women's participation in village groups like the GV. As with the group in Mene, women are important to a group's success, particularly as the work involved in many activities is organized along the traditional division of labor. In addition, excluding women from village groups deprives them of important resources that could give them greater economic freedom and productive capacities. Separate groups of women, however, as long as they are awarded equal input from expert financial contribution, would probably allow women the maximum freedom and control over their own resources.

Conclusion

This study has focused on women's productive activities in three regions and among several ethnic groups in Burkina Faso. Of particular concern has been the linkage between economic activities and family food consumption in each region, as well as the strategies through which families coped with their economic situations.

The Mossi Plateau, where Mene is located, is generally known as the grain deficit area with a serious imbalance between food productivity and availability, both of which are insufficient for its population. Because of the desperation of Mene's situation, out-migration is a common strategy through which people attempt to increase their access to limited resources.

The surplus region, the Volta Noire district where Dankui is located, is said to produce more grain than it needs. Consequently the government grain redistribution program is based in part on the assumption that if food can be moved from grain surplus to deficit areas the population's food needs could be better met. Although the area is lush, the gradual effects of desertification and inmigration are being felt. Like villagers in Mene, those in Dankui are hungry and fear a poor harvest. Some have admitted that they have, for the first time, eaten the seed stored for the next planting. As one strategy for dealing with their circumstances, families in Dankui appear to be accepting cotton cultivation as a means to produce income to purchase grain.

The southwestern part of the country, where Bare is located, is agriculturally diverse and productive. Some villagers market goods in nearby Bobo. Others are involved in the Groupment Villageouis and pool their resources for financial security. The norm, however, appears to be a concentration by farmers on continuing to produce enough to meet their own food needs.

The obvious difference among ethnic groups was religious. The Mossi have embraced Islam, while most other ethnic groups continue to practice animism. In Mene and Dankui, which are almost entirely Mossi, Islam may provide needed relief from traditions that have limited Mossi movement, income generation, and food consumption practices. Under Islam the Mossi have enjoyed greater freedom to participate in local city and plantation economies.

Islamic philosophy also complements traditional attitudes toward women's roles and potential contribution to family food supplies. Interviews with women about their independent economic activities have indicated that women are producers as well as reproducers. They are involved in a range of activities, from farming and selling snacks to raising a large herd of livestock and maintaining independent businesses. Their activities provide the cash income that guarantees them economic independence from their husbands and autonomy in the household. In addition, it allows them a degree of control over decisions about food consumption.

Two women who have been discussed, Doussou and Serewouro, represent the extreme ends of this continuum; an "average" woman in Burkina can be drawn as a composite of the trends that emerged across interviews. Doussou has (a) property in the form of a mill in Bare and grain magazines in Bobo and Bare; (b) long-term investments in livestock; and (c) a regular means of earning an income from her retail sales of produce, grain, condiments, and milk. The fact that she employs several people is a sign of her financial success. Doussou controls decisions regarding grain consumption, although again she leaves the actual labor to another woman living in the household. In contrast, Serewouro, also from Bare, is first and foremost a farmer. She does not even really consider her occasional peanut sales to be a money-making activity. Any income she does have is handed over to her son Ardjuma, who, in place of his deceased father, makes the household decisions. Serewouro relies completely on Ardjuma for grain, much of which he purchases in the market.

While Doussou and Serewouro fall at opposite extreme ends of the continuum of economic autonomy and control, the "average" is a woman who is more representative of most women in Burkina. Based on the cases presented, a typical woman has her own fields of okra or peanuts; occasionally she has her own grain. She concentrates on cultivating her husband's fields and from these efforts is entitled to a portion of his harvest. If she lives in a cotton-growing region she helps her husband with that cash crop. More likely she lives on the Mossi plateau and is concerned with survival. During the dry season she spins cotton, makes pottery or dolo, or plaits hair to bring in some extra money. During the rainy season she is likely to sell snacks. Sometimes she sells these goods door-to-door or, if she has enough, takes them to the local market. Her children often assist in the preparation or collection of items for sale and accompany her or sell for her while she continues her other responsibilities. They return the money to her at the end of the day.

The "average" woman is gradually becoming more aware of the importance of her sales as an independent, autonomous means of purchasing food for her children, particularly as the changing environment makes agricultural production unreliable and the family inevitably has to purchase grain. In the deficit areas or in poor families a woman's independent economic contribution already has been particularly beneficial to the family, as she often has provided the means to maintain the delicate balance between resources on the one hand and environmental and economic pressures on the other. In short, women's resources seemed to be an important factor in family decision-making about survival strategies.

Women who maintain their own fields appear to have greater economic power because they have some independent means of providing food for themselves and their children. However, environmental problems and economic fluctuations leave women whose only resource is land in a precarious position. Furthermore, as population pressure and commercial farming increase men's gain control over land, older women lose their land and young women are never given access to it. Women who are presently involved in cash cropping may already have been divested of

their land. At this time in Burkina, however, it is more likely that out of economic necessity women have found it necessary to shift more and more of their energy from cultivating their own land to helping their husbands with cash cropping. Again, if women lose their land or other independent means in the process, they become particularly vulnerable, relying on their husbands for support within the context of an unpredictable environment and economy.

The critical factor in establishing independence and an ability to care for children appears to be the ability to generate an income. Only fairly substantial incomes, however, are helpful. Pennies earned through sales of cakes, milk, pottery, dolo, or cloth, the most common strategies for women, are insufficient to provide economic independence. Such sales may make an "invaluable contribution to the household economy, (but) they hold little potential for increased economic autonomy among women. Quite to the contrary, home trades reflect women's increasing dependence on marginally employed men to make household ends meet" (Jules-Rossette, 1982, p. 8). On the other hand, sales of animals, grain, and commercial items such as bottled beer provide women with enough cash for the freedom to make independent decisions and give them more power in the family.

The impact of women's economic independence on food consumption is that when women have enough money to purchase grain they also control its consumption. When they do not need to ask for money to buy grain for their family, they have more control over its use. They also bypass their husband's decision-making authority because they do not have to ask whether they can take the grain from his granary.[2]

Women who have established some degree of economic independence and decision-making autonomy have recognized a shift from subsistence agriculture to a cash-based economy. Such income-generation is important to women's and children's welfare and to the entire family's stability. At the most effective and autonomous end of the continuum the woman becomes active in the larger economy outside her household and perhaps outside her village, often dealing with merchants in urban markets. At the other end, she is dependent on a marginally productive husband for financial support, and makes only pennies from her own petty trade. Doussou and Serewouro illustrate differences in integration into the larger economy. Although both have lived in Bobo, only Doussou maintains contacts and business there. She is integrated into the larger market economy, while Serewouro confines herself to her fields and village as she has done traditionally Serewouro has family and traditional expectations, while Doussou has recognized and predicted the consequences of current socio-economic changes. She controls her own role in those changes.

The difficult and frightening aspect of this social change for older women, for those whose husbands refuse to allow their wives some freedom, or for the women themselves who fear change, is that women are challenging traditions that have regulated their behavior and the relations between the sexes. Women with resources and control over them (i.e., Doussou and her business competitor Bintou in Bare; Bibata in Dankui; market women and the women's groups in Mene) were reluctant to discuss their endeavors in the presence of their husbands or older children. They suspected that these other family members would intrude in their affairs, which might result in their resources being usurped by the men.

At the same time, the women who were most controlled by their husbands (i.e., Ouro's wives in Dankui; the migrants's family in Mene; Serewouro in Bare) were reluctant to talk with me, perhaps feeling threatened by my independence.

Women's integration into the economy and their own economic independence depends upon variables like age, religion, husband's support, and access to resources. Doussou and Serewouro again provide an illustrative contrast. Both are from the same village and ethnic group. Their ages and religious beliefs, however, differ: Doussou is forty-four and Muslim; Serewouro is sixty-four and an animist. Age seems not to be an important factor in women's situations. Women of Serewouro's age, like Bintou, also compete with the younger Doussou in trade. Religion may be a more important determinant of socio-economic situation. Islam, along with a strong local tradition of women's involvement in marketing and animal care, allows Doussou greater freedom to pursue her business. Although Islam gives people greater economic freedom than animism and weakens traditions controlling men's exclusive access to grain, women still have less freedom than men simply because they are subject to men's control as head of the household.

More important than either age or religion may be husband's attitude toward women's roles and his financial support of her endeavors, as has been documented in research about women's work in the United States. In Burkina Faso the pivotal nature of husbands' support was apparent in several cases. In Mene the market women had started their businesses with their husbands' assistance; in Mene tacit, though reluctant, recognition given by the Iman to Fatimata, who made major financial contributions to the household with her animal sales; and in Dankui Niata Seydou's acceptance of the importance of his wife's resources relative to his questionable supply of grain.[3] A contrast to these instances of approval was in Dankui, where Ouro's disapproval of his wife's dolo brewing had a damaging affect on her financial stability.

Based on the results of this report the following model is suggested. The reader will note that age and other demographic factors such as family size and structure (e.g., how many children are present; whether there are other wives who share household tasks;) operate through: 1) religion; 2) husband's support; and 3) access to resources to affect economic autonomy and control over decisions on family food consumption. The ability to use resources to generate an income is the ultimate determinant of economic control and influence on household decisions, including the distribution and consumption of grain. This model is hypothetical, drawn from the results of the field work. Further research should clarify aspects of its structure and dynamics, particularly the impact of variability in demographic indicators on the intervening variables.

Factors in Women's Economic Autonomy

Recommendations

This work has policy implications for development planners working in the following areas: credit; cash cropping and land distribution reforms; agricultural extension; and grain distribution and consumption. Each of these areas are discussed here.

Women's independent activities, particularly in trade, are important and should be encouraged. Strategies enhancing economic resources, such a loans and credit for small businesses, should be developed. Currently, women with capital are the ones who can invest and reinvest in animals and other products for profit. Those without investment capital are at a disadvantage, while they may be more in need. For them, credit is an important resource. Tamini Mousanhan in Dankui, for instance, buys her sorghum on credit. Her husband will not loan her money for her business, so she cannot rely on his assistance. If credit were unavailable she would not be able to continue her business. The village women's group in Mene makes loans available to its members, enabling some women to purchase larger quantities of grain, small animals, or even staple goods that are otherwise unaffordable.

Cash cropping has already altered the traditional exchange of labor between men and women. The situation in Burkina should be explored further so that those who are promoting cash cropping can make informed decisions about land use, prices, labor, and food availability. One major reason families change their land to cash crops - such as cotton - is to make money to purchase food. The income they receive for cotton, however, must be quite sufficient to make up for the loss of subsistence crops. Thus the scramble for food and money catches them in a viscious cycle where their needs for each are inadequately met. In addition, men adopt cash crops while women remain responsible for feeding their children, leaving women even more dependent on men for cash to purchase food. With primary control over resources, however, men hold the primary decision-making power regarding the distribution of profits and subsequent purchases. Removing subsistence land from women, either for cash crops or for land reform schemes, has a potentially devastating effect on family productivity and the ability to meet food needs, depriving them of not only food crops but also an additional source of income.

Extension agents must recognize the power of community organizations, such as the Groupement Villageous and the neighborhood group in Mene, to make improvements in agriculture and conservation practices. The traditional division of labor that determines the types of activities carried out by men and women should be considered in planning certain activities (e.g., construction or planting). In addition, because groups of men and women are segregated, care should be taken to identify existing women's groups or to develop new ones that can specialize in important gender-specific productive activities.

The impact of women's economic autonomy on family food consumption, particularly during poor harvests times, is a neglected aspect of development projects, which limits work to narrowly defined grain production, consumption, and distribution projects. In this report work and food are part of a larger productive system, and women's access to money-making resources enhances their ability to feed their families. From this perspective women's activities are directly linked to individual and family welfare.

Based on these conclusions the following questions for further research are suggested:

1. Do women who own animals and/or small "businesses" from which they sell substantial amounts of grain or modern items (e.g., bottled beer) have greater independent access to grain?

2. How do women's independent means influence household decision-making processes, particularly with regard to grain use?

3. What impact has cash cropping had on women's farming, particularly use of her own land and time spent on her land and on collective land?

4. Do women in Burkina work for wages paid by their husbands or do they simply assist him? What is the impact of the arrangement on household decision-making?

5. What supports do women need, particularly those who have little access to land, credit, agricultural inputs, or animals?

Burkina, like other countries in the Sahel, challenges researchers and service providers to understand and intervene in the unique and difficult problems it faces. In particular, the ways in which people are able to secure money and food are vital to meeting basic human needs. These two activities, generating both food and money, are linked. One important issue that those involved in development projects face is understanding women's changing position in the economy, their role in the family's welfare, and their access to resources that enable them to meet these needs.

ENDNOTES

1. The informant in Bare was related to Serewouro and advised us to approach the subject of her husbands' death gingerly. Thus we were judicious in our questioning, particularly because she was already somewhat reluctant to talk with us.

