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Senegal

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Valley

A Rainy Season Food Consumption Survey in Guidimaka, Gorgol, and Brakna Regions

Mauritania Agricultural
Research Project II
College of Agriculture
The University of Arizona
Tucson, Arizona

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**A RAINY SEASON FOOD CONSUMPTION SURVEY IN
GUIDIMAKA, GORGOL AND BRAKNA REGIONS**

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Executive Summary

This report presents the findings of a rainy season consumption survey that was conducted in the Guidimaka, Gorgol, and Brakna regions of Mauritania. The primary objective of this survey was to highlight seasonal differences in food consumption which emerged from the dry season report "Farming Systems Research along the Senegal River Valley." Twenty villages were visited over a two-week period in September 1986 and the research was done in conjunction with a farming systems (FSR) reconnaissance survey. Information was collected on a variety of food consumption patterns. Included are food preferences, preparation, purchases, prices, seasonality, food storage, free food distributions, wild foods, specialty foods for childbearing women and their infants, and some of the consumption issues related to health. Information on women's farming activities and vegetable gardens is also included. The findings are summarized below.

Food Preferences

- Sorghum and millet are preferred over rice reflecting shortages in these cereals.
- Meat was preferred over fish probably due to the infrequency with which meat is eaten.

Food Preparation

- Most dishes can be prepared with the whole range of grains even though some cereals (such as maize and wheat) are more difficult to process.
- A hierarchy of dishes is presented based on preparation time.
- Ethnic differences in food preferences and foods consumed are not strong.

Food Purchases

- Rice, tea, sugar, oil and fish are purchased daily.

Food Prices

- Certain cereals are in too short supply in many villages to allow price comparisons
- Prices for rice are slightly higher during the rainy season, have increased over the last six years, and are significantly higher than the controlled price.
- Prices for such imported items as oil, fish, sugar and tea show great variability between villages. The smaller, more isolated villages without their own markets pay higher prices for these goods.
- Although in general prices were higher during the rainy season than during the dry season, as one might expect, differences were not striking.

Seasonality of Foods

- The rainy season is a time of food deficits both due to the depletion of food stocks and the difficulty of reaching the more isolated villages.

- Foods in short supply during the rainy season included sorghum and millet, fresh vegetables and sauce ingredients such as melon seeds, okra and cowpeas. Fish, both dry and fresh, cannot reach many villages regularly due to road conditions during the rains.
- Fresh milk was considered scarce even though the rainy season is traditionally the period with the highest availability.

Food Storage

- Most cereals are stored on the pannicle in mud granaries, wooden storage huts, or houses.
- Storage loss to pests (crickets, termites, rodents) appears to be significant.
- The rate of depletion of food stocks depends not only on harvest size but on the necessity of selling or exchanging cereals to purchase other foodstuffs.

Free Food Distribution

- There is great variability between villages in the frequency and amounts of free food distributions. Only one village was receiving the full quota of donations.

Wild Foods

- Wild foods take on special importance during the rainy season when food supplies are low and fresh vegetables grown in the cool, dry season are unavailable.
- Wild leaves are actively collected during the rains as sauce ingredients, especially the abundant Cassia occidentalis.
- Wild fruits have decreased in availability due to the drought and deforestation but continue to be an important source of food and vitamins near the end of the rainy season. Most important are the fruit of Ziziphus mauritania, Balanites aegyptiaca and Boscia senegalensis.
- A wild grain known as paguiri, brachiaria hagerupii becomes important to the diet when cultivated grains are in short supply.

Specialty Foods

- Few specialty foods are prepared for childbearing women, infants and the ill.

Diseases and Health

- Diarrhea is a yearlong problem of both children and adults. It is especially prevalent in villages without wells. These same villages listed a series of health problems ranging from stomach illnesses to coughs, malaria and skin rashes.
- Guinea worm was cited in two villages.
- Child feeding programs (CAC) were observed in seven of the thirteen villages surveyed. Food donations from the Croisson Rouge combined with the initiative of village women are ensuring the daily feeding of small children.

Women's Farming and Other Productive Activities

- Women of all ethnic groups are farming more than they did previously due to high rates of male outmigration and efforts to supplement reduced harvests.
- Soninke women are active farmers on their own account cultivating a range of crops including peanuts and traditional red rice. Halpulaar women are active vegetable garden cultivators. Peuhl women are farming more than in the past partly in response to decreased milk supplies and incomes. Maure women are now farming as well as weaving mats and selling wild foods.
- Vegetable gardening is largely restricted to the cool dry season. Reasons for not cultivating vegetables during the rainy season included competing labor demands, increased numbers of pests and diseases, and lack of access to seed.

Food Consumption Constraints and Recommendations

-- Consumption Constraints

a. Seasonal Food Shortages

1. Emphasize efforts to regenerate those species of plants most useful as sources of wild food and medicine.
2. Direct replanting efforts toward women (the prime exploiters of these products) and around the household where they can receive intensive care.
3. Integrate wild food species into village level water harvesting, windbreak, vegetable garden borders, etc. projects.
4. Promote indigenous crops to prolong the vegetable growing season since they are preadapted, benefit from existing conservation techniques and have a well established market.
5. Conduct more seminars on vegetable gardening to elicit constraints as well as instruct women's cooperatives.
6. Investigate possible improvements in storage techniques.

b. Yearlong Food Shortages and Problems

1. Encourage the formation and maintenance of child feeding programs.
2. Explore Food for Work programs for agroforestry projects aimed at water harvesting and conservation.
3. Encourage the incipient appearance of cooperative buying groups and boutiques to provide a more dependable food supply.
4. Focus on the problems of small livestock raising around the household to supplement milk supplies.

— **Time Constraints**

1. Cooperative buying and selling are recognized as time savers and should be promoted.
2. The cooperative purchase of mills could be encouraged.
3. Further research on rural women's time use should precede any planned intervention.

— **Women's Production Constraints**

1. Conduct thematic research into women's changing access to agricultural lands as a response to environmental change.
2. Research on minor crops should be pursued, including improved varieties of sauce crops.
3. A study should be conducted to determine the relationship between increased labor demands on women and reduced time spent in food preparation.

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I. INTRODUCTION

This report presents the findings of a consumption survey conducted during the rainy season in the Guidimaka, Gorgol, and Brakna regions of Mauritania. Twenty villages were surveyed over a two-week period (see Table 1). This survey was carried out in conjunction with a farming systems (FSR) reconnaissance survey, and conducted under the auspices of the Mauritanian Agricultural Research Project II. This project is supported by USAID/Nouakchott and USAID/Office of Nutrition, Bureau of Science and Technology with cooperation from the Centre National de Recherche Agronomique et de Developpement Agricole (CNRADA). The primary objective of the rainy season survey was to highlight seasonal differences in the strategies and constraints of farmers in the Senegal River Valley. These data augment, verify and refine the findings of the dry season survey presented in the first report "Farming Systems Research along the Senegal River Valley." The study of food consumption was similarly focused on seasonal differences and explores some of the seasonal constraints suggested in the first report, "Food Consumption Survey in Guidimaka, Gorgol, Brakna and Trarza Regions." Many of the results which emerged from the dry season survey were replicated and confirmed during the rainy season. This high degree of concurrence demonstrates the replicability of the reconnaissance methodology.

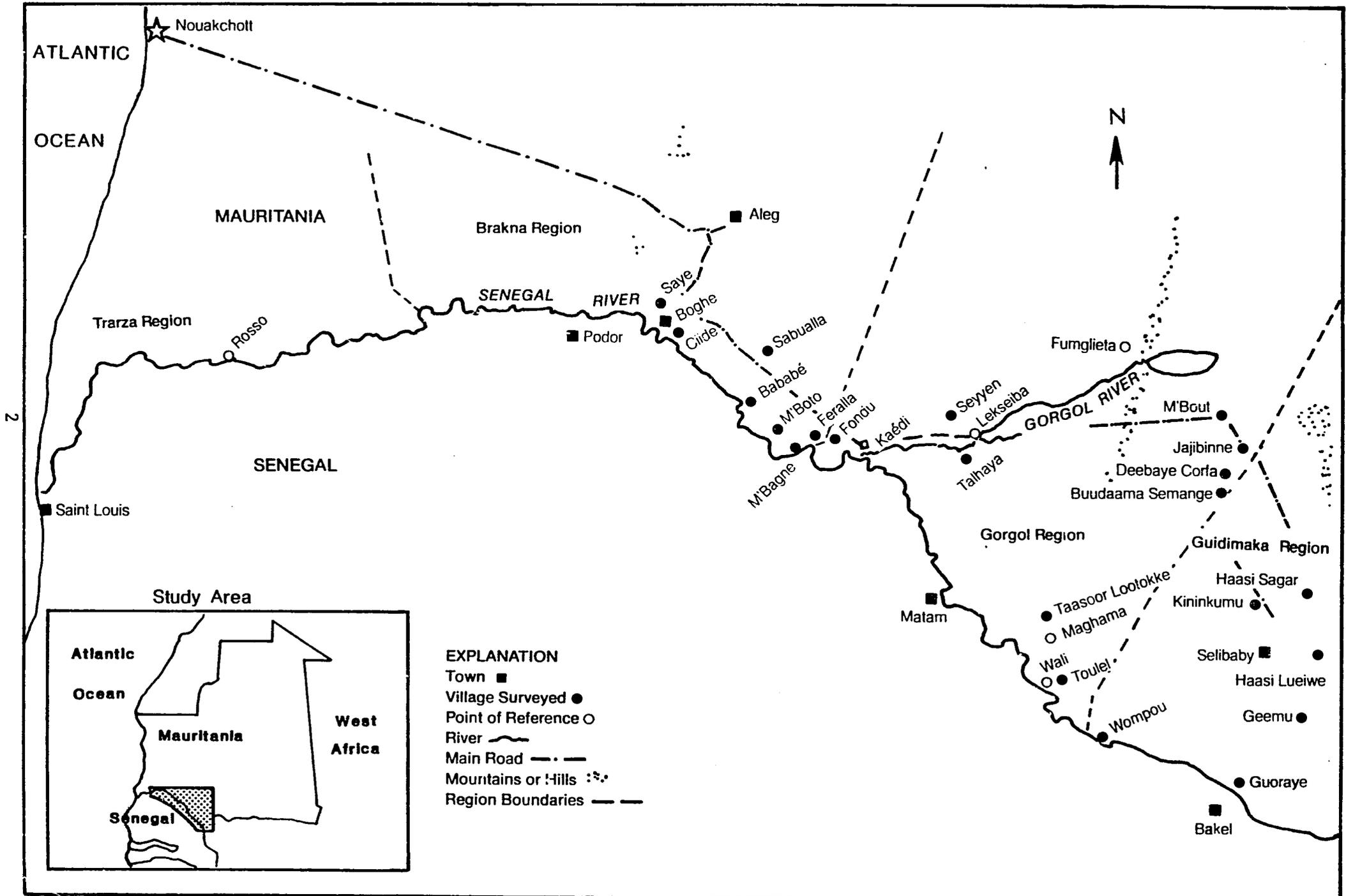
A. Methodology

The dry season consumption survey had elicited suggestions of food shortages particularly acute during the rainy season when transport is limited and stored food stocks are low. The rainy season survey was designed to explore these issues, as well as verify and amplify the basic patterns of food preparation, preferences, and consumption outlined in the earlier study. Information on women's productive activities was also collected, since the food consumption survey was undertaken with groups of women.

Further review of secondary sources was undertaken before the survey. Beyond the studies mentioned in the earlier report, especially the RAMS surveys of food, nutrition and health, other important sources used were: Smale's report on Women in Mauritania, and an unpublished report focusing on vegetable production conducted by AGRES II.

The topical list used in the dry season survey was refined and somewhat shortened. The average interview lasted approximately two hours, and was designed to correspond with the farmer interviews being conducted at the same time. Certain issues were pursued in somewhat more depth to allow seasonal comparisons (such as the importance of wild foods). Tables were again constructed from field notes data to allow comparison across villages and surveys.

Interviews were conducted by two female researchers with groups of village women. These were not the same researchers as those who conducted the dry season survey. A test interview was also conducted by one researcher in a village not included in the general FSR reconnaissance survey (Silla). The two researchers worked together in the next two villages to systematize the methodology, and then conducted subsequent interviews separately. Interpreters, when necessary, were drawn from the villages themselves and were comprised primarily of students (male and female). The size of the group ranged from four or five women up to 50 or more. Again as in the earlier survey, the data are generalizable at the village level, rather than the household level. Issues appropriate to further thematic research on household consumption patterns as well as to women's productive activities (by ethnic group) did emerge.



ATLANTIC
OCEAN

MAURITANIA

Brakna Region

Trarza Region

SENEGAL

Gorgol Region

Guidimaka Region

Study Area

Atlantic
Ocean

Mauritania
Senegal
West
Africa

EXPLANATION

- Town ■
- Village Surveyed ●
- Point of Reference ○
- River ~~~~~
- Main Road - - - -
- Mountains or Hills : : : :
- Region Boundaries - - - -



2

Nouakchott

Saint Louis

Aleg

Saye

Boghe

Podor

Rosso

SENEGAL RIVER

Sabualla

Bababé

M'Boto

Feralla

Fondu

M'Bagne

Kaédi

Seyen

Lekseiba

Talhaya

Fumglieta ○

M'Bot

Jajbinne

Deebaye Corfa

Buudaama Semange

GORGOL RIVER

Matam

Taasoor Lootokke

Maghama

Wali

Toule

Wompou

Haasi Sagar

Kininkumu

Selibaby

Haasi Lueiwe

Geemu

Guoraye

Bakel

Villages Surveyed

| Date | Village | |
|--------------|---|-----------------------------------|
| September 7 | Fonndu (Foundou) | Gorgol |
| September 8 | Seyyen (Seyyene) | Gorgol |
| September 9 | Babaabe (Bababe) Sabualla | Brakna Brakna |
| September 10 | Clide (Thide) Saye (Saye) | Brakna Brakna |
| September 11 | Mbooto (MBoTo) Garalol | Brakna |
| September 14 | MBout Jajibinne (Diadiabine) | Gorgol Gorgol |
| September 15 | Deebaye Corfa (Debaye Chorfa) Buudaama Semangə (Boudama Semangue) | Gorgol Gorgol |
| September 17 | Geemu (Guemou) | Guidimaka Tulel (Toulet)Gorgol |
| September 18 | Haasi Sagar (Hassi Chagar) Wompu (Wompou) | Guidimaka Guidimaka |
| September 19 | Suufi (Soufi) | Guidimaka |
| September 20 | Kininkumu (Kininkoumou) Taasoor Lootokke (Tassor Lotoke) | Guidimaka Gorgol |

NOTE: Halpulaar spellings of village names have been used throughout this report except in the case of Mboot. Within the parentheses are the French spellings used in the first report or on maps.

NOTE: All page references which follow refer to the dry season report, "Food Consumption Survey in Guidimaka, Gorgol, Brakna and Trarza Regions."

B. Content of the Report

The information presented in this report is organized under three basic headings. The first and major section describes food consumption patterns. It includes discussions of food preferences, preparation, purchases, prices, seasonality, food storage, free food distributions and wild foods. Also discussed are specialty foods for childbearing women and their infants, and some of the consumption issues related to health.

A second section discusses women's involvement in agriculture and other productive activities. This section is organized by ethnic group, rather than by region or village, because suggestions of differences in the activities of women of the various ethnic groups emerged from the survey. These contrasts are only outlined in this report, and many of the constraints and changes which are affecting women merit further study. Many of the problems facing women farmers, such as high rates of outmigration by men, however, cross-cut ethnic distinctions. A short section on vegetable gardening is also presented, focusing on why so few vegetables are grown during the rainy season.

These discussions are followed by a section on food consumption constraints and recommendations for possible solutions and further research. Information included in the appendices include: the topics of inquiry for the consumption survey; the data summaries of the results of the survey; a refined list of gathered foods; and a table of food prices by village.

II. FOOD CONSUMPTION PATTERNS

A. Food Preferences

The rainy season survey found a marked preference for sorghum over rice, with millet listed generally as a secondary preference. This contrasts with the earlier survey which found few differences in grain preferences (p.5).

The most frequently mentioned variety of sorghum was fallah (Seyyen, Sabualla, Mbout, Buudaama Semange, Taasoor Lootokke, Guemmu, Suufi, Kininkumu, Silla). This is in general considered preferable to the variety known as same although same was mentioned in four villages as the grain of preference (Saye, Babaabe, Cilde, Garalol). A variety of sorghum known as sewil, which has a small white grain and is the most costly, was mentioned in only one village as being preferred. The women noted that sewil is more prone to bird damage in the fields (as noted in the first report) and thus same was their staple and their preference.

This confirms the general impression that cereal preference is in many ways an expression of productivity - people prefer what grows well. This reason for preference of sorghum was cited in five of the surveyed villages (Haasi Caagar, Suufi, Geemu and Mbooto).