2. They may also determine what type of grain is consumed, how much, and to whom it is given. Although a preference for feeding males has been suggested in some literature, the dynamics of that decisional process, such as variability in women's access to resources that enable her to generate enough food for all her children, have yet to be explored. Susan Kahn, formerly of Catholic Relief Services' Maternal and Infant Feeding Program in Burkina, also suggested that the greater dependence on cash and women's ability to purchase grain was changing traditional food distribution patterns.

3. There is no question in my mind that Seydou recognized the importance of his wife's contribution, particularly because he readily explained the practices limiting access to grain. He did not, however, want to reveal the extent of her importance to family security, and grew quite angry about questions regarding the details of her income, I suspect because he did not wish us to know the extent of his dependence on her.

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APPENDIX A

SURVEY QUESTIONNAIRE

Opening: What have you done today? or What are you doing right now?

Cultivation

What crops of your own do you cultivate? Is this your own land? How did you get it?

Do you sell what you grow? Is something made from what you grow?

If sold: During what season?
How often?
For what price?
In what quantity?
Where?
About how much profit do you make?
What do you do with the money you make?

Economic Activities

What (else) do you do to make money?

During what season?
How often?
For what price?
In what quantity?
Where?
About how much profit do you make?
What do you do with the money you make?
How long have you been doing this?

Consumption

What do you usually eat?

What do you prefer to eat?

How many times a day do you eat?

Who eats with whom?

Who decides what to prepare? Why?

Where does the grain come from?

Who prepares the food?

Do you have your own granary?

How long do your harvest and storage last?

Did you have to buy grain this past year? Where?

Other Questions (depending on location and situation)

Do you spin cotton into thread? What do you do with it?

If given to someone to weave, do you pay for the weaving?

If husband weaves, what does he do with the cloth?

If cloth is sold, for how much? How often? What is done with the money?

Where do you get the cotton?

Do you yourself have animals?

Do you buy or collect firewood?

Where?

If bought, how much (quantity)? How long does it last? How much did you pay?

Do you think your daughter will be a farmer? Do you want her to be a farmer?

Do you think women should have their own source of income?

APPENDIX B

INFORMANTS

Subjects by Household
Husband and Wife/Wives*

I. Mene

A. Farmers

1. P. Amade (chief of concession)
   B. Zoembo (wife)

   P. Boucare (brother of chief)
   P. Alizeta (wife)

   P. Tassere (brother of chief)
   P. Alizeta (wife)

B. Market Women

1. G. Ousame
2. N. Yarouna (brother of chief)
   Y. Salhiata (wife)

C. Islamic Housewife

1. N. Issa (chief)
2. G. Fatimata (wife)

D. Potter

1. K. Bouriema (chief)
2. Y. Mariam (wife)

E. Migrant's Family

1. P. Boucare/Raogo (son of chief/brother)
2. G. Minata (wife)

* Plural wives are only reported when they were interviewed.
(Family names have been abbreviated out of respect for the informants.)

II. Dankui

A. Bwa

1. B. Ouro (chief)
   T. Mousanhan (1st wife)
   S. Siwemawe (2nd wife)

2. T. Biobo (chief)
   B. Bierroma (1st wife)
   N. Tene (2nd wife)

B. Fulani

1. B. Mahamoudou (chief)
   B. Djougnoma (wife)

   B, Adou (chief's son)
   T. Alarba (wife)

2. T. Aruna (chief)
   T. Binta (wife)

C. Mossi

1. G. Amidou (chief)
   M. Bibata (wife)

2. N. Seydou (chief of quartier)
   B. Bibata (wife)

3. P. Bourema (chief)
   N. Azeto (1st wife)
   B. Djeneba (2nd wife)

III. Bare

A. Business Women

1. S. Dramane (chief)
   K. Bintou (4th wife)

2. S. Salif (chief)
   K. Doussou (wife)

B. Dolo Brewer

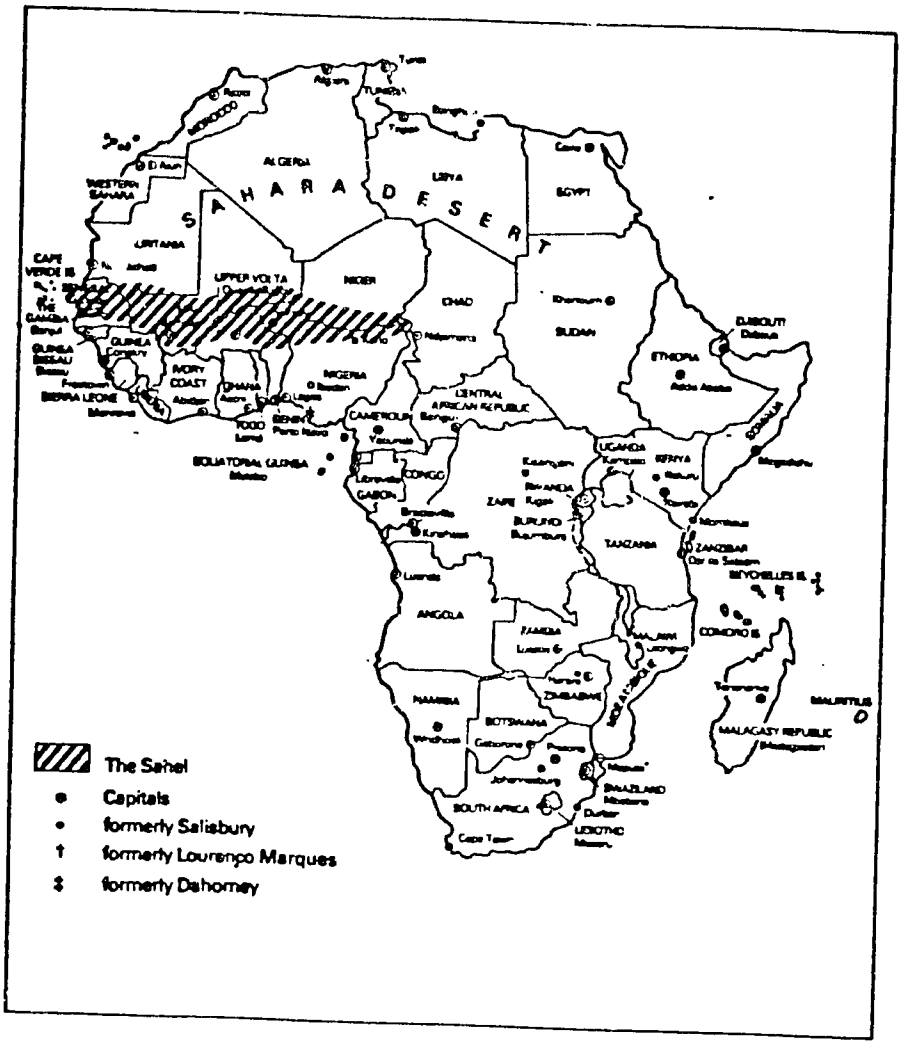
1. S. Bernard (chief)
   S. Marcel (chief's son)
   S. Koliya (son's wife)

C. Farmers

1. Ardjuma (chief)
   Serewouro (mother)

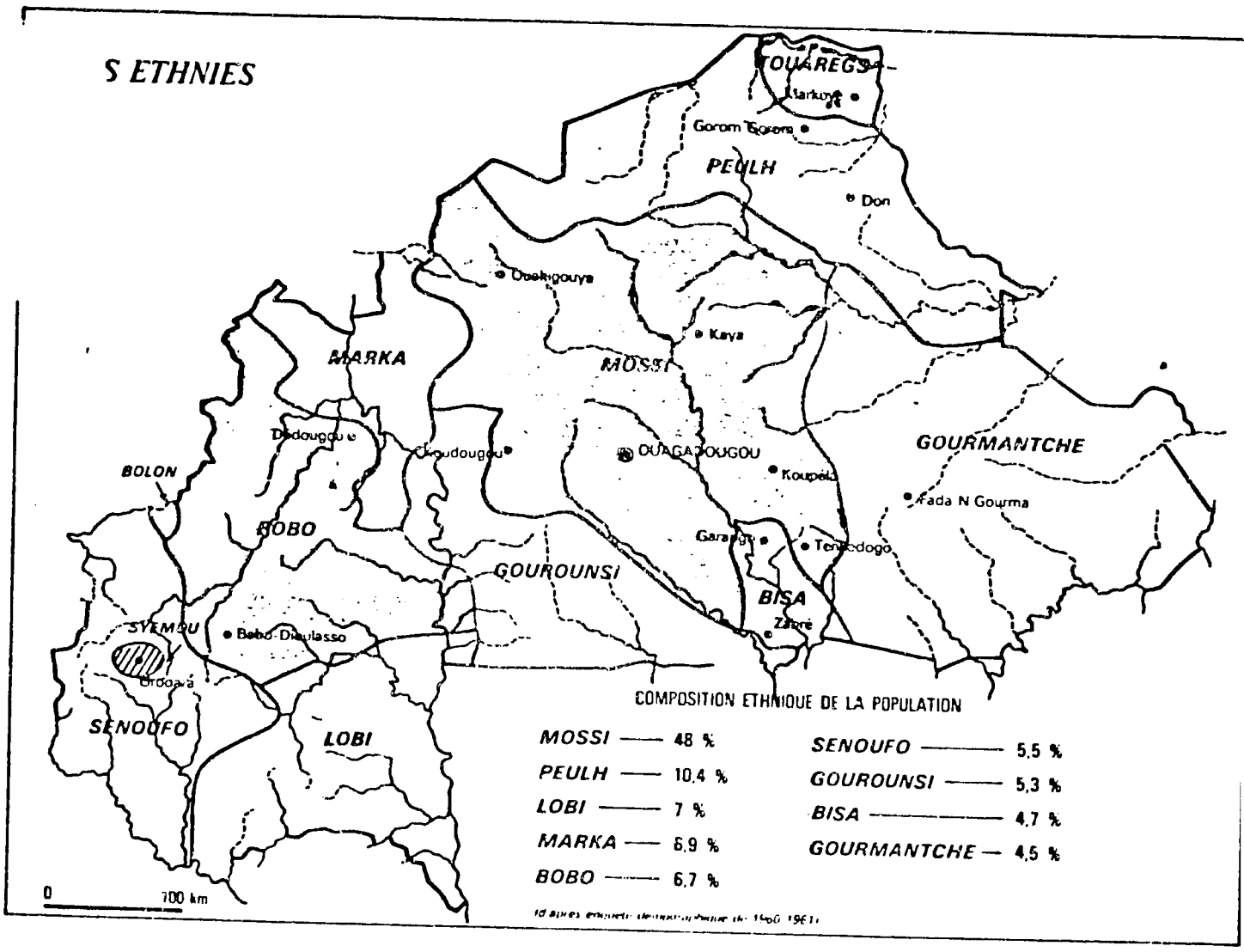
2. S. Sopossira (chief)
   S Dafra (1st wife)
   S. Sin (2nd wife)
   S. Sokab (3rd wife)

AFRICA



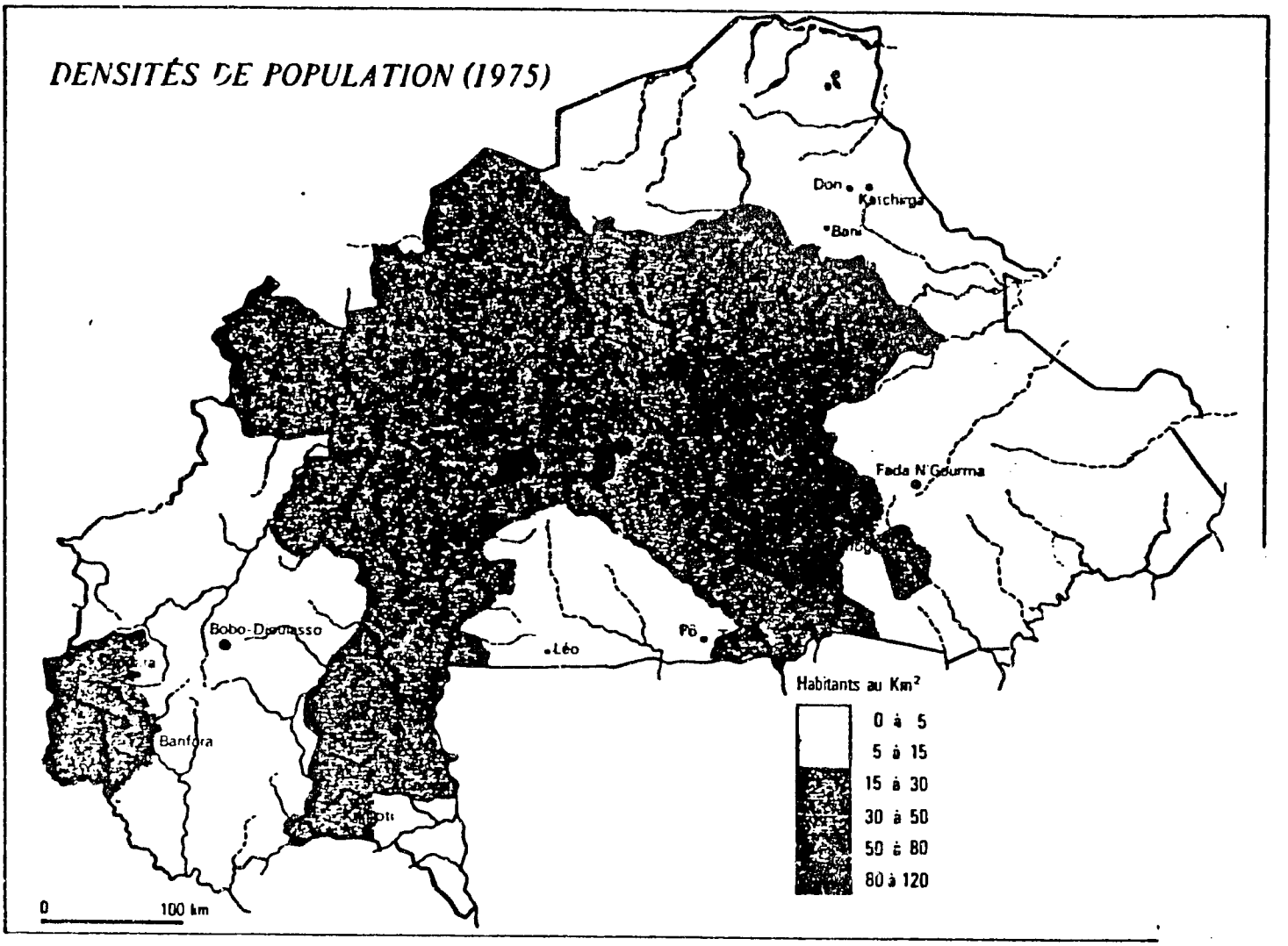
Contemporary Africa
Source: Africa Report Magazine, *publication of the African-American Institute, updated in Jan. 1980 by M. Wiley, Michigan State University.*

ETHNIC GROUPS



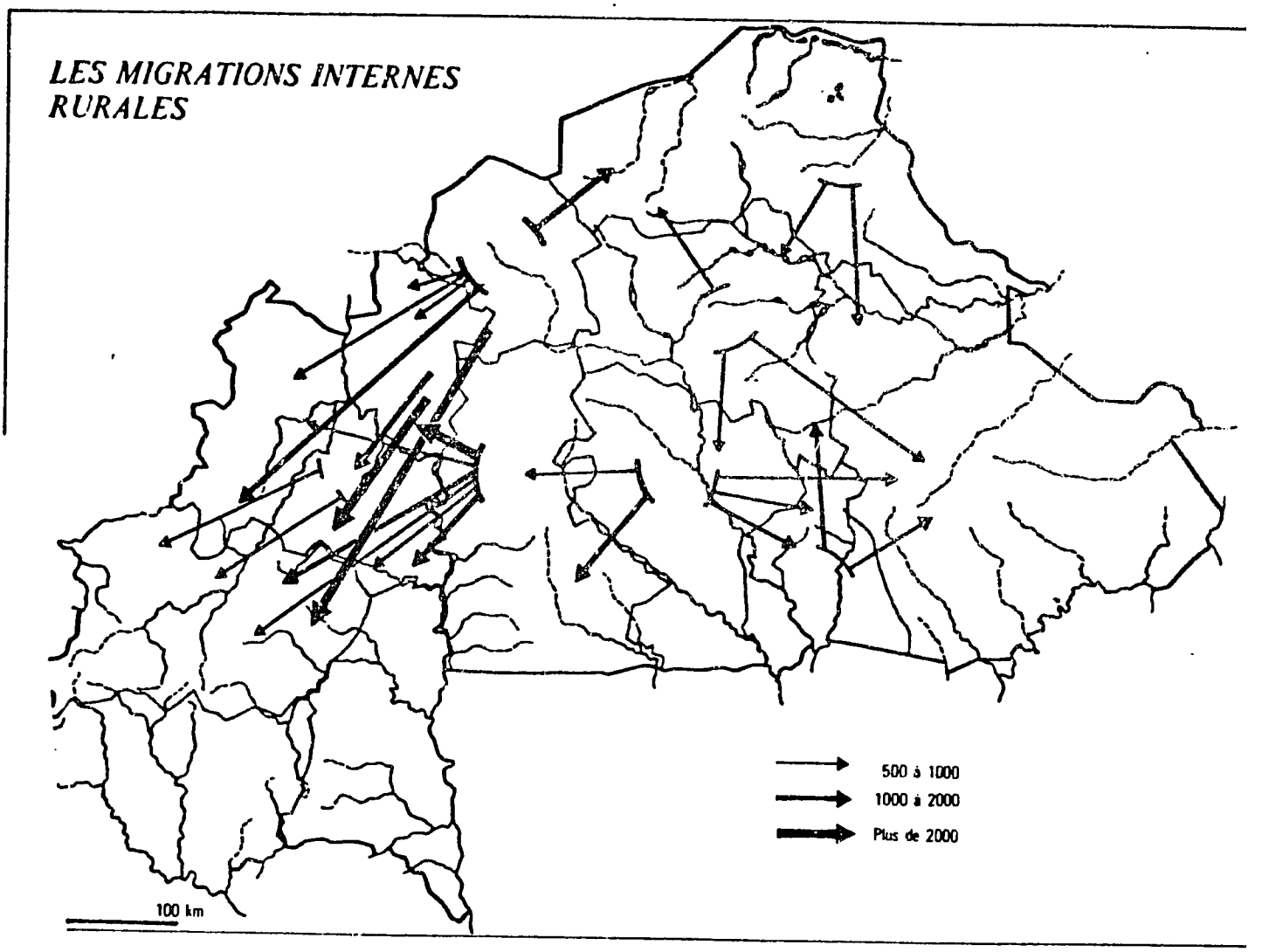
Source: Y. Peron & V Salacain, Atlas de la Haute-Volta. Paris: Editions Jeune Afrique, 1975.

POPULATION



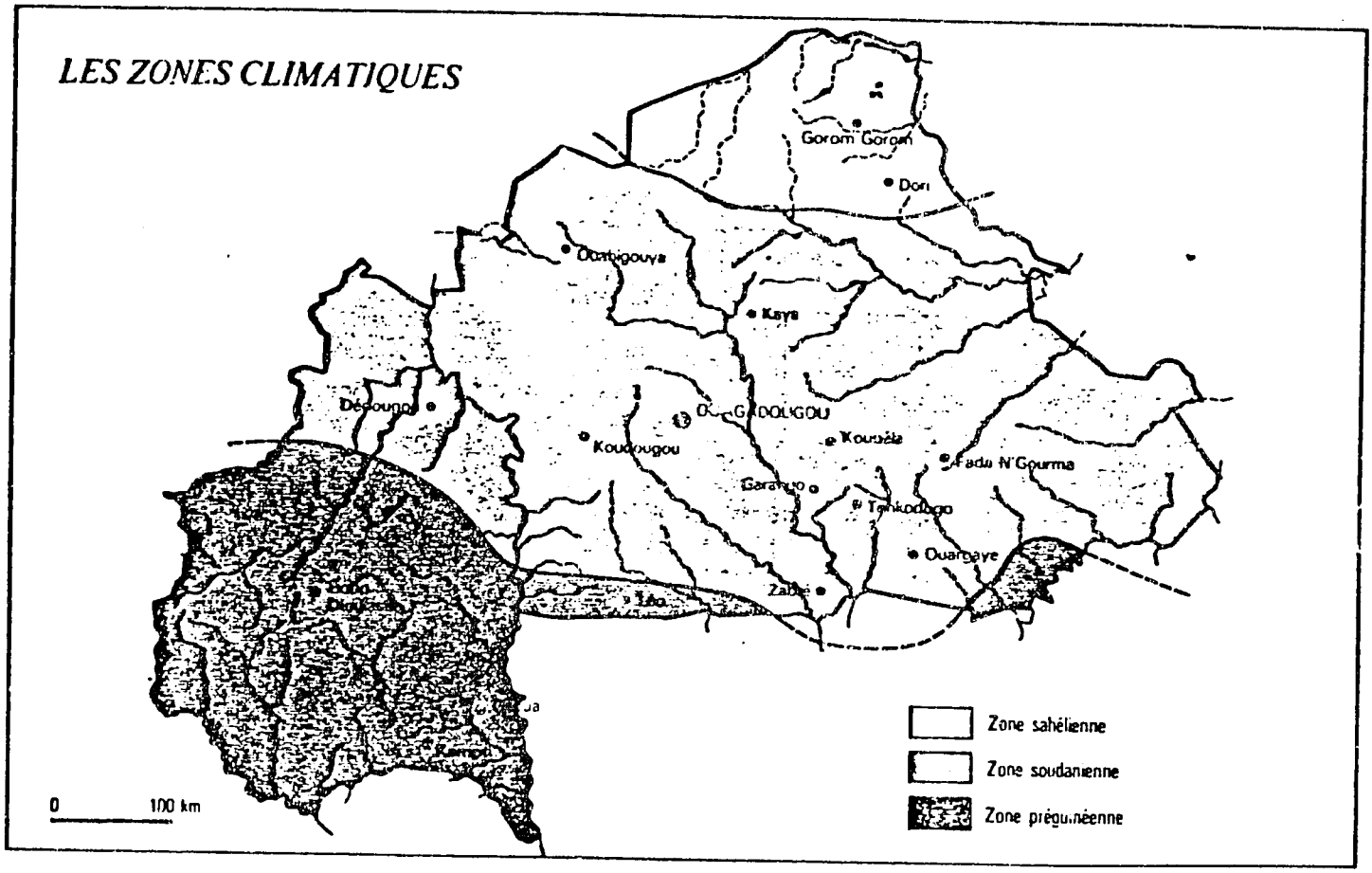
Source: Y. Peron & V Salacain, Atlas de la Haute-Volta. Paris: Editions Jeune Afrique, 1975.

RURAL MIGRATION



Source: Y. Peron & V Salacain, Atlas de la Haute-Volta. Paris: Editions Jeune Afrique, 1975.

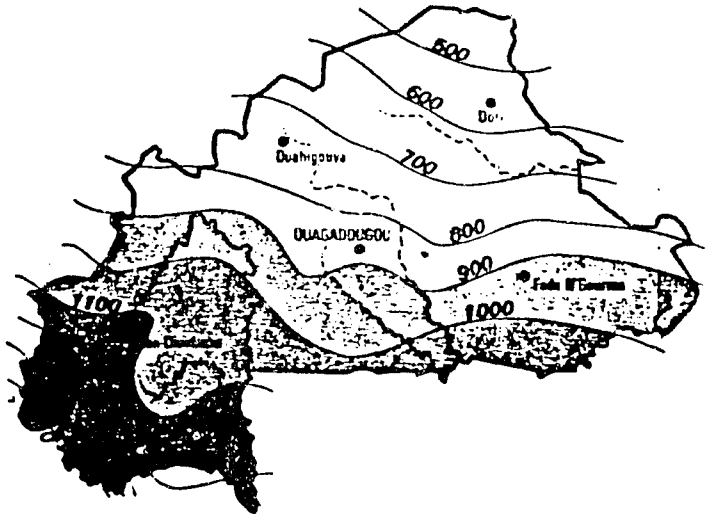
CLIMATE



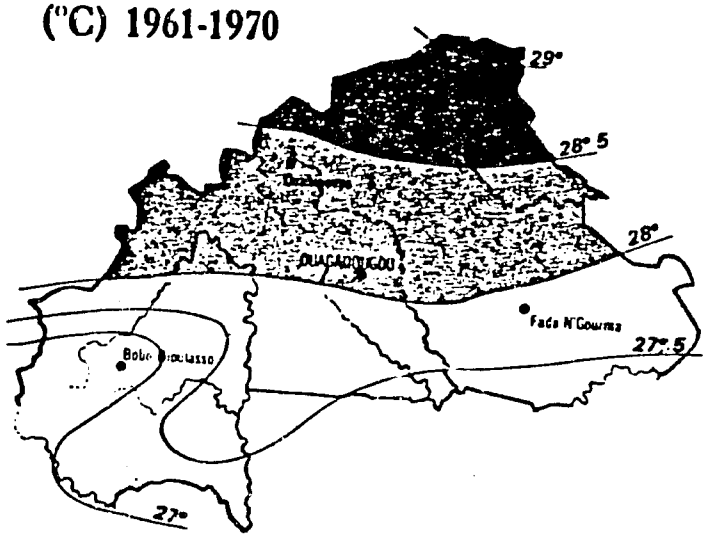
Source: Y. Peron & V Salacain, Atlas de la Haute-Volta. Paris: Editions Jeune Afrique, 1975.