Other preferences were based on taste (p. 5), familiarity, ease of preparation (Babaabe, Geemu, Taasoor Lootokke), and variety of dishes that can be prepared with the preferred cereal (Cilde, Garalol). Sorghum was also valued for producing a greater quantity of food per unit measure (p. 5) than do millet or rice (Taasoor Lootokke, Buudaama Semange). People fed on sorghum and millet are also thought to be stronger (perhaps better nourished, p. 5) than those who eat mainly rice (Buudaama Semange).

Malze was considered difficult to process (Kininkumu, Babaabe, Silla, Fonndu) but valued for its range of preparation techniques. Not only can it be adapted to all common recipes (see below) but it can also be eaten fresh boiled and made into a variety of cakes. The difficulty of pounding malze was cited in villages without working power mills (Kininkumu, Silla).

Wheat was never mentioned as a preferred cereal, and one village stated that it was their least preferred grain. They were eating it, however, because it came to them free through food donations (Saye). Others noted the difficulty of processing wheat by hand (Seyyen, Saye, Mbooto).

The one wild grain which is widely exploited (paguirj, p.7) was also considered very difficult to process. Not only is it difficult to separate the very small grain from vegetable matter, but the seeds must be pounded at least two or three times to process them into usable flour.

Although rice is being consumed by almost every village as a midday meal in this season, it was not mentioned as a preferred grain. In one village, however, they stated that they considered rice in a different category as the other grains, and so not comparable (Wompu). Its ease of preparation was noted in one village (Silla) but its taste was not preferred (Silla, Taasoor Lootokke), and it is considered expensive (Taasoor Lootokke). Nonetheless, whereas most cereals are very difficult to buy in the market during this season (see below), rice is widely sold and was cited as a food that would be purchased if more money was available.

Overall a marked preference for locally grown grains (especially sorghum) was expressed. This may, in part, reflect a seasonal shortage of these grains as compared to wheat, rice and maize. As evidence of this tendency there is considerable overlap between the foods listed in short supply during the rainy season and the foods listed as preferences.

Meat as opposed to fish was mentioned in all but two villages as the preferred source of protein. This contrasts somewhat with the earlier findings which found no marked preference (p. 5). The dry season survey, however, included more fishing villages which might explain this difference. Although goat and sheep were mentioned most frequently (Mbout, Buudaama Semange, Fcundou, Seyyen), beef was also mentioned frequently alone or in addition to small ruminants (Haasi Caagar, Babaabe, Suufi, Ciide, Mbooto).

Only in three villages was fish (especially fresh fish) mentioned as preferred. Two of these villages were predominantly Soninke (Tulel, Wompu) and the other identified the Soninke part of the population as preferring fish (Mbout). This may reflect ethnic differences in food preferences. Fresh fish was valued over dried but supplies are erratic.

The expressed preference for meats may less reflect overall preferences than the infrequency with which meat is eaten. Dried fish is consumed on almost a daily basis (but see discussion of seasonal food availability), while meat is eaten very rarely. One village of herding Peuhls said they only eat meat on special occasions (Taasoor Lootokke).

Meat was mentioned in every village as a food they would purchase if they had more money (p. 5), although fish appeared frequently as well. Other foods included grains of all sorts, and milk (Deebaye Corfa, Fonndu, Seyyen, Sabualla, Saye). This list is very similar to that elicited during the dry season survey.

Milk seems to have formed an important part of the diet, especially during the rainy season, and its relative scarcity in recent years was noted. Fresh milk is in low supply (see discussion of Peuhl women's activities) and must be supplemented principally by powdered milk (a part of many free food distributions), some canned and long-life varieties.

B. Food Preparation

Most dishes, rather than adapted to specific grains, can be prepared using the whole range of grains whether domestic or imported. The effort of adapting of crops such as maize, rice and wheat to familiar recipes may account for their lesser appeal.

A hierarchy of dishes can be constructed which reflect the extent of grain processing involved, and thus the time required in the absence of a mill. Sauces and other ingredients are similar for all grains, although as noted in the earlier survey, rice must be accompanied by sauces (usually oil at a minimum) whereas other grains may be eaten plain if necessary (p. 5).

The simplest dish to prepare is simply to boil the whole grain with salt. The dish known as Gossj (Pulaar) or Sombj (Soninke) is usually accompanied by sugar and milk. In Soninke areas, this dish is often prepared using the traditional red rice grown by the women farmers.

Slightly more time consuming is a dish made of cracked grain known as gniri (Pulaar) or inethle (Soninke). This may be served with a variety of sauces. This dish is more commonly eaten in the morning or sometimes at midday, perhaps because it requires less time to prepare than the evening couscous.

The most common dish is couscous which is eaten at almost every evening meal. Couscous requires a finer flour than does gniri and thus takes longer to hand pound. Many women combine the preparation of the two dishes. After an initial pounding the cracked grains are sifted from the flour. Thus both gniri and couscous are produced. Maize is rarely processed into couscous, especially in villages without mills, and is often eaten in this form. An even more finely pounded grain is made into bassi (Pulaar and Soninke).

Sauces are virtually the same for all modes of preparation, but since couscous is the most common form the following sauces were abstracted from couscous recipes. Sauce ingredients vary by seasonal availability as well as affordability. During the wet season, couscous sauces feature green leaves (especially a wild green leaf known as oulo - see Appendix C). The leaves of other wild foods are also eaten as well as the leaves of the cowpea (haco niebe). Cowpea leaves are not yet in great abundance (September), however, due to the delays in planting and other problems with production. In combination with leaves or in other combinations, dried or fresh fish, peanuts, cowpeas, melon seeds and other seasonings such as canned tomatoes, black and red pepper, maggi cubes, and oil are included. Couscous with milk may form the evening meal in itself, or milk may be added to the couscous when the other sauce is gone. An important ingredient in the couscous flour itself is the addition of dried pounded baobab leaves. These are said to make the couscous easier to swallow.

In many villages the morning meal consists of leftovers from the couscous of the evening before (Deebaye Corfa, Haasi Caagar, Suufi, Kininkumu). The porridge (gniri) with sugar and milk was also mentioned as a morning meal as was bouilli a more liquid version of the same porridge. In some villages, breakfast may consist of tea or coffee and bread at 7-8 a.m., followed by a larger meal at 10-10:30 a.m. of couscous or bouilli (Tulei, Wompu, Taasoor Lootokke, Silla, Fonndu, Mbooto). Others may only drink coffee (Fonndu - see strategies to deal with food shortages).

Rice is consumed boiled at the midday meal with a variety of sauces but most featuring dry fish. Sauces of oil, tomatoes and okra were valued as was meat. Cowpeas were not frequently mentioned as being eaten plain (nire) or as a sauce ingredients. This reflects a scarcity of cowpeas during the wet season, and their high price on the market.

Ethnic differences in foods consumed and prepared were not strong. Maure women expressed a greater desire for meat (Mbout), Soninkes for fish. Peuhl women place more dependence on milk (Buudaama Semange, Taasoor Lootokke) and eat it at almost every meal. Soninke sauces feature peanuts, a crop which women themselves cultivate.

Ethnic differences which may have existed in the past have most probably been blurred by the limited availability of many food stuffs. People are eating what they can get, and in the contemporary period availability is more a function of accessibility by transport and purchasing power than a question of production or regional preference.

C. Food Purchases

The list of daily food purchases confirms the findings of the dry season survey (p. 7). The most noticeable difference between seasons is the complete absence of vegetables in the rainy season (see below). Tea and sugar were mentioned in all villages as a daily purchase and are available in all villages.

Rice was most frequently mentioned as the cereal purchased on a daily basis confirming the findings of the dry season survey (p. 7). The preference for buying rice in bulk was frequently expressed. Many women, however, could only amass enough capital to buy grains in sacks with remittances sent from outside the community and mostly depended on small daily purchases, exchanges and credit.

D. Food Prices

Price comparisons with data collected in February (Appendix G) showed some but not significant differences. This may reflect the fact that for some villages both periods are times of relative food scarcity. In February, they are waiting for the walo harvest; in September they are waiting for the djeri harvest.

Most cereals were in too short supply to elicit a large enough sample of prices for comparison. Most villages had no, or practically no, sorghum, millet, wheat or maize for sale during this period. This is not only a significant point in terms of pricing, but of food availability and shortages as well. What is available comes from larger commercial centers and merchants.

Rice is the most frequently purchased and most readily available grain. Prices for rice ranged from 30-40 UM per kg., with an average price of 35.6 UM. This is only slightly higher than the price elicited during the dry season survey of 33.6 UM (averaged across five villages). The village for which prices exist for both seasons reported the same price in both seasons (Mbooto).

These prices are all significantly higher than the controlled price of rice of 25 UM per kg. set by SONIMEX in July 1984 (see ABT Assoc.). They also show a marked increase from 1980 when the average price of rice in the Gorgol, Brakna and Guidimaka region was only 20 UM/kg. If rice growing farmers can mill the rice themselves, they could certainly fetch a better price on the open rather than the government market (Saye).

The highest price for rice (40 UM/kg.) was consistently paid in villages which lack their own markets (Sabualla, Buudaama Semange, Taasoor Lootokke, Jajibinne, Deebaye Corfa, Haasi Caagar, Sinkumu). Although rice was available in these villages through small stores (boutiques) and petty traders, the higher prices undoubtedly reflect additional middlemen costs and markups.

Sorghum (fellah) prices were remarkably consistent at 25 UM/kg. with one village in the Guidimaka quoting an unusually low price of 17 UM/kg. (Tulei). This village was purchasing food from Senegal, but relative prices for Senegalese cereals are unknown. Although samples were small, the price for sorghum is higher than an average price of 21.4 UM/kg. collected during the February survey. The village for which prices were available for both surveys quoted the same price of 25 UM/kg (Wompu). A higher price during the rainy season would make sense in terms of the timing of the sorghum harvest, but one might expect a sharper difference than what exists.

Sorghum prices have risen since the 1980 survey of RAMS. They quoted a price of 15.3 UM/kg. for the three regions included in this most recent survey, with an overall average rural price of 19 UM/kg. The increase in price of sorghum, however, is less striking than the increase in rice prices.

Millet was in even shorter supply, but where available, the price ranged from 15-25 UM/kg (sample of five villages). The average price was 17.4 UM/kg. This is actually somewhat lower than the dry season average of 18.7 UM/kg, although the range from 15-25 UM/kg was the same for both seasons (see Appendix G of first report). The village for which prices were available for both periods quoted a price a few UM higher in the rainy season (Wompu).

Again prices are significantly higher than the import parity price of 14 UM/kg. set for areas outside of Nouakchott, and more in line with the suggested price for sorghum of 22-23 UM per kg. by 1987 (Abt Associates).

Wheat is rarely purchased on the market in the surveyed villages. Most of the wheat consumed came in the form of food donations.

Prices for fish showed great variability, even within villages. Prices were often quoted in terms of a range (eg. 60-100 UM/kg) even for this particular period. This must reflect the erratic nature of the supply to most villages. Dried fish are more expensive per kilogram than fresh fish. Dried fish are of course lighter, and go further in sauce preparation than do fresh fish. The price range for dried fish was very large from 60-200UM/kg. with an average price of 135 (sample of 12 villages). This is higher than a rough average of 100 UM/kg collected during the February survey.

Averages for prices of fish must be read with caution. Different types of dried fish command different prices, and there is considerable variability of quality and thus price even within these types. When combined with variable supply, average prices are suspect. Nonetheless, in gross terms, the higher price for fish during the rainy season must reflect the problems of transport and delivery cited in the earlier report (p. 6).

Prices for other imported items such as sugar, tea and oil also showed great variability across villages during the rainy season survey. Sugar prices ranged from 80-130 UM for a 1 kg. box. Sugar prices did not vary by the presence or absence of a market, but most sugar is sold in small boutiques or by petty traders throughout the area. The same is true for tea which ranged from 60-100 UM per packet, with no discernible regional or village patterns.

Prices for cooking oil ranged from 80-150 UM/litre with an average price of 109 UM. None of the villages quoting a price of 120 UM/l. or higher have permanent markets. As with rice, oil is a frequently consumed and purchased item and thus has a high demand pressure throughout the year. The demand may be even stronger during this period when other food stuffs are less available and thus more rice dishes are prepared. The possibilities for middlemen profits (and thus increased cost to the consumer) are perhaps greater for these items.

Dried milk powder was priced at 100 UM/kg in three out of the five villages for which prices are available (only one village quoted a price as high as 160 - Garalol). These prices are comparable to those collected in February. Meat prices, as fish, showed a great range of variation from 100-180 UM/kg.

Although some price differences did exist between the two survey periods, they were not always as striking as might be supposed. A part of this may reflect the fact that both surveys were conducted during "hungry" periods (although different foods were in short supply and different villages experienced shortages) while another part is undoubtedly due to the small sample of prices represented. Another important part, however, must reflect distortions in the market. Prices in these rural areas are affected by relative distances to supply, shortage and cost of transport, isolation in rainy season, lack of storage and credit facilities in many smaller villages and by many smaller merchants (RAMS 1980). In general, the smaller and more isolated a village is the higher the prices it pays. But also the more variable a price it may pay. This erratic nature of supply has a significant impact on many villagers whose total food consumption during this season is based on purchased items.

E. Seasonality of Foods

As suggested in the dry season survey (p. 7-8), the rainy season is a time when food stocks are very low, and goods have difficulty reaching some of the more isolated villages. Only the village of Mbooto maintained that the period before the walo (recession agriculture land) harvest was a hungrier period than the rainy season. In Mbooto they agreed with other villagers that stocks were low in both seasons, but felt they had better access to rice during the rainy season. Little seasonal variation was found in the dishes prepared, although the choice of grains and sauce ingredients vary by availability.

A long list of foods in short supply emerged from the wet season survey. Many villages noted that cereals in general were scarce (Tulel, Deebaye Corfa, Haasi Caagar, Suufi, Seyyen), although several mentioned that rice was available but considered it costly (Seyyen, Jajibinne). Others reported that even rice supplies were low (Wompu, Haasi Caagar, Suufi, Ciide). Sorghum was mentioned specifically in four villages (Mbout, Wompu, Taasoor Lootokke, Babaabe) and millet in three (Buudaama Semange, Taasoor Lootokke, Fonndu). Cowpeas also were scarce in some areas due to late plantings caused by delayed rains (Buudaama Semange, Taasoor Lootokke, Fonndu, Babaabe) and considered very costly.

Fresh vegetables (European) are available only in the cool dry season and so were mentioned as lacking during this season (Mbout, Wompu, Buudaama Semange, Ciide, p. 6). Other sauce crops in short supply included melon seeds (pasteques) (Taasoor Lootokke, Fonndu, Babaabe, Ciide), okra (Taasoor Lootokke), peanuts (Kininkumu, Fonndu, Jajibinne) and cowpea leaves (Fonndu). This scarcity of fresh cultivated foods is compensated in part by the increased gathering of wild foods during this period (see below).

As discussed above and in the earlier report (p. 6), fish has difficulty reaching many villages during this season. The scarcity of fish in general was noted (Deebaye Corfa, Suufi, Silla, Geemu), both dry (Buudaama Semange, Kininkumu, Ciide) and fresh (Buudaama Semange, Tulel, Wompu, Ciide). Most of the fish is coming from outside the area due to diminished supplies from local fishermen. Both dried and fresh saltwater fish come from Nouakchott, and dried fish comes from as far as Nouadibou. Only one large village surveyed was well supplied with fresh fish (Mbout). They were receiving the daily catch from the Fom Gleita dam.

People in the more isolated and smaller villages traveled to larger centers to purchase dried fish or got occasional visits from "traveling salesmen" (Buudaama Semange, Silla). Even those villages in Guldamaka situated near the river depended on outside sources of fish. Fresh fish arrived by boat in Tulel less than once a week with the

supply lasting only 3-4 days.

Milk was mentioned as being scarce in four villages despite the fact that fresh milk supplies are supposedly at their highest during the rainy season (Buudaama Semange, Haasi Caagar, Seyyen, Geemu). Perhaps this reflects a decrease over the longer term rather than seasonal variation. The widespread use of powdered milk also affects the demand for milk.

F. Food Storage

Food shortages reflect the inability of most farming households to produce enough cereal supplies to carry them from one harvest to the next (p. 7-8). In most cases food stocks in storage were completely depleted at the time of this survey. Some of the cereals listed as still in storage were being kept as seed, others had been purchased on the market by those who could afford to buy in bulk. Overall in this season, as one woman put it "my granary is my pocket". Not only are supplies minuscule, but all must be purchased.

Methods of storage confirmed earlier findings (p. 7-8). Sorghum and millet are primarily stored on the panicle and processed as needed. This may function to spread out the labor requirements of threshing and winnowing over the duration of the stocks. When grains are to be sold, they may be processed in the fields right after harvest with the men threshing and women winnowing (Sabualla).

Most grains are stored in granaries or bancos (adobe storage bins) within the house. A common form of granary is called sakeje (Pulaar) and consists of round storage huts with a raised floor, woven stick walls, and thatched roof. Peanuts, cowpeas and rice are more frequently stored in bags (p. 7).