RAINFALL/TEMPERATURE

Précipitations moyennes annuelles (en mm) sur une période de 25 ans

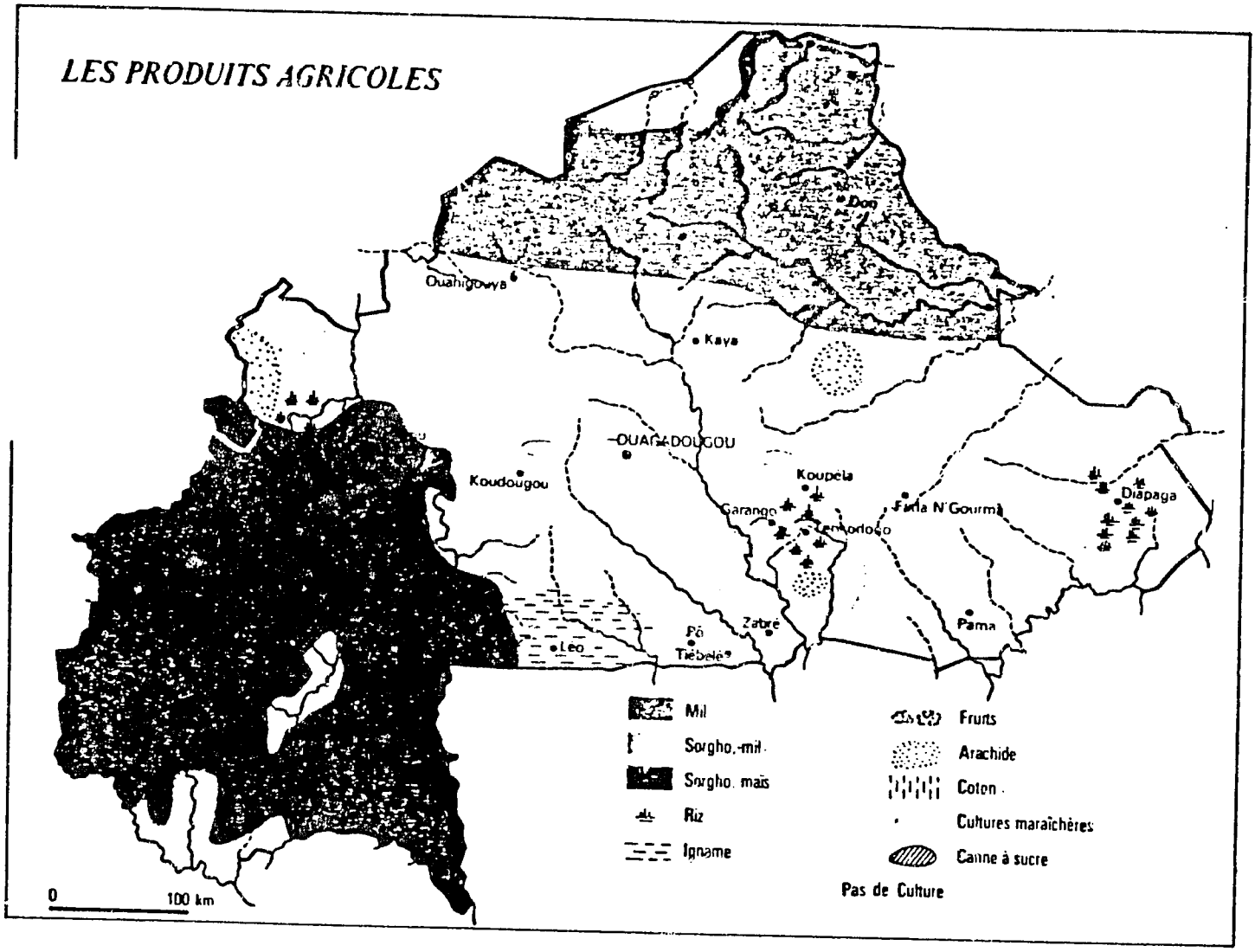


Températures moyennes annuelles de l'air (°C) 1961-1970



Source: Institute National d'Education de Haute-Volta, Geographie de la Haute-Volta. Paris: Edicef.

AGRICULTURAL PRODUCTS



Source: Y. Peron & V Salacain, Atlas de la Haute-Volta. Paris: Editions Jeune Afrique, 1975.

CHANGING PATTERNS OF GRAIN PRODUCTION IN A RESETTLEMENT SCHEME IN BURKINA FASO

Della McMillan
University of Florida-Gainesville

I. INTRODUCTION

A growing literature focuses on the major role that African women play in food production. Boserup (1970:20) states that in large parts of Africa women "do more than half the agricultural work; in some cases they were found to do around seventy percent and in one case nearly eighty percent of the total." Although differences exist between regions, a comparison of agricultural labor force participation rates by the International Labour Office and the United Nations Food and Agriculture Organization shows that on the average forty-six percent of the agricultural labor force in sub-Saharan Africa is female; in North Africa and the Middle East, thirty-one percent is female (Dixon 1982). It is not uncommon to find that in areas of high out-migration and cash-cropping, almost all food is produced by women (Spring 1983; Fresco 1982). Women may also farm a separate piece of land from which they alone derive the benefits (McMillan 1983, Koenig 1980). In addition to their role in cultivation, women traditionally are responsible for preparing, handling, storing, and selling food (Gladwin 1975; Merryman 1980; Haugurud 1982; Ensminger 1983).

Despite the significance of their contribution, there has been a strong tendency to ignore the contributory role of women in the design of new agricultural technology, indicating a lack of sensitivity to the economic role of private production within the family and women's role in managerial decisions.

This tendency to overlook women has been particularly true in the case of planned settlement. Where evaluation research has addressed the impact on women of planned settlement, it has generally shown a decline in the relative economic and social status of women and their role in managerial decisions (Guissou 1977; Conti 1979). As a result, this type of large-scale development project has become a favorite target of criticism for scholars and aid agencies concerned with women (Madeley 1980; Reyna 1981).

There is increasing evidence, however, that at most land settlement schemes pass through a series of three to five-year stages in terms of settler adjustment, economic performance, community development, and the settlers' willingness to modify the recommended program (Chambers 1969; Colson 1971; Nelson 1973; Moran 1979; Scudder 1981). Scudder (1981) suggests that during the first two or three years when settlers are adapting to their new physical, social, and production environment, they typically:

> adopt a convervative status, their first priority being to meet their subsistence needs.... They favor continuity over change; and where change is necessary, they favor incremental change over transformational change.

The transition phase ends when enough settlers "shift from a conversative stance to a dynamic open-ended one, hence initiating a third stage of economic and social development" (ibid.). This transition usually occurs when settler security has increased due to the production of sufficient food and the growing tendency of the settlers to feel more "at home" in their new environment (ibid.). It is also at the point when they have generally completed the most difficult and time-consuming work involved in setting up the new farms. In this third stage one expects to find a greater diversification in family organization, household and intra-household patterns of production, economic and social roles, and marketing. Unfortunately most evaluations of planned settlement deal with projects that are still in their initial stages.

It is the purpose of this paper to describe the longitudinal impact of a major land settlement scheme on women's economic roles. The study focuses on the changing role of women in grain production and marketing. The first section provides background information on the project, the Volta Valley Authority (AVV), and the local SECID/USAID project that supported the research -- the Upper Volta Grain Marketing Development Project. This is followed by a brief discussion of research methods. The third section describes the traditional patterns of food production and marketing in the settlers' home area and compares these with the settlers during different time periods. The final section focuses on policy implications.

II. BACKGROUND

A. The Volta Valley Authority (AVV)

The Volta Valley Authority (AVV) is the agency of the Upper Volta government charged with the settlement and development of Upper Volta's land covered by the onchocerciasis Control Program (OCP).[1] In 1974 the AVV was given complete control of some 30,000 square kilometers covered by the control program. The land represents about twelve percent of Upper Volta's total land area and includes all or most of the valleys of the Red, White, and Black Volta Rivers (Figure 1). The original goals of the project were:

1. to organize the immigration of voluntary settlers from more densely populated parts of the country to planned settlements based on irrigated and non-irrigated agriculture in the decontaminated river basins;

2. to promote the settlers' use of improved farming techniques in order to increase production and minimize the long-term ecological impact of higher population densities;

3. to increase Upper Volta's production of cotton and the basic food grains;

4. to enable the settlers to enjoy a higher standard of living than they could attain in their home areas; and

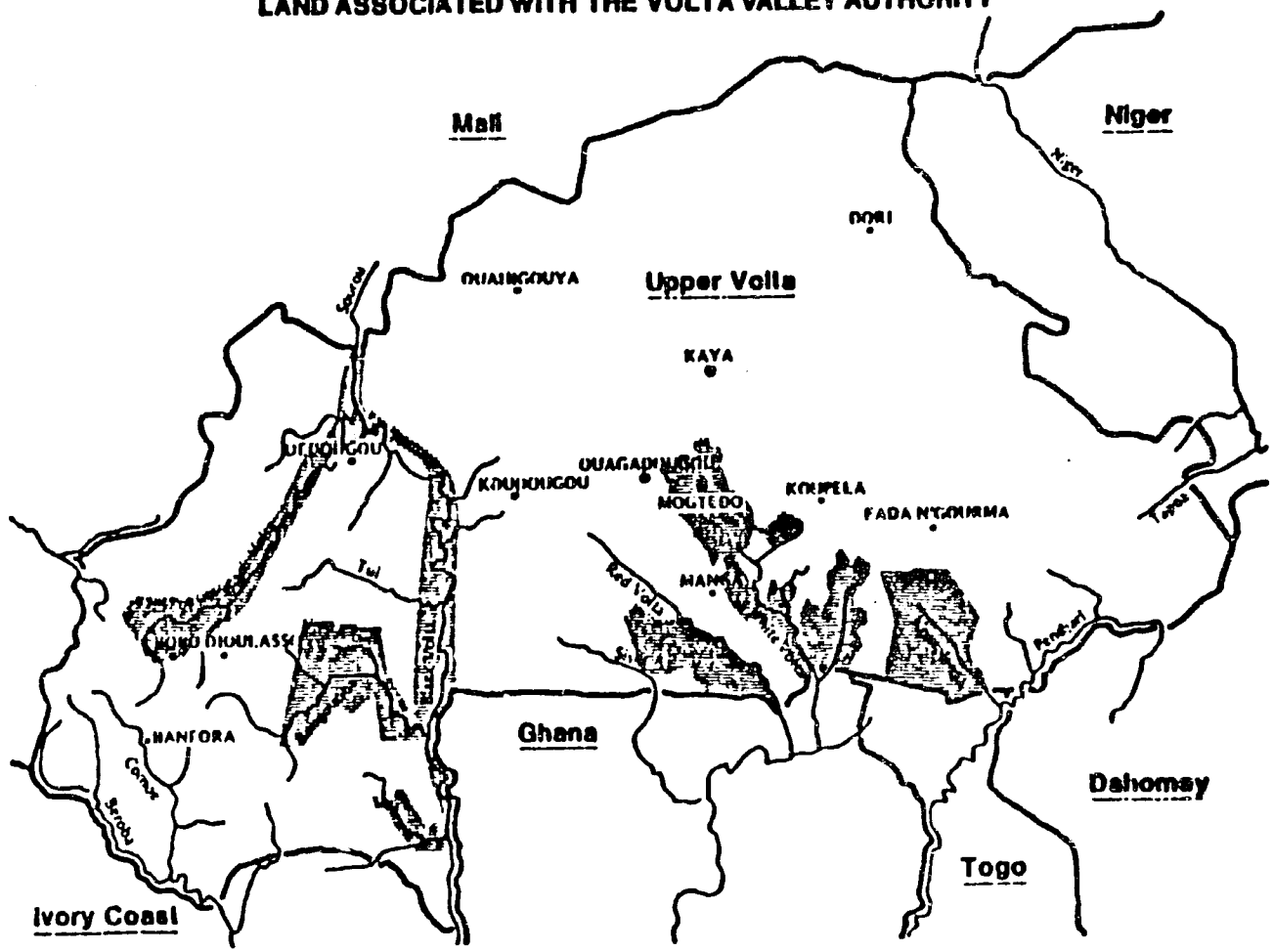
5. to promote regional economic growth in the area of planned settlement.

This official mandate was declared for a twenty year period after which the agency would presumably disappear as an independent structure. Its activities would then be placed under the existing structure of regional and national development agencies (Ministries of Education, Rural Development and Health, Regional Development Organizations (ORD), etc.).

The original project was based on the progressive installation of groups of planned villages known as blocs (Figure 2) (the blocs that had been established in the White and Red Volta Valleys by 1979 and the settlement that was projected through 1986 are shown in Figure 3). The agency was responsible for selecting village sites; installing basic infrastructure (roads, wells, a school, a dispensary, and extension-worker housing); recruiting, selecting and transporting settlers; and coordinating a number of social and economic services for the new villages. Figure 2 shows the official layout of the AVV village described in this study.

Figure 1

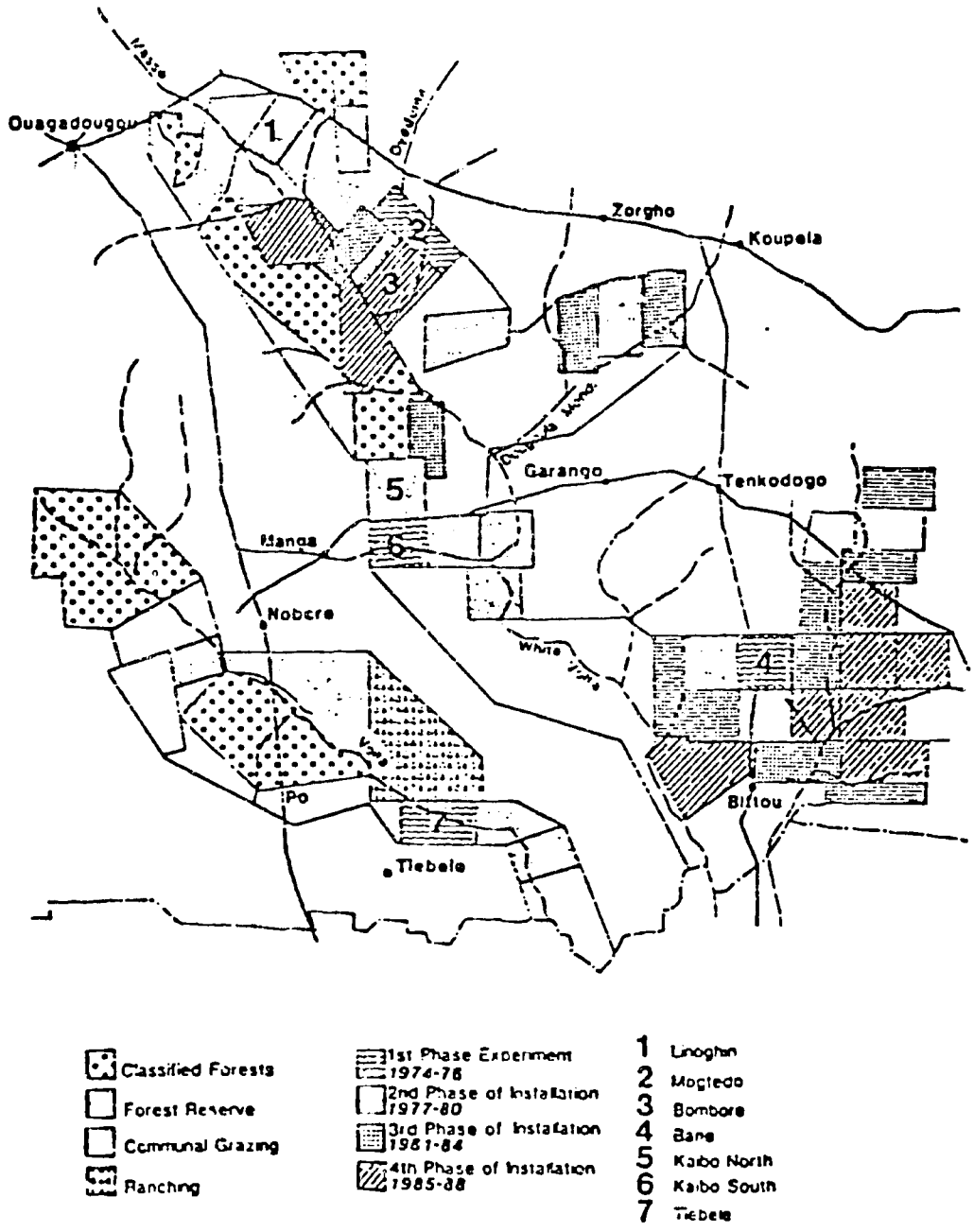
LAND ASSOCIATED WITH THE VOLTA VALLEY AUTHORITY



Based on: République Française, Ministère de la Coopération, Cartographie des pays du Sahel.

Figure 2

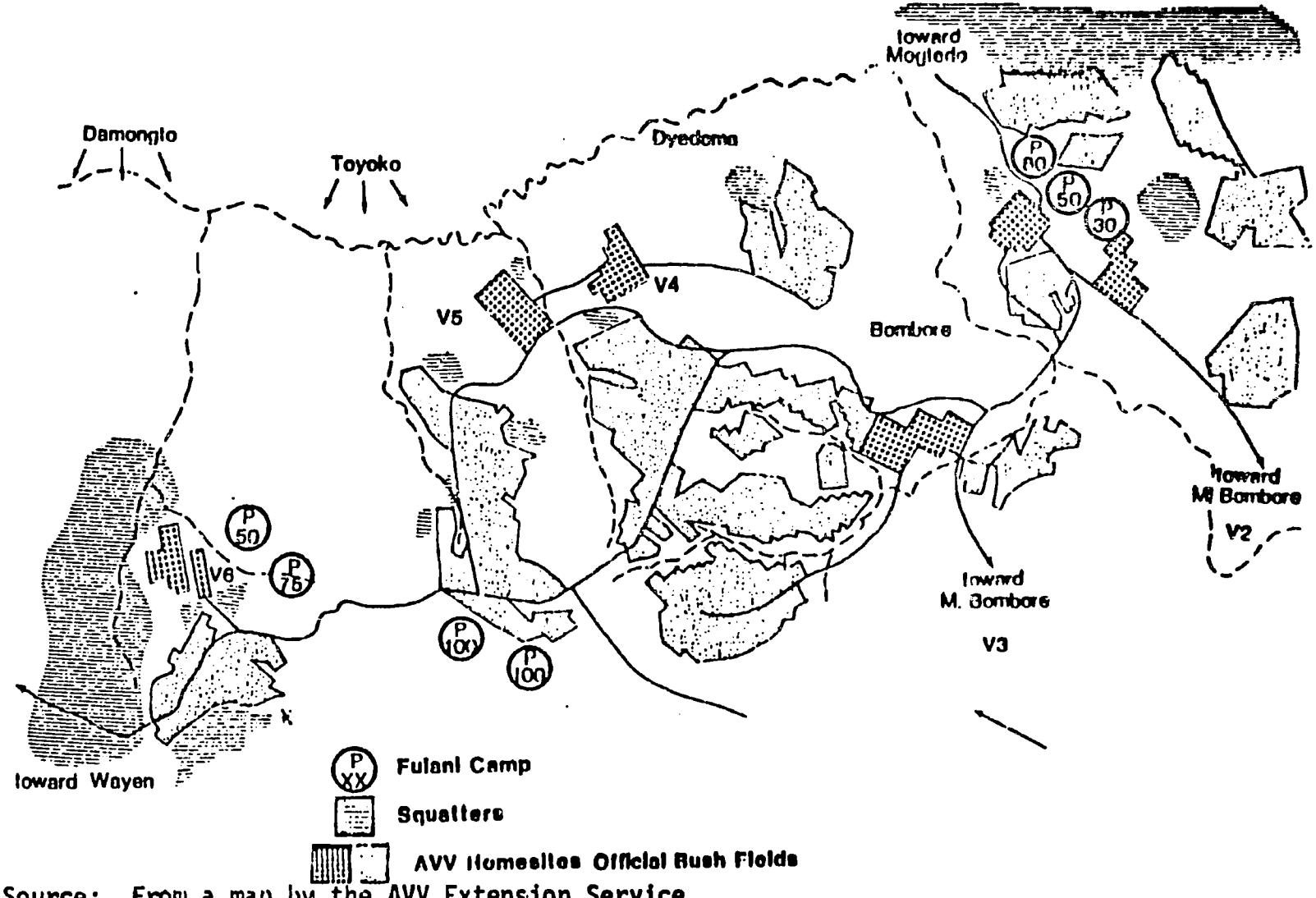
Projected Installation of AVV Village Clusters



Source: From a map by the AVV Extension Service.

Figure 3

Official Design of the AVV Bloc of Mogtedo Containing Six Villages



Source: From a map by the AVV Extension Service.

In return for the right to cultivate a farm in one of the planned villages, a settler is required to adopt a package of intensive cultivation practices. These include:

1. a new system of land allocation to control field layout, the total area planted in each of the major crops, and the total area cultivated per worker;

2. new production techniques such as monocropping, sowing in lines, thinning, and, after the second year in the project, cultivation with an ox-drawn plow; and

3. the use of new high yielding varieties of seed, chemical fertilizer, and insecticides.

During the first five years this development program was to be supervised by a dense network of extension workers that included one male agent for every twenty-five families and one female agent for every fifty families. It was anticipated that this ratio of extension workers to settler families would be gradually reduced in the older villages and that these reductions would continue until the AVV villages could be integrated into the extension services of the regional ORD's.

In addition to the extension program, the AVV provides a variety of credit, distribution, and marketing facilities to support the agricultural program. This includes one warehouse per village cluster at which the settler can purchase fertilizer, improved seed, pesticides, animal traction equipment, and spare parts. Most of the variable production costs, such as fertilizer, can be purchased on a short-term credit program with reimbursement occurring at the time of the cotton sale. Long-term credit (over five years) is used to finance the purchase of animal traction equipment such as plows and carts.

B. Projected Impact of the AVV Project on Upper Volta Grain Production

The development of the Volta Valleys is said to offer a unique opportunity to increase Upper Volta's production of the basic food grains:

1. to introduce an intensive system of grain cultivation which would minimize the negative consequences of high population densities in the fertile Volta Valleys;

2. to raise farmers' yields by providing them with a richer piece of land and access to the complementary package of technology, non-labor inputs, and credit that would allow them to follow more intensive cultivation patterns;

3. to raise the settlers' net agricultural income and living standard; and

4. to provide a regional grain surplus which would allow the country to offset a large part of the projected food deficit for the next twenty years.

As such, the most effective means of integrating the AVV settlers into the national grain marketing system is of tremendous concern.

C. The SECID Upper Volta Grain Marketing Development Project

It was the latter point that was the concern of the Upper Volta Grain Marketing Developing Project which provided local support for the research. The overall objectives of the project are: "to assist the government of Upper Volta to establish a set of conditions within the country that will lead to food self-sufficiency" (SECID 1982:4). The project has attempted to do this through a series of supports to improve the efficiency and managerial capacity of Upper Volta's National Cereals Office (OFANACER).[3]

III. METHODS

The research that is the basis for the present study was conducted in two periods:

1. a baseline study (April 1978-April 1980) concerned attention to the economic and social consequences of the AVV for a single group of settlers from the same home village; and

2. a follow-up study was conducted of the same group of settlers (July-August 1983).

The baseline study was funded by a grant from USAID through the Department of Agricultural Economics, Purdue University (AID/AFR 1257) and the follow-up research by a SECID/WID Technical Assistance fellowship.

A. The Baseline Study (April 1978 to April 1980)

The baseline research was conducted over two agricultural seasons from April 1978 to April 1980. The first year was spent at Damesma, a village from which more than thirty households had emigrated to the AVV. The second year was spent in the third village (V3) of the AVV village cluster of Mogtedo (nineteen of the forty-six households in V3 were originally from Damesma). The two sites were separated by about 120 kilometers (200 kilometers by the main roads) (Figure 1).

A farm management survey was used to gather information on production and income in each of the two settings--the AVV village and the "traditional" home village. The farm management survey of the settlers' home area included thirty-five households (eleven percent of the recorded households) in the neighboring villages of Damesma, Bangasse, and Zorkoum in 1979 (Table 1) (The Damesma households that were included in the 1979 sample represented eight percent of the recorded households in the village). The farm management survey of the AVV village includes nine settlers from Damesma who had been living at V3 Mogtedo for periods of three to five years (nineteen percent of the recorded households in the village) and three Damesma households in the village cluster at Mogtedo-Bombore which had been at the project only one year.

B. The Restudy (July to August 1983)

The Technical Assistance fellowship made it possible to return to Upper Volta and work with the same group of Damesma settlers. The sample was enlarged from ten to twenty-six households. This included the ten original households from the 1979 research (one of the nine sample households containing two married brothers had split to form a separate farm in 1983), one additional household from Damesma, and fifteen households from each of the other home village groups (settlers from the area of Kaya but not from Damesma and settlers from Koupela).