Storage loss to pests appeared to be significant. Most commonly mentioned were crickets, termites and rodents (both rats and mice, p. 8). Termites can attack the bottoms of bags and quickly eat through the grain.

There was considerable variation in the time when the stored goods had been depleted. Each village noted that the depletion of stocks varied widely from one household to the next, depending not only on production but also amounts that had to be sold to repay debts or meet other cash needs. Some households depleted their stores within two months of the harvest (Garalol) while others still had small amounts in stock (Mbout, Tulel, Taasoor Lootokke, Mbooto, Babaabe, Clide, Garalol, Geemu). The rice producing village (Saye) depleted its rice stocks around July-August. The average for other grains seems to be about 3-4 months before the September survey (June or July).

G. Free Food Distribution

As suggested in the earlier report (p. 8), the frequency and quantity of free food distributions varied greatly from one village to the next. Again, one village had received no food donations during the last year (Suufi), while the majority had received distributions 2-3 times during the preceding year (Seyyen, Mbooto, Wompu, Taasoor Lootokke, Clide, Garalol, Jajibinne, Deebaye Corfa, Haasi Caagar, Silla).

The amounts of free food distributed also varied. Only one village received approximately the full quota (50 kg. wheat, 5 kg. powdered milk, 2 l. oil per household each 55 days) but was serviced by both the Croisson Rouge and CSA (Commisariate de la

Securite Alimentaire) for a total frequency of 4-6 times a year (Mbout).

Many villages received less than one-quarter of the allotted ration at each distribution, at a frequency of only 1-3 times a year (Seyyen, Buudaama Semange, Taasoor Lootokke, Jajibinne, Geemu, Suufi). Not surprisingly, but unfortunately, these villages tend to be the most isolated and poorly serviced villages in relatively greater need than the larger centers. Food scarcity is a function of low production and buying power but also of lack of availability.

H. Wild Foods

Wild foods take on special importance during the rainy season when food supplies are low and the fresh vegetables grown in the cool, dry season are unavailable. Although most of the fruits collected from trees are not ripe until the end of the rainy season, the leaves of trees and bushes are actively exploited throughout this period. These leaves are eaten on a daily basis in sauces, and constitute the only source of vitamins derived from fresh foods.

Cassia occidentalis (oulo in Pulaar) grows very abundantly during the rains and has, according to farmers, increased in supply with the drought by invading otherwise abandoned lands. The daily consumption of oulo was noted in most of the villages surveyed (Mbooto, Buudaama Semange, Tulel, Wompu, Taasoor Lootokke, Silla, Foundou, Seyyen, Saye, Mbout). Due to its abundance, most women gather the weeds themselves, either immediately around the village, on their trips to gather firewood, or as they return from working in the rainfed fields. Some oulo does get exchanged, primarily with nomadic and Maure women. The rate of exchange was two large handfuls of leaves (enough for one meal) for half a kg. of cereal. Some is also for sale in the markets of some of the larger towns (Fonndu, Mbout, Wompu). Only one village (Sabualla) stated they do not eat oulo because it causes stomach aches.

Other wild leaves (see Appendix C for names) are similarly gathered but are generally of less importance than the cultivated leaf of the cowpea (haco Pulaar). This year, the wild foods are filling in the gap left by the late and small cowpea growth. The leaves of the baobob (lalo in Pulaar) are also gathered, forming an important ingredient in couscous when dried and pounded. The diminishing number of baobob trees, however, has led to some dependence on imported supplies from the Casamance region of Senegal (Silla). Another form of lalo derived from a grass (takiette terabbe in Pulaar) can also substitute.

Those villages with irrigated perimeters (Saye, Wompu) indicated that some of the leaves they gather now grow on the edges of the perimeters, although during the rainy season they still ranged further in search of edible leaves. The supply of these valuable foods could be adversely affected by the use of herbicides on the perimeters, and should be taken into account.

The fruits of wild trees are less available since the drought and with the effects of deforestation (p. 7). They continue to be actively exploited where available, and are valued as a food source especially for children. Nomadic women who range more widely bring these wild foods into markets for sale.

Most commonly mentioned was the fruit of Ziziphus mauritania (Jaabe in Pulaar and jujube in French, p. 7). The tree not only yields small orange fruits but is used for medicinal purposes as well. The small yellow fruit of Balanites aegyptiaca (murtode in

Pulaar, mureau blanc in french) is also valued (p. 7). The fruit is eaten, the nut can be ground and made into soap, and the tree has medicinal uses. Many of the Balanites have survived the drought, but are more dormant and thus less productive than before. The third most important fruit tree is Boscia senegalensis (Guidjile in Pulaar). These fruits are sold on the market at the rate of 10-20 UM/kg (Babaabe, Ciide). The fruit of the baobab (pain du seinge) is valued as an ingredient in drinks and as a treatment for diarrhea. Other trees used for food and medicine are listed in the appendix.

Some wild tubers and grains are also gathered. One water plant is especially valued (Nymphaea lotus). The root resembles a potato (tabbe in Pulaar) and the flower produces an edible seed (dayrrii in Pulaar). Supplies are greatly diminished. Wild grains included brachiarla hagerupii (paguiri in Pulaar) and digitata exilis commonly called fonio.

Attitudes about paguiri varied. It was a valued food in Mbooto, and each household collected up to two or three sacks last year. But paguiri was not eaten in many villages even where readily available. Mentioned were the opinion that paguiri is a poor person's food eaten only when there is no cultivated grain available (Buudaama Semange), that its prime use was in distracting birds away from cultivated cereals in the fields (Mbout), that its taste is not pleasant (Tulel), or that it was seen as an ethnic specialty of the Maures (Taasoor Lootokke). Paguiri like other grains can be stored and eaten when food supplies are at their lowest. It was thus mentioned as a current part of the diet both during the dry season and the rainy season survey, both times of diminished food availability. It may also receive differing emphasis depending upon the year and the relative success of the harvests. Paguiri offers a good example of the flexibility and adjustments villages and households can make in finding alternative food sources.

The relative importance of wild foods to the diet varies by village, by household and by ethnic group. Some interesting, although still sketchy, patterns seem to emerge. It is not surprising that the more isolated villages seem to depend more heavily on wild foods since fewer foodstuffs are available to them (Seyyen, Sabualla, Mbooto, Taasoor Lootokke). These are also villages with infrequent food donations and with minimal access to credit for food purchases. Despite diminishing supplies, women of these villages must invest the extra time to supplement scarce food. Peuhl and Maure women seem to be more active gatherers of wild foods (both quantity and variety) than the Halpulaar or Soninke, and more likely to sell these products. This may be a function of the relative isolation of their villages, their lesser involvement in agriculture, as well as nomadic and cultural patterns.

1. Specialty Foods - Childbearing women, infants, and the sick

As suggested in the earlier survey (p. 6), few special foods are designated specifically for childbearing women or their infants. Ingredients are limited and time spent in food preparation is already significant.

Bouilli (the liquid porridge often made with rice, milk and sugar) has widespread use. It is a common weaning food, given to children of non-lactating mothers, to women after delivery, and to the sick. Only in one village were pregnant women told to avoid bouilli for fear it would bloat the foetus and make delivery difficult (Mbooto). Bouilli is a common treatment for diarrhea, especially when prepared with rice (Geemu, Buudaama Semange, Deebaye Corfa, Kininkumu, p. 9).

Just after delivery, women are supposed to be given meat soup (with the meat purchased by the husband) but many said they couldn't afford the ingredients nowadays and ate only normal foods or bouilli.

Few food taboos exist thus confirming the results of the previous survey (p. 6). Moslem taboos against eating certain meats of course exist. Pregnant women are forbidden to eat rabbit meat (mentioned in Fonndu and Mbout but considered widespread). Other responses elicited with these questions concerned foods that are considered unhealthy rather than tabooed. Both pregnant women and children were said to crave dirt indicating mineral deficiencies (Seyyen, Ciide, Garalol, Jajibinne, Suufi). Pregnant women are widely told to avoid too much salt, perhaps through the influence of the prenatal clinics run by the PVI which monitor blood pressures (Kininkumu, Mbout, Tulel). Children are often not allowed to drink tea (Babaabe, Ciide, Mbooto) and eat red peppers (Ciide, Garalol, Suufi). Some village women said that cowpea leaves gave their children diarrhea and so they did not feed them this sauce (Garalol, Jajibinne, Kininkumu).