Table 1

Households Included in the Baseline and Follow-up Survey of the AVV and Kaya Villages

Village/Village Group	N. Sample	N. Total Village	% Total Village
The Home Village Area (1979)			
Kaya (All 3 villages)	35	320	11%
Damesma	(12)	(155)	(8%)
The AVV Village, V3			
Settlers (1979) (All from Damesma)	9	47	18%
Settlers (1983) (Damesma and other village groups)	26	47	55%

(The twelve Damesma households are included in the Kaya sample of thirty-five. This includes twelve households from Damesma, eleven from Zorkoum and twelve from Bangasse for a total of thirty-five.)

The information gathered can be grouped into four categories:

1. Field Survey. A single form was used to record the areas of each parcel culvitated by a different person or group of persons. Other information gathered included: location of the field in the AVV cycle of rotations (e.g., whether or not the farmer was planting the required crop; use of pesticides and manure; date of planting and first weeding; and type of land preparation before planting and weeding. This information was then transferred to a code sheet to facilitate control and data entry.

The fields for the ten settlers in the 1179 sample were measured with a metal tape to determine length, compass to measure angles, and a hand computer to calculate area and closure error. This is the same method of measurement that was used in the baseline research in 1979. For the other sixteen households we simply measured length and width. When the old system of tape and compass measures was compared with calculations based on length and width, the difference between the two was only a few hundred square meters.

2. Socio-economic Study. A second group of forms dealt with: (1) the farmer's recollection of the amount he or she produced for each of the major crops in the preceding year; (2) the purchase and resale of livestock and livestock products; (3) the sale of agricultural products; (4) gifts received from Ivory Coast, spouses, the male household head, and from neighbors during harvest; (5) the number and present market value of livestock; (6) the existing and estimated market or resale value of certain capital goods such a bicycles, mopeds, houses and granaries; (7) the farmer's recollected income from off-farm production activities; and (8) the farmer's recollection of expenses incurred from agricultural production during the preceding year. These questionnaires were addressed to each adult and teenage member of the twenty-six households.

3. Census. A third set of questionnaires focused on change in the size and composition of the settler households due to births, deaths, return migration, marriage, or immigration of additional family members.

4. Project Records. The official records on family size and composition, purchases of equipment, and cotton sales were recorded for each of the V3 households.

The information from the V3 field survey, socio-economic study, census and project records, have been entered into the University of Florida computer system and have been subjected to elementary analysis. This information will eventually be analyzed in terms of a breakdown of income and field area by subhousehold units. These aggregate figures will then be added to the data set created for the 1979 sample households in order to compare the home village with the settlers during different time periods.

IV. RESULTS

A. Global Response to the AVV Agricultural Program

1. Limited Adoption of the Recommended Technical Package

The Baseline Survey of the Kaya settlers agreed with the AVV Statistical Service that the Project's attempts to induce artificially the conditions of land scarcity which would encourage the settlers to adopt intensive cultivation practices did not succeed (Murphy and Sprey 1982; McMillan 1984). Specifically:

1. The settlers who had been at the project for shorter periods of time tended to follow the extension package more closely than those who had been there longer.

2. Cotton was the only crop on which the recommended package of intensive cultivation techniques was consistently applied. This includes monocropping, chemical protection, planting in rows, use of recommended quantities of fertilizer, thinning, timely weeding with animal traction and use of fertilizer.

This differential acceptance of agricultural innovations on particular crops and according to length of residence in the scheme was related to: (1) the higher level of supervision by the extension service in the early years; and (2) the extension service's primary focus on cotton which was used to reimburse settler credits to the project.

2. Positive Effects on Income

The project was more successful in its attempts to raise settler income. Although the average yields for sorghum were below the expectations of the project, they were two to three times higher than the recorded yields for Kaya (Table 2).

By 1979 the older settlers were producing a quantity of grain that was about three times the average quantity per resident and per unit labor recorded for the settlers' home village (Table 3). This represents an average of 144 kilograms per resident or 515 kilograms per household above the FAO minimum food standards (McMillan 1983:156).[4] In contrast, the average household in the Kaya sample was producing 400 kilograms below the minimum food standard.

Table 2

Yields for Sorghum and Millet

Location	Crops	
	White Sorghum kg/ha	Millet kg/ha
Anticipated Yields (1975)	900-1000	--
Results from Statistical Service Survey (1979)	700- 900	--
Damesma Settlers (1979)	684	--
Damesma Home Village (1979)	201	275
Other two Kaya Villages (1979)	355	350

Source: McMillan 1983:405.

In 1979 the settlers' cash income from the sale of cotton and other agricultural products was 172,000 CFA per household ($750) and 38,000 CFA ($160-165) per unit labor using the AVV system of labor and consumption equivalents (Table 3). This is seven times the recorded figures for the settlers' home village (38,000 CFA unit labor versus 5,000) and represents an increase in sales from the equivalent of sixteen to thirty-nine percent of the recorded production of all crops. The study shows, however, that the increased income of the settlers is primarily due to an expansion of the total area cultivated and the natural fertility of new soils--not to the successful introduction of the AVV's package of technical innovations.

3. Transformation of Traditional Cultivation Practices

Although the project did not succeed in introducing the complete package of technological innovations, it has been associated with a number of important changes in the organization and distribution of production including:

1. increased access to land;
2. a radical shift in field structure and organization of the farms;
3. the introduction of new cultivation methods;
4. an increase in total labor though not in labor per unit land; and
5. higher production costs.

Table 3

Grain Production, Net Agricultural Income, Labor and Sales in 1979 (per unit labor using the AVV system of labor and consumption equivalents)

Production and Sales	Damesma Settlers n=9	Kaya Damesma n=12	Kaya All 3 Kaya Villages n=35
Grain (kg)	902	271	360
Hours Worked (weighted)*	1,300	620	640
Gross Val. Prod. (CFA)	88,000	29,000	31,000
Cash Costs Prod. (CFA)	13,000	1,500	1,000
Total Sales (CFA)	38,000	5,000	5,000
Sales Cotton	28,600	---	---
Sales Other	9,700	---	---
Net Value Prod. (CFA)	75,000	28,000	30,000

* Uses the AVV system of labor equivalents. Each recorded hour for a female between the ages of 15 and 55 is counted as 0.75 of the standard "man hour"; a man between 15 and 55, is 1.0; a man over 55 as a 0.50; a woman over 55 as 0.25; a male child between 12 and 15 as 0.50; a female child between 12 and 15, as 0.25.

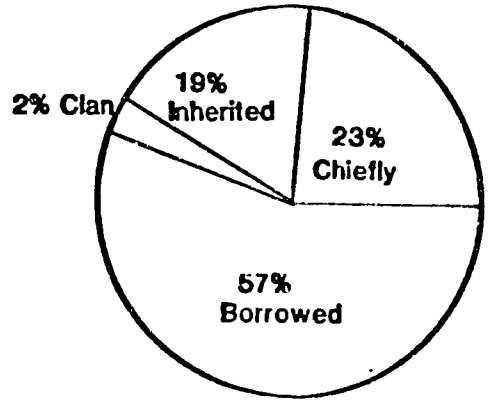
Methodology: The figures represent a weighted average over the sample households in each group. The gross revenue is equal to the total value of production minus the costs of all fertilizer, pesticides, and purchase of seeds. The cost of pesticides for protection of the seeds and harvest is no subtracted in order to be comparable with the Statistical Service Survey. The net agricultural income is equal to the gross revenue minus all out-of-pocket cash costs for animal traction. Since many of the farmers wer paying off the equipment, their cash costs were 10,000 CFA per unit consumption lower than the estimated depreciation on the material (McMillan 1983:411).

4. Access to Land

In the settler's home village, a household has access to land through a combination of inherited, customary, and borrowed rights (Fiture 4). Since the fields a farmer loans tend to be his worst fields or the fields that he is about to leave fallow, and a farmer will hesitate to use manure or fertilizer on a field that may be reclaimed, a high percentage of borrowed land is associated with lower income. Most of the AVV settlers came from poorer clans with smaller, lower quality holdings and a higher percentage of borrowed land. Therefore, the project's promise of registered land tenure was an attractive feature.

Figure 4

Distribution of Land Rights in the Settlers' Home Village



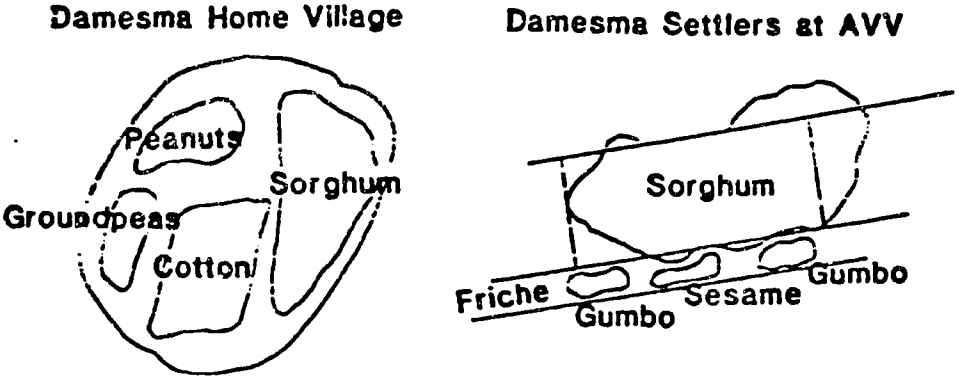
5. Field Structure and Organization of the Farm

A typical farm in the settlers' home village may contain twenty to twenty-five parcels in four to five distinct locations or terrains. Each terrain may have a separate land tenure arrangement (for example, inherited by the household head or borrowed from a certain relative). One terrain might include as many as eight separate parcels with different crops and different persons or groups of persons responsible for their cultivation (Figure 5).

In contrast the AVV bush fields are grouped by crop and year of installation on four areas that are dictated by the extension service. Although many of the settlers have enlarged the bush fields by as much as 25-30 percent, they have respected the basis AVV model of a single bush field (Figure 5).

Figure 5

Comparison of Field Structure for the Samesma Settlers and Kaya Villages



6. New Cultivation Methods

In 1979 the Damesma settlers' use of fertilizer was below the project plan (an average of 15 kg/ha versus the recommended 150 kg/ha for white sorghum; 83 kg/ha versus the recommended 150 kg/ha for cotton). Only thirty-two percent of the white sorghum received any fertilizer at all. This represented an average of 46 kg/ha for the fourteen fields that received fertilizer and 15 kg/ha for all 43 fields.

Still the level of fertilizer used by the settlers was substantially higher than in the home area. In 1979 only one of seventy-seven sorghum and millet fields at Damesma received any mineral fertilizer at all. While the settlers increased their use of mineral fertilizer, they tended to devote

less time to some of the more traditional methods of preserving soil fertility such as spreading animal manure and straw.

Although the use of animal traction for operations other than plowing was below the recommended program, it was much higher than for the settlers' home area. Even the compound and privare fields which were not under the control of the extension agent tended to be plowed before planting. Farmers who had no oxen paid 14,000-20,000 CFA to have their fields plowed by tractor or rented animal traction.

7. An Increase in Total Labor Though Not in Labor per Unit Land

The recorded labor time for the Damesma settlers was almost twice the recorded figure for the home village farmers (12000 weighted hours per unit labor versus 600) (Table 3). This was not, however, associated with any greater care in the performance of weeding. Rather the majority of the increase in total labor time is explained by the cotton harvest which extends several months beyond the other harvests. The settlers spent an average of 130 weighted hours per hectare weeding white sorghum and 217 hours per hectare for cotton. This compares with 268 weighted hours per hectare for white sorghum and 346 for cotton in the settlers' home village (McMillan 1983:397). By the fourth year when most settlers had repaid all or most of their initial debts, they tended to increase their interest in the extension cultivation of food grains which had a higher unit price as well as lower demands for cash and labor inputs.

8. Higher Cash Costs of Production

The higher AVV yields were associated with increased production costs. In 1979, the Damesma settlers spent an average of 20,000 CFA per household on fertilizer, seed, and pesticides. This was over ten times the amount the average home village household spent during the same time period (an average of 2,200 and 1,200 CFA per household).

The largest cash expenses were for the purchase and upkeep of animal traction equipment and animals. Some of the other costs of the equipment include settlers' use of special grain (usually the worst grain from their harvest or the hulls of the threshed grain) and purchased grain stalks (some of the settlers maintain that the stalks from the AVV varieties of sorghum are not as good for the animals as the traditional varieties and buy stalks from indigenous farmers). Another cost to the settler was the labor involved in maintaining the animals. This was most important during the rainy season when the oxen must be watched continuously to prevent their wandering into the fields or getting lost.

Even with the high costs of production that the settlers faced in 1979 (an average of 50,000 CFA for installment payments and the upkeep of the animals and 20,000 CFA for fertilizer, pesticides, and seed), the settlers' net agricultural income (after expenses) was still two to four times higher than the average income in their home area (Table 3). In addition, the

households which sold their animals in 1979 showed a one time cash profit of about 20,000 CFA after the purchase of new animals.