Norms for the duration of breastfeeding were 18-24 months although one village reported 36 months (Haasi Caagar). Some children are weaned as early as 5-6 months due to another pregnancy. Many women start supplementing breastmilk at the age of 7-8 months, but some women wait until weaning. These points confirm the findings of the dry season survey (p. 9). Beyond milk and bouilli, no special weaning foods are prepared. When they can sit up, children are fed small amounts of adult food from the common bowl. Herding villages placed more emphasis on the importance of fresh milk as a weaning food and as a food for babies of non-lactating mothers (Seyyen, Taasoor Lootokke). The sage femme interviewed in Mbout did not consider non-lactation as a major problem, although there may be many women with inadequate supplies of breastmilk. For orphans or thin children, she prescribed milk whether fresh, longlife (UHT), powdered or concentrated.

Children are usually weaned abruptly, some mothers taking the child to a marabout who administers a potion to make the child reject the breast (Mbout).

J. Diseases and Health

In general, diarrhea was considered a yearlong, rather than a seasonal, problem of both children and adults. It was mentioned more frequently in villages with no wells which depended on marigot water for their rainy season supply (Sabualla, Taasoor Lootokke, Buudaama Semange, Seyyen and women from outlying villages around Mbout).

These same villages listed more health problems in general ranging from stomach problems to colds and coughs (including whooping cough), malaria and skin rashes. The incidence of conjunctivitis (apolo in Pulaar) is high among children in many villages but especially widespread in Buudaama Semange. The more isolated villages suffer from a combination of factors negatively affecting their health including unsanitary water, no infirmaries within easy reach and food deficits.

Guinea worm was a problem in two of the surveyed villages (Geemu and Suufi). The treatment commonly used is to heat a knife and apply it to the boil.

Treatments for diarrhea were similar to those elicited during the dry season survey (palm du seinge, bouilli, biscuits dipped in milk, p. 9). Some of the wild foods used in treatment are listed in the appendix. If the diarrhea becomes very severe, women made an effort to visit the nearest infirmary. A great faith seemed to be placed in the efficacy of treatment from the infirmaries, but medical supplies are often low and access may be difficult (Taasoor Lootokke for example must go to Maghama at a distance of 24 km.).

Of the villages surveyed, seven had PMI's (maternal and infant care; two with traditional midwives who had received some training), 3 had dispensaries (two others had the dispensary building but no staff), and 10 had no healthcare facilities. Some had access to services in neighboring villages.

A very encouraging finding concerned the child feeding programs organized under the auspices of the CAC (Centre d'Alimentation Communautaire) and found in seven of the thirteen villages in which specific investigations were made. Of these seven, two were entirely self-supporting (Seyyen, Jajibinne), while the others received donated supplies from the Croisson Rouge. Children are selected for participation on the basis of being weak or malnourished, although not all villages had the means to assess children's weights or nutritional problems. The children range in age from 1-6, and from 50-110 children are fed. The number of children fed does not necessarily reflect the size of the village: Sabualla which feeds the most children is only a medium sized village (342 households) but one with particular deficits in food.

The CACs feed the children twice a day, six days a week. Mothers take turns cooking. Most villages make a bouilli of wheat, milk and sugar in the mid-morning and a rice dish in the evening. Based on the size of the allotment from Croisson Rouge, each child receives 2-7 kg. of cereal a day. Other goods received include powdered milk, oil and some dried fish. In each village women contribute labor, food and money. The women buy salt, sugar, tomatoes or fresh fish to supplement the food aid. They may also take charge of picking up the food in major towns, paying for the milling and for the transport back to the village.

III. WOMEN'S FARMING AND OTHER PRODUCTIVE ACTIVITIES

Although there are some regular differences in the productive activities of women of the various ethnic groups, some of the contrasts which may have existed in the past have been blurred by the effects of the drought. All women are farming more than they did in the past, as a response to male outmigration as well as in an effort to supplement dwindling harvests. Modifications in their repertoire of crops and land use in response to the drought merits further study. The formation of women's vegetable garden cooperatives in recent years is an example of this trend.

The four major ethnic groups covered in this survey were the Halpulaar, the Soninke, the Peuhl and the Maure. Most villages have a mix of ethnic groups with one in a majority. A brief description of women's activities by ethnic group follows.

A. Soninke Women

Soninke women are known as active farmers. In the past, Soninke men and women's agricultural production was undertaken separately with the men providing the staples and the women providing sauce ingredients (Smale 1980). Soninke women specialized in peanuts, rice, cotton, indigo and okra production in small depressions. Women's labor contribution to the household's collective fields was confined to the bottleneck tasks of planting and harvesting. Other studies have suggested that with the drought Soninke women have reduced their groundnut, cotton and indigo production and increased their cultivation of grain crops to supplement the household production of staples (Smale 1980). War on Want (1977) further suggests that Soninke women have been expanding into new lands with the changing environment.

Six of the surveyed villages were primarily Soninke (Tulei, Wompu, Jajibinne, Haasi Sagar, Kininkumu, Geemu). The women of these villages grow a wide range of crops in several different zones. For example, in Wompu, the women farmed indigo, peanuts and sorghum (fellah) on the dieri fields; maize, melons (gajaaga in Soninke) and sorghum (same) on the walo fields; and maize, sweet potatoes, yams and cowpeas in the irrigated perimeter. Other villages added hibiscus and okra to the list of women's crops.

In all villages women are cultivating grain crops, usually varieties of sorghum, but also millet and maize. Women have continued to cultivate the traditional red rice (maaro beyle in Soninke) in small ponds during the rainy season. The women do most of the labor on these fields themselves, although the husband may take charge of the harvesting, threshing and transport to the village. The proportion sold or kept for consumption is decided by the woman.

The rice fields were traditionally inherited by a woman through her mother or grandmother (Tulei). Other rice fields are loaned from one woman to the other with no share or payment expected.

These fields have not always been adequately flooded during the drought years. Some changes in land use were suggested and are discussed under the activities of Maure women in this same region. Women who continue to farm the traditional rice mentioned serious pest problems primarily from birds but also from wild boars and grasshoppers (Geemu).

Peanut crops have also suffered from the drought and are subject to a number of serious pest problems. Termites, for example, attack the roots. Peanuts take 120 days

to mature and require weeding every 30 days. A decrease in the cultivation of cotton and indigo was noted, although women said this was due to the competition with imported cloth rather than due to the drought (Wompu, Tulel).

Soninke villages have especially high rates of male wage migration, and thus many women as the most permanent rural residents have greatly expanded the diversity of crops they are cultivating.

B. Halpulaar Women

Halpulaar women perform a range of productive activities, which show considerable variation from one village to the next. Generally women only help on the dieri (rainfed) fields of their husbands with the planting, harvesting and winnowing. They tend the intercropped melons, harvesting them and drying out their seeds. Women may help similarly in the walo fields and sometimes cultivate small fields of cotton and indigo. During recent years, Halpulaar have increasingly planted vegetables during the cold, dry season. Men frequently migrate for wages during this period. A further response to the drought which has been noted has been the acquisition of small ruminants (Smale 1980).

Seven of the surveyed villages are comprised primarily of Halpulaar (Fonndu, Saye, Mbooto, Babaabe, Ciide, Garalol, Silla). In all of these villages, the women cultivate vegetables in the winter months (see below). Beyond this activity, their involvement in agriculture ranged from nothing (Babaabe) to cultivation of both dieri and walo fields. The women of Saye, for example, grow millet, sorghum and melons in the dieri and cowpeas, maize and sorghum (same) in the walo. Saye has a rice perimeter, however, which may pull some of the men's labor out of traditional cultivation. By contrast, in Silla the women do no individual farming but help on the rice perimeter and the household's dieri fields.

Most of the dieri fields are loaned by the husband, but some are inherited by the woman herself (Saye, Mbooto). In one village, less than half of the women owned their own dieri fields, while only widows and divorced women owned walo fields (Mbooto).

The greater share of women's harvests are consumed, although a small portion is usually sold to purchase other foods.

Women in general said they did not own any livestock themselves (Garalol, Ciide, Babaabe). Women in some villages indicated that they had owned small ruminants but they had died with the drought (Fonndu, Saye). Others still owned a few goats (Mbooto) and some raised a few chickens (Fonndu).

Halpulaar women listed few other income generating activities. Some of the older women spin and weave cotton (Mbooto, Silla). Some women are becoming involved in cloth dying (Silla, Garalol, Saye), and embroidery and sewing (Ciide, Garalol, Saye) through cooperatives and individually.

C. Peuhl Women

Women of the cattle herding Peuhl traditionally specialized in the processing and sale of milk. With greatly decreased herds and milk supplies since the drought, their primary source of income has been undermined. Some Peuhl women have increased their exploitation of wild foods, others have become more involved in agriculture or initiated

vegetable cultivation.

Three of the villages surveyed were primarily Peuhl (Seyyen, Taasoor Lootokke, Buudaama Semange).

Although it is difficult to assess the decrease in milk supplies overall, there are indications of a drastic reduction. In Seyyen, we were told that women used to sell approximately 40 litres of milk daily for a return of 300-400 UM. Now they can only sell 1-2 litres every 2-3 days for 30-40 UM each time. This represents a tenfold decrease in their incomes from milk.

Part of the reduction in milk available for sale or barter reflects the food needs of the household. When grain is in short supply, the Peuhl drink more milk (Taasoor Lootokke). Another part reflects the efforts to rebuild herds. A greater portion of the milk is now left for the calves. Another part obviously reflects the decreases in herd size.

A significant portion of what surplus milk is available is exchanged for cereals rather than sold. Exchange rates vary depending on the availability of both products. The rainy season when milk is sold is a period of cereal deficits. This may explain why the herding women felt they were getting a bad deal on their exchanges (Taasoor Lootokke, Buudaama Semange). They still preferred to barter because any income made from milk was destined for cereal purchases anyway.

Peuhl women did not report much agricultural activity, although they said they now farmed more than they did in the past (Taasoor Lootokke, Buudaama Semange). The women of Buudaama Semange said they helped in planting and transplanting the household fields, but that there was not enough land for personal production. Other women intercropped okra, hibiscus, melons and cowpeas in with their husband's cereal crops (Taasoor Lootokke) but didn't help with the major crops.

If the husband has migrated, however, sometimes for extended periods, the women and her children must cultivate the dieri fields alone. Again this may be true of women from any ethnic group. One Peuhl woman interviewed in Buudaama Semange had taken charge of her husband's sorghum fields and had invested a sizeable sum (5000 UM) in hiring laborers to help her with the first weeding. Her cultivation techniques were identical to other men's fields.

Only one of the Peuhl villages had a small vegetable garden (Seyyen) although they all expressed interest in starting one. The lack of water was cited in one village (Taasoor Lootokke) with the nearest source 2.5 km. away.

Peuhl women listed other small sources of income. Women weave calabash covers, and sew and plait hair to make small amounts of money. Women said they owned no livestock. A part of the marriage payment is supposed to be in cattle held by the husband but in the wife's name. The women said they never had complete control over these animals, but with herd reduction these animals have passed completely into the husband's hands (Taasoor Lootokke). It is not known how accurate or widespread this phenomenon is and it merits further study.

D. Maure Women

Three of the villages censused were primarily Maure (Sabualla, Deebaye Corfa, Suufi). The nomadic Maure women were in the past primarily restricted to the domestic duties surrounding the tent with some associated livestock activities (Smale 1980).

The semi-sedentarized Maures encountered in the river regions are involved in agriculture. Some of the Maure women do not contribute to agricultural activities (Deebaye Corfa) while others not only help in the family fields but cultivate on their own. In Sabualla, for example, women were growing millet and sorghum on their own dieri fields as well as sharecropping some falo land owned by the Halpulaar of the village. All of their harvest was consumed.

In Suufi, some women are cultivating the traditional red rice grown by the Soninke women of the area. This rice which takes 90 days to mature is grown in small depressions called Tiishilit (Hassaniya). These fields have often not adequately flooded in recent years, and some changes in land use is occurring. An interview conducted with an individual farmer yielded the following information: the land which his wives had planted in rice was no longer wet enough and the husband now uses it for maize. He has given his wives small dieri fields next to his, where they cultivate sorghum, cowpeas, and melons (beref). During this season, she works this field every morning and helps in the seeding of the husband's field in the afternoon. The husband helps on his wife's field one day a week.

These changes in land use due to environmental change are significant and need to be investigated. The implications for women's access to land, for example, should be clarified.

Other crops grown by the Maure women of Suufi included sorghum (fella and gnediko), millet, peanuts and okra.

Other Maure women less involved in agriculture can derive some income from weaving mats (natte in Pulaar) of leather and reeds. Although these mats can command a high price (5-8,000 UM per mat), the raw materials are expensive and the labor demands are high.

Other activities were generally ill paid. Maure women collect and sell wild food products, they produce small amounts of firewood, and they hand pound cereals at the rate of 5 UM/kg (the same price as the mills charge).

None of the Maure villages had a vegetable garden, although again they expressed interest in starting them. In one village the women farmed a cooperative henna garden, and sold the products in Selibaby (Suufi).

IV. MARKET GARDENS

Market gardens were more fully discussed in the earlier report (p. 9-11). That survey was undertaken in February when the gardens are still in production. Most vegetables are grown in the period from October to April. Since little activity was underway at the time of the wet season survey, this discussion will focus on why vegetables are not produced during the rest of the year.

Many European vegetables are poorly adapted to the heat of the May to June period and the rains of the July to September period and thus do well only in the cool dry season (Frederiksen and Assoc. 1982). These cool season crops are more productive overall and include beets, beans, cabbage, carrots, lettuce, onions, parsley, potatoes, radishes and turnips. The fact that all gardens are producing these vegetables at the same time, and thus glutting the market was discussed in the earlier report (p. 11).

Some vegetables have been identified that can do well during the rainy season. These include eggplant, melons, okra, peppers, squash, sweet potatoes, tomatoes and cowpeas (Frederiksen and assoc. 1982). Eggplant can be planted during the peak season but continues to produce fruit beyond the season of other vegetables. Many of the other vegetables on the list are crops already being grown intercropped in the dieri fields or in small parcels nearby. The conservation of these crops is more fully developed than for the other produce. Okra, peppers and cowpeas are already stored over long periods, and sweet potatoes have a relatively long storage life (p. 8).

Several problems have been identified for an extended vegetable production period despite obvious marketing advantages. Any gardener who can either produce earlier or later than the peak has the potential for substantial profits. For example, tomatoes were selling in Kaedi in June for 150 UM/kg. whereas at the peak season they can command as little as 10-15 UM/kg (Mark Lynham, pers. comm.).

The most serious constraint which emerged from the recent survey was the lack of time during the season of dieri cultivation. Women in the Guidimaka especially noted that their time was fully occupied with other farming activities (Wompu, Tulel). The schedule of dieri cultivation may also affect the timing of the planting of vegetables. If crops are delayed in maturing due to late or inadequate rains, the vegetables must wait sometimes until November to be planted.

Another constraint is the increased number of pests and diseases (such as fungi) during the rainy season. Diseases are a minor problem in the dry season due to low humidity.

There is also a problem of seed supply during the wet season. Free seeds are only distributed in the fall (October-November), and so for a garden to plant another campaign they must find seeds on the market, both locally and in Senegal.

One village was employing their garden during this season growing cowpeas and melon in the plots with maize planted around the edges (Ciide). Another vegetable garden was full of eggplants with random tomatoes, peppers, gongoume (a type of mint) and melons growing (Seyyen). Thus, some villages are utilizing their vegetable plots during the rainy season.

Many of the villages surveyed which had vegetable gardens were in their first years of production. Problems of water, fencing and inputs have yet to be resolved even for the cool season campaign.

V. FOOD CONSUMPTION CONSTRAINTS AND RECOMMENDATIONS

The major constraints and proposed solutions or areas of research are discussed below. An effort has been made not to duplicate the constraints summarized in the first report except where refinements of recommendations can be made based on new information (p. 11-18).

It cannot be overemphasized, however, that several major constraints identified in the dry season report were restated by women in this restudy. The inadequate supply of water, especially good quality water for drinking, is a major problem in many villages (p. 13). Inadequate supplies of fuel, and the implications for deforestation, is another example of a persistent problem (p. 14). The lack of availability of fish during the rainy season was also highlighted in the earlier report (p.13).

A. Seasonal Food Shortages

The basic outline of seasonal food shortages has already been drawn. By September, the stocks of cereal stored from the preceding year's harvest are largely depleted. The rains make many roads impassable and cut off access to many villages, especially in the Guidimaka region. This interrupts the supply of foods both commercially and from donations. Vegetable production is confined largely to the cool dry season, making fresh foods scarce the rest of the year. Many of the wild foods which could provide necessary vitamins have been decreased by the prolonged drought. Milk supplies, meant to be higher during the rainy season, have also dropped off considerably since the drought. Crop storage loss due to the damage of termite and other insects as well as from rodents was mentioned in every village.

Compensating Strategies

Many of the compensating strategies have been outlined in the earlier report (p.11-12). Certain agricultural strategies (such as intercropping, planting of short maturing varieties, and early planting of certain crops) will not be discussed again although additional information on dieri cultivation is presented in the farming systems report of this most recent survey. Other strategies deserve reemphasis.