B. Changing Patterns of Production Within the Household

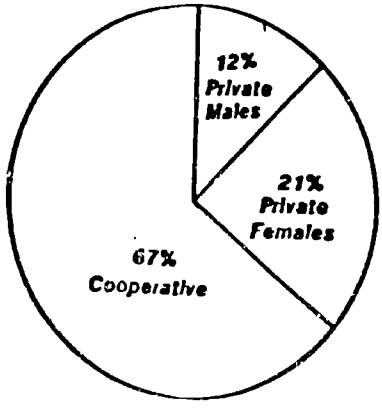
The AVV has been associated with a number of important changes in the organization of production and distribution within individual households. This is one aspect of the project which has had a major effect on women.

1. Household Organization of Production in the Settlers' Home Village Land

In the settlers' home village, the total area of inherited, customary, and borrowed land to which a household has access is subdivided into privately and cooperatively worked fields (Figure 6).

Figure 6

Subdivision of Household Land in the Settlers' Home Area



A cooperatively worked field or pugo is cultivated by the entire family. The head of the household dictates what crops are to be cultivated on these parcels, the timing of the operations, and distribution of their production. The grain that is produced on the cooperatively worked fields is used to feed the household for most of the year. In addition, the household head controls any income from the sale of food or cash crops grown on these fields.

Each individual within a given household has the right to cultivate a certain amount of land for personnel needs. For a women this includes the right to at least one plot of a food grain, one or two plots of peanuts or groundpeas, and at least one vegetable patch. The unmarried

children will usually plant one parcel of grain or a cash crop such as peanuts or cotton. Subhouseholds composed of married sons or brothers and their families will also farm a certain amount of food and cash crops separately. Any crop or income produced from a private field is under the control of the individual responsible for its cultivation.

In general the household head determines where the members of the family will be allowed to plant their private fields. The main exceptions to this are older wives or one of the male household head's father's wives who will usually retain a portion of their deceased husband's fields (he is usually a deceased brother or uncle) or a woman who has requested a land loan on her own (this is usually from a kinsman). An average of thirty-three percent of the total area planted in the settlers' home area in 1979 was cultivated as private fields; sixty-four percent of these private fields were supervised by women (Figure 6).

Labor

Although cooperatively worked fields are given priority, certain hours of the day are set aside for the cultivation of private fields. This is usually an hour or two in the early morning before returning home. Occasionally a household head may designate one or two days that are to be devoted to the private fields entirely. The subdivision of household land is reflected in the subdivision of household labor with thirty-three percent of the total hours worked being on private and sixty-seven percent on cooperative fields.

Since priority is usually given to cooperative fields, the private fields tend to be planted much later. This delayed planting increases the risk of an inadequate cycle of rainfall on the field. By the same token, private fields are given lower priority with regard to weeding and harvesting.

In many cases, the quality of the work is not the same on privately and cooperatively worked fields. This is especially the case for women who are often tired after a full day of work in the cooperative fields. When we verified our interviews with on-site visits, we often found that the two hours that a woman reported working would consist of her visiting her private fields, spending less than thirty minutes weeding, and the rest of the time picking leaves. We also observed that there were important differences between women in the same family in terms of the amount and quality of time they could devote to the cultivation of their private plots. Factors influencing this were (1) the position of the woman within the individual household; (2) relationship to her husband; (3) child-rearing responsibilitis; (4) health; and (5) presence or absence of older sons who could assist the male household head in the fields.

In addition to their role as semi-autonomous producers of food crops, women play an important role in the cooperatively worked fields and in providing family food. Women provided an average of fifty percent of the hours worked on cooperative fields. Moreover, there was very little difference in the contribution of male and female workers to the performance of most operations except mechanical plowing and applications of fertilizer and pesticides.

Non-Labor Inputs

In addition to providing labor, a woman is responsible for providing the non-labor inputs for her private fields such as seed, manure, fertilizer, and, if she is planting cotton, pesticides. The grain seed usually comes from the previous year's harvest or is distributed by the woman's husband. In addition, it is quite common for both men and women farmers to receive "gift" seed from neighbors who had a successful crop the year before. The major cash expense for production is for the purchase of peanut and groundpea seeds. The harvest of these crops is usually eaten immediately since the seeds are difficult to store. In the rare case that a woman is cultivating cotton, she is obliged to pay cash for fertilizer and pesticides with income from non-crop production activities such as trade and the sale of small livestock.

Income

As estimated fifteen percent of the total area planted and thirteen percent of the total production of sorghum and millet (the figure was as high as twenty-seven percent of the area planted and twenty-eight percent of production in the settlers' home village) was on women's fields. In addition, an average of twelve percent of the area planted in corn, sixty-six percent in peanuts and groundpeas, sixteen percent in rice, and fifty-eight percent in vegetable was on women's private fields.

Marketing

The food and cash crops that are produced on the private fields of unmarried sons and daughters tend to be sold at local markets. The cash income they derive from the sale is used for personal needs such as clothes, bicycle repairs, and petty trade.

Very little of the women's grain is sold. Rather, it tends to be used for supplementary food during the part of the year when the male household head may reduce food rations to one meal a day.

Expenditures

The cash income that a woman earns from the sale of her peanuts, groundpeas, sesame, cotton, and dried vegetables, is used to meet her

needs and the needs of her children. These expenses include purchases of clothes, school supplies and school fees, as well as gifts to her friends and family, that cannot be or are not satisfied by the male household head. In addition, it is the wife's responsibility to provide the basic condiments (oil, spices, meat or fish) for the daily sauces into which the sorghum porridge is dipped.

Related Non-crop Activities: Livestock

Under the best circumstances a woman will use the income from the sale of her privately produced crops to purchase livestock. In fact, very few of the village women in the study had sufficient income to do so on their own. Almost all purchases of small livestock were made with cash gifts from returning migrants or gifts that a woman received when she married.

2. Consideration of Private Production in the Design of the AVV Agricultural Program

There was little consideration of the economic and social role of private production in the design of the AVV agricultural program. Almost all agricultural extension (the selection and regulation of land, explanations about the use and purposes of new cultivation techniques, and credit programs to purchase improved inputs, were directed the official male head of household (chef d'exploitation).

One reflection of this is in the assignment and training of extension agents. The male extension worker or encadreur functions as the main tie between the settlers and the administration. He is charged with informing the farmers about new agricultural techniques and insuring that the farmers practice them on the fields. An additional role is to assist the farmers in gaining access to the AVV credit, veterinarian, warehouse and market services.

The female extension worker or animatrice focuses on the AVV program to promote family health, nutrition, and handicrafts like weaving and knitting. An animatrice may also assist the encadreur in information sessions, food distributions, functional literacy courses, and bookkeeping. She does not receive any formal training in farming or consider her role as that of increasing female understanding and/or participation in the recommended agricultural program.

Although there was little consideration of private production, the project did recognize the important role of female labor. The amount of land that a settler received and the proportion of each field that he was authorized to plant, were supposed to be determined by the size and composition of his family labor force. This potential for labor is measured by a labor index that assigns weights to persons in the family according to

sex and age. Since an adult male is considered to have a work capacity most readily transferred to a variety of tasks, this is the standard unit and is assigned a value of one. Women and children are assigned lesser values (o.75 for adult women, 0.5 for teenage boys, 0.25 for teenage girls). The smallest household authorized to have an official farm is Type Ia, one adult male (1.0) and one adult female (0.75).[5]

3. Changing Patterns of Household Production in the AVV

Land

By the end of the fifth year most households had reinstated a small area of private fields. Most of these private fields were small parcels of peanuts and in official cultivation bands; vegetable crops in the fields surrounding the concession; or small illegal plots outside the official cultivation bands.

Contrary to what I expected to find, the percentage of total area that is cultivated as private fields has remained relatively constant (twelve percent fo the Damesma settlers in 1979; twelve percent in 1982) (Table 3). Except for a two percent increase in the land cultivated by subhousehold units (married sons and brothers), there have not been any major changes in the distribution of these private rights. The settlers' wives cultivated about six percent of the total land planted in 1979 and seven percent in 1983.

The more remarkable change in land area cultivated has been in crop patterns, notably an absolute and percentage decrease in the land area cultivated in cotton as well as an increse in the area of private fields planted in the higher priced grain crops which have lower cash costs and labor inputs. In 1979 only a small number of settlers cultivated private fields of sorghum; in 1983 almost all women cultivated at least one private sorghum field and most women cultivated more than one. Although the study shows a drammatic increase in the absolute area of sorghum cultivated by women, this does not necessarily mean that the percent of total area has increased since the men also show an increase in area cultivated.

Non-Labor Inputs

In contrast to the settlers' home village, it was not uncommon for an AVV woman to get assistance from her husband in the cultivation of a private field. This includes the male household head or an older son helping her to plow her fields and the household head providing her with small amounts of seed and fertilizer.

Table 4

Subdivision of Household Land, Labor and Production

Type of Field	Land Area Cultivated		Recorded Labor Hours		Kg. Production Sorghum & Millet		CFA ($) Value of Production	
	Home 1979	Project 1983	Home 1979	Project 1983	Home 1979	Project 1983	Home 1979	Project 1983
N of sample Households	(35)	(26)	(35)	(9)	(35)	(26)	(35)	(26)
% on Cooperative Fields	67	89	67	92	72	92	75	92
% on Private Fields								
a. Male	12	3	15	1	15	4	10	5
b. Female	21	8	18	7	13	4	15	3
Total	100%	100%	100%	100%	100%	100%	100%	100%

Methodology: Land figures are based on a breakdown of total area planted. The labor figures represent a weighted average over the aggregated labor data for each household in the sample. The 1979 production figures are based on recorded harvests; the 1983 figures based on the farmers' estimate of per field and per crop production for the year before. Total production figures are based on the CFA equivalent of production on all rain-fed fields.

Labor

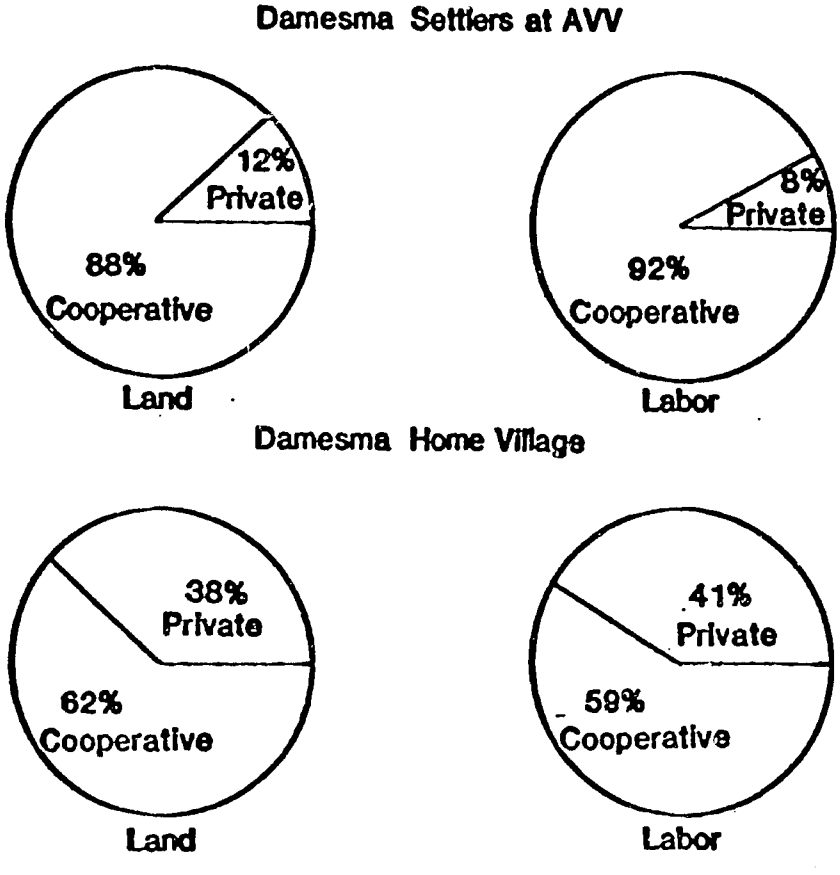
The project has also been associated with major changes in the internal organization of household labor. In the settlers' home village, an average of forty-one percent of labor time was devoted to the cultivation of private fields. This compares with less than ten percent for the Damesma settlers in 1979. Figure 7 shows that this allocation of household labor reflected the distribution of private cultivation rights in the settlers' home village. Although women devoted a much smaller percentage of their labor to the cultivation of private fields, they were still responsible for fifty percent of the total hours worked on cooperative fields.

Agricultural Income

The decrease in private production is associated with a parallel decrease in the total kilogram production and CFA value of production that derives from private fields and fields supervised by women (Table 4.) In 1983, four percent of the total production of sorghum and millet and three percent of the CFA value of production was from private fields supervised by women (Table 4). This compares with thirteen percent of the production of sorghum and millet and ten percent of the CFA value of production in the settlers home area (Table 4).

Figure 7

Allocation of Land and Labor to Private and Cooperative Fields



Income from Gifts

This decrease in women's independent crop production was associated with new sources of income. One of the most important was the much greater importance of harvest gifts and cash gifts to wives, and married and unmarried children after harvest. In 1979 the typical AVV wife received 15-20 gifts of corn ranging from five ears to an entire bushel from friends or her husband. This amounted to 50-100 kilograms or occasionally 200 kilograms of grain corn after husking. In addition, most AVV wives received cash gifts of 5,000-10,000 CFA after the sale of the cotton. Wives in smaller households and older wives received as much as 25,000 CFA. It was also quite common for the household head to make cash gifts to family members after the sale of a traction animal that had been looked after cooperatively.

Marketing

In contrast to the settlers' home area, almost none of the AVV women's grain was used for family food. Most of the grain was sold at or immediately after harvest. Due to the distance to local markets, the grain was usually sold in quantities of one to two tins (18-36 kilograms) by a woman's husband or child.

Additional income came from the sale of 35-50 kilograms of harvest gifts from other families in the village. This grain was sold to village merchants who would then sell it at the regional Mogtedo market. These marketing patterns are very different from the settlers' home village where the women had access to local markets and were able to sell their own crops.

Almost all the male household heads reported selling at least three large sacks of grain, usually in single lots in the period after the first weeding when food prices are high due to grain shortages. By this time the farmers have a fairly good idea of what crop will be successful and are willing to assume the risk of selling their extra grain. These larger quantities of grain are transported to market in a cart.

What the marketing study did not show was the signficant increase in the amount of sorghum that was being exchanged through:

1. the settlers sponsoring new settlers who were not covered by the AVV food subsidy program; and

2. the direct exchange of sorghum for livestock.

By 1983 the AVV had changed its emphasis from long-distance immigration to working with settlers who were moving into the valleys on their own. As a result, almost all of the established settlers were involved in sponsoring, transporting or assisting new settlers. This assistance typically included: (1) a portion of the new settlers' family boarding with the established settler for all or part of the year while the rest of the family was clearing bush fields in an area where they hoped a new AVV village would be built, and (2) gifts of food to supplement the AVV rations once the new settlers were enrolled in the official AVV program. This latter type of food aid accounted for an estimated thirty to fifty percent of the 1982 harvests, sometimes doubling the family's food needs.

Another use for grain was in exchange for livestock. The survey showed that a large number of farmers sold their traction animals the year before the study and used the money to pay off their remaining debts to the project. In most cases the replacement oxen were purchased from the local Fulani in exchange for grain. The cost of animals did not appear in any of the data on marketing but was discovered during the research on purchases and resale of livestock.

Expenditures

The project has also been associated with important shifts in expenditure patterns. This includes the male household head's taking responsibility for purchases of meat and condiments for the sauces as well as increased expenditures for women and children's clothing.

Related Non-crop Activities: Livestock

Between 1979 and 1983 there was a tremendous rise in livestock ownership. All the Damesma farmers had increased the size of their on-farm livetock from the two plow animals (the original animals were selected and financed by the AVV) to a minimum of four oxen and herds of 20-30 goats and sheep. This increase in purchased animals through cash purchases and the exchange of "surplus" grain is attributed to:

1. the settlers' preference for diversifying the household's production activities rather than increasing their investment of time and cash in agriculture in view of growing family size and a high degree of uncertainty about the project's future;

2. the absence of alternative opportunities to invest the income earned from the sale of food and cash crops; and

3. the growing number of households with children that could be detached as full-time shepherds (This is again because of the increasing size and complexity of settler households. Young families where all of the children are in school or are under the age of ten are at a disadvantage).

Although many of the farmers followed the traditional pattern of boarding the larger livestock with Fulani herders, there were a growing number who kept the animals in corrals next to the compound. This switch to on-farm livestock production seems to be related to their unwillingness to trust the local Fulani with whom they have no tradition of exchange relationships and the proximity of suitable grazing and watering spots in comparison with their home villages.

One of the more striking results of the re-study was the evidence for a dramatic increase in the incidence of animal ownership by women. This seems to be related to the women's desire for semi-autonomous sources of income but the lack of time and a recognized right for their private production of crops. It can also be attributed to the higher level of "disposable" income that most women have due to their increased sales of grain, sales of gift corn, cash gifts from the male household head, and the male household head taking responsibility for many of the expenses they had traditionally shouldered.

C. Conclusions

In conclusion, the AVV has brought about a number of important changes in agricultural production and income. These include:

1. an increase in food production and cash income;

2. the transformation of traditional production practices toward greater cash cropping, higher cash expenses for production, more extensive cultivation practices, and greater use of animal traction; and

3. an increase in the "surplus" production of food beyond subsistence needs which can be given as gifts or exchanged for livetock.

These changes in household income and production are in turn related to changing patterns of production and distribution within individual households. In the settlers' home area, women are responsible for about half the labor on the cooperatively worked grain fields that are the main source of family food. They

also farm a certain area of land from which they alone derive the benefits. Although the private fields represent less than twenty-five percent of the average household production, that twenty-five percent is vital to the survival of the extended family. The grain that is produced on the fields provides supplementary food for the woman and her children during dry periods. The income from the sale of cash crops is used to purchase condiments for family meals and to satisfy personal needs such as gifts to her family, medicines, and clothes.

By 1979 (at this time the settlers had been living there from three to five years) this "semi-autonomous" role had reasserted itself in the form of: (1) reintroducing a small area of private fields that were generally planted in peanuts, rice, vegetables, and occasionally sorghum; (2) the male household head's making large cash gifts to family members after the sale of the cooperatively produced cotton; and (3) the reinstatement of a system of harvest gifts whereby a woman could receive from 100-200 kg of grain (after threshing) from her husband's friends; and (4) the male household head assuming responsibility for many expenses which had traditionally been borne by the women.

The re-study showed an elaboration of these trends and the widespread introduction of private grain fields for women. This grain that was produced by the women in the AVV was not used for family food. Rather, almost all the women's grain, including the corn they received as harvests gifts, was sold at or immediately after harvest. If the income from the sale of privately produced crops and other income-earning activities they engage in is considered, the women have probably not experienced a serious drop in their absolute income. What is more significant is the drop in percent of total income of the family that is represented by these private income opportunities and their role in providing family food.

A second set of conclusions relates to the fact that the integration of women into both food production and marketing is neither fixed nor consistent over time, but related to a wide variety of changing variables. Some of the village and household-level factors includes: population pressure, internal patterns of household organization (i.e., the presence or absence of sub-household units such as married sons, older and/or widowed wives and inherited wives from deceased brothers and uncles); labor demands on the cooperatively worked non-food crops, in this case cotton; per capita food production on cooperatively worked fields; and distance from local markets.

This integration of women into grain production may also vary over the life-cycle of an individual woman depending on her child-rearing responsibilities, the relationship of her older male children to the male household head; her relationship to the male household head (for example if she is a wife inherited at the death of an older brother or has been married to the male household head all along); level of education; physical health; the status of her family before marriage; and the presence or absence of local relatives from her own lineage.

It is important therefore for policy-makers to address the following questions:

1. How important are independent grain production, consumption, and marketing activities?

2. What is the role of independent and cooperative production activities for the internal organization of the household? For example, how does it affect the independent economic and social role of a woman vis-a-vis her husband or the ability of the farm family to incorporate married sons and their families?

3. How does the existence of overlapping production and consumption units and the differential integration of women into grain production and marketing affect our understanding of:

   a. women's economic and social role within the society?

   b. the structure and organization of the typical farm household?

   c. the farming system as a whole?

   d. the factors which influence the willingness and ability of farm families to adopt new technology and participate in extension programs?

V. RECOMMENDATIONS

Specific recommendations for extension, evaluation and marketing research are listed below.

1. The Design of Evaluation Research and Farm Monitoring Programs. A comparison of the follow-up study with the baseline research on the settlers' home village has strongly reinforced the crucial need for longitudinal studies focusing on smaller data sets specifically to trace the effect of the project on traditional male and female roles, standards of living, cooperative and private production goals, and the distribution of production that is beyond subsistence needs. This is especially the case in planned settlement schemes where demands for labor and investment during the early years of the project are very high as are stress factors related to adjusting to new social and production environments.

   This type of research will require a modification of traditional methods of survey and micro-level research. The more broadly based farm monitoring programs will need to build into their research design a data set that will be amenable to re-studies and to integration with special studies. In turn, the researcher who conducts the micro-level research will have to modify his or her methods so that the data is comparable to what is being gathered by the larger survey. Other suggestions include: (1) our scheduling more lengthy periods of research to include at least one full calendar year at less frequent intervals (five years, for example); and (2) restricting more short-term inquiries to less intensive and qualitative studies. This type of integration of micro- and macro-level research can help policy makers to be more sensitive to the definition of key measurement and evaluation units such as "household" and to make a more accurate assessment of economic and social impact.

2. The Design of Grain Marketing Research. The integration of micro- and macro-level research can be equally important for studies of grain marketing and marketing decisions. The re-study of the AVV settlers shows that there is significant variation in the factors influencing the decisions of when, where, how much, and by what means to distribute "surplus" grain in different time periods for different members of the family.

3. The Design of Agricultural Policies to Benefit Women. The re-study has underlined the need to pay more attention to the factors which influence the ability and willingness of women to take advantage of new income-earning opportunities, extension programs, and improved technology. Child-rearing responsibilities, age, and position within the

household have an important impact on the amount of time a woman has to devote to private and cooperative agricultural activities. They may also affect her production goals. Any project which fails to consider these very real differences in opportunities, background, and leadership ability in the design of policies and extension programs to benefit women is operating under a false assumption of "homogeneous" woman-kind.

ENDNOTES

1. Onchocerciasis is a disease transmited to humans by the female fly, Simuleum damnosum. The fly carries the larvae of a parasitic worm, Onchocera volvulus, which spreads into the epidermic tissues of the skin eventually reaching the anterior chamber of the eye. Clinical indication of the disease appears only after repeated bites from infected flies. Effects include skin discoloration, itching subcutaneous nodules, and in the latter stages, eye lesions that may result in blindness. The Volta Basin of West Africa is one of the most endemic onchocerciasis areas in the world. A United Nations's survey in the early seventies estimated that nearly 700,000 square kilometers with a population of ten million were affected. Of this number, an estimated one million people were infected and 70,000-100,000 were either blind or suffering serious eye impairments. The OCP covers approximately 700,000 square kilometers of a seven country area including parts of Togo, Ghana, Benin, Ivory Coast, Niger, Mali, and Upper Volta. At the regional level the program includes spraying the infected river basins with a biodegradable organophosphate (abate) in order to bring the population density of the disease vector below a critical level.

2. SECID is a not-for-profit consortium of thirty-four academic and research institutions in seventeen southern and eastern states. The Consortium provides technical assistance, training and procurement services to developing nations, using technical teams composed of faculty members from the thirty-four member institutions.

3. The specific goals of the technical assistance component includes (SECID 1982:4): (1) improving the marketing and distribution of grains for the purpose of providing food security especially to grain deficit areas and during the pre-harvest (hunger) season: (2) assisting OFNACER in its operational activities of buying and selling via an effective pricing and distribution system; (3) determining means of effectively integrating the private sector into the national grain marketing system to optimally utilize scarce resources, capital and entrepreneurship; (4) assisting and advising OFNACER regarding the efficient functioning of supporting infrastructures such as transportation, communication, and storage to stimulate an orderly and economical expansion of grain distribution systems; (5) assisting and advising the Director of OFNACER in policy matters that will enhance the mobilization of savings via producer incentive policies, trade policies, monitoring and analyzing the affects of foreign exchange controls, and proper collection, analysis and utilization of data; and (6) supervising and training local employees in planning techniques and financial accounting procedures such that upon completion of the project OFNACER will possess indigenous personnel to carry out subsequent planning and accounting activities in a timely and effective way.

4. Figures are based on the 1975 Project Identification Report of the Dutch Government for the AVV which estimated a minium food requirement of 2,230 calories per person per day. This is the equivalent of 140 kg cereals and 30 kg legumes per person year including losses during storage (Murphy and Sprey 1980:22). Figures represent the difference between the recorded grain per resident and the recommended 240 kg minimum of cereals.

5. It is very easy to focus on the AVV labor index as a sign of systematic discrimination against women. To do so, however, can divert attention from issues related to the actual participation of women in the scheme. The labor index was, quite simply, a short-term means to control the allocation of river basin lands to small holders and to avoid the lands being colonized by absentee landlords using mechanical cultivation methods. For discussion about the use of weighted labour hours in the analysis of farm management data, see Collinson (1972: 200-202) and Delgado (1979: 87-100).

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