1. Wild foods, especially green leaves, take on added importance during the rainy season. Women are investing time and money to add these foods to the family diet.
2. Efforts are made to maintain the diversity of minor crops (eg. melons, hibiscus, etc.) especially by women. This spreads out the risks of inadequate harvests in specific crops.
3. Some men are migrating during the rainy season, when farm labor demands are high, leaving their wives and children to cultivate the dieri fields.
4. A reduction in the quantity of food served at meals was noted during the rainy season survey (Buudaama Semange, Taasoor Lootokke, Mbooto). This was more frequently mentioned than a reduction in the number of meals, although the morning meal might be skipped. This was explained in terms of the demands on women's time as well as lack of food.
5. The borrowing, renting and sharecropping of agricultural lands is practiced by both men and women in an effort to increase production.

B. Yearlong Food Shortages and Problems

Many of the problems of inadequate food supplies operate throughout the year. Some of those discussed below focus on specific groups, such as young children. Others, such as the lack of credit for food purchases, affect whole villages, especially smaller villages with no developed commercial sector. Supplies of milk and meat or fish are never high.

Compensating Strategies

1. The formation and maintenance of the CAC child feeding programs targets malnourished children at a village level.
2. Some villages have instituted cooperative boutiques to provide a more stable food supply at more stable prices. Fonndu started a boutique with an investment of 95,000 UM collected from emigrants. The cooperative sells mainly oil and rice. The rice is bought on the market and sold at a lower price (but 5-10 UM higher than the controlled price) to anyone who wishes to buy. Since the cooperative was running at a loss, however, it was suffering from inadequate stocks with only 4-5 bags of rice at the time of the survey. The boutique in Wompu was also having trouble keeping stocked although their problem was one of difficult access during the rainy season. In this boutique, emigrants again pay for the rice, oil and fish.
3. Other village women have instituted smaller scale cooperative buying groups. The women of Laya, for example, pool their money and one woman is sent in to a larger town to purchase dried fish. Any excess fish is resold to neighboring villages and the profits return to the cooperative. This not only saves transport money and time, but gets the fish into the villages.
4. Farmers and their wives are pursuing various activities. Other sources of income for women are milk sales, sale of personal crops, weaving, dying and embroidery, sale of wild foods and wood, plastering, etc. The selling of jewelry and clothes was reported across villages (p.12).
5. Borrowing of food and money from friends and relatives (p. 12), sharing of food primarily within the extended family and bartering are all ways of dealing with lack of other credit in many of the villages.

Recommendations

1. Support and encourage the formation of CACs. Once a village has demonstrated its ability to operate this cooperative it could be used for a variety of important extension services beyond the supplementing of child feeding at the village level. Instruction in child nutrition and health could be delivered to villages without PMIs through this cooperative structure.
2. USAID is currently exploring possibilities for Food for Work projects as an alternative to direct food aid. This trend should be encouraged, especially in light of the many problems of food deficits which operate on the village level. Programs of water harvesting and conservation for agroforestry regeneration could have long-term benefits in terms of wild and cultivated food supplies.
3. Efforts should be made to encourage the incipient appearance of cooperative buying groups and boutiques (p. 13). Small scale groups run through existing cooperatives

(such as vegetable gardening associations) could especially be promoted among village women. Some simple techniques of pricing and buying for cooperatives could be extended to existing boutiques.

4. The possibilities for establishing saving societies or revolving credit associations should be investigated. The model of the cooperative vegetable garden in Mbooto saving their funds to buy a communal mill might be suggestive. Other forms of saving associations are known to exist among Soninke women but were not encountered on this survey (Smale 1980). Saving societies are very active in other West African countries (eg. Nigeria), although it is doubtful that savings societies will become feasible in this region until the risk of agriculture in this environment can be reduced (p. 24). With the introduction of techniques of water harvesting and water conservation to reduce variation from year to year, such societies might have a better chance of success.
5. Attention should be paid to small livestock raising around the household. This pattern exists already and can provide necessary sources of milk during periods when the major herds are absent. Such wild foods as paquiri or oulo could be promoted to serve as forage crops in good years, while reserved for human food during years of shortage.

C. Time Constraints

Any planned development which requires women's labor must be sensitive to the already heavy demands on their time. Domestic tasks alone can fill most of the day. Women in many households make 5-10 trips to the water source a day, and in villages with an inadequate number of wells, women may have to wait their turn (Jajibinne, Tulel, Mbooto, Wompu). Wood for cooking is often collected by women on a daily basis and may take up to several hours depending on the extent of denuding of the landscape around the village. Hand pounding of grains is very labor intensive. If grains are pounded twice a day, 3-4 hours might have to be invested. Cooking is also done at least twice, and often three times a day. The infrequency of cooking special foods for small children can probably be explained in terms of time. Time is lost to health problems, both of the women themselves and their children, including the travel time to infirmaries. Buying and selling of small quantities of goods, although probably a social activity as well, can also add up in terms of time. Other income generating activities including agriculture and vegetable gardening obviously require significant time investments.

Compensating Strategies

1. Women reduce the amount of time spent pounding by preparing less time intensive meals and occasional fewer meals.
2. Children's labor contributions are used not only in drawing water and pounding grain, but to purchase food, care for infants, work in the fields, scare birds, tend herds, collect wood, cut and sell forage, etc.
3. Women may buy or exchange for wild foods rather than collecting them themselves. They may decrease their potential consumption of wild fruits in response to the distances involved.
4. If they can afford to, women may purchase firewood or rent a charette to bring back a whole load at once.

5. Women depend on locally available foodstuffs, however inadequate, rather than traveling to larger centers where a wider range of products is available.
6. The efforts of the women of Mbooto to buy a mill and the women of Saye to buy fish cooperatively indicate awareness of the advantages to cooperative effort in alleviating time constraints.
7. Women may hire laborers to help them in agricultural tasks or loan land they cannot themselves cultivate.

Recommendations

1. Cooperative buying and selling saves time as well as money. The vegetable crops produced in the dry season are mostly marketed on a very small scale within the village at very low prices. Cooperative selling in larger markets should be encouraged, as should the cooperative purchase of vehicles, as discussed in the dry season survey (p. 16).
2. Taking the lead from Mbooto other villages could be encouraged to purchase mills when no private sector mill is available. A continuing source of fuel and servicing, however, would have to be included in the initial planning.
3. Food for Work programs might include the digging of wells with advice provided to the farmers on the best and most sanitary locations.
4. Further research should be conducted on women's time use among the various ethnic groups and agricultural regions of the river valley. This research should precede any planned intervention.

D. Women's Agricultural Production and other Productive Activities

Detailed research on women's productive activities was not allowed by the time schedule of a reconnaissance survey. Nonetheless, some of the broad patterns have emerged and merit further research.

Many of the women of the river valley are active cultivators both as a part of the household labor force and in their own right. They thus operate under many of the same constraints experienced by all farmers in these regions and discussed in length in the major report of the survey. Special constraints operating on women include access to agricultural lands, labor constraints, and technical constraints specific to the crops which they grow.

Recommendations

1. Thematic research into the land tenure system as it affects women should be undertaken. There are suggestions that their access to land is changing with environmental change which should be studied now. This research should be carried out within the context of a more thorough understanding of household level tenure as well as the differences in the use of proceeds from the household as opposed to the individual harvests.
2. Research on the minor crops for which women are largely responsible should be pursued. Appropriate inputs and techniques for combating pests differ and this knowledge needs to be extended to women.
3. The identification of improved varieties of peanuts and other sauce crops could help maintain women's contributions to the diet despite drought conditions.
4. A study should be conducted to determine if there is a correlation between increased labor demands on women and reduced time in food preparation. The question is whether women who are spending more time in productive activities are opting more for food dishes, and grains, which take less time to prepare.

APPENDICES

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APPENDIX A

TOPICS OF INQUIRY FOR CONSUMPTION SURVEY

I. GENERAL INQUIRIES ORIENTED TO GROUPS OF WOMEN

A. MARKETS

1. Food prices
2. Location of Market
3. Periodic or permanent

B. FOOD PURCHASES

1. Items purchased daily - quantities
2. Items purchased less frequently

C. BARTER

1. Food exchanged
2. With whom
3. Frequency

D. FOOD SHARING

1. Who is sharing food
2. What is shared
3. How often is it shared

E. FOOD DONATIONS

1. Food Aid (government or non-government agencies)
2. What amounts
3. How often? (how many times in last 12 months)

F. GATHERED FOODS

1. What kinds, found where
2. How often
3. Availability
4. Preferences
5. Sale

G. STORAGE AND PRESERVATION

1. What is stored
2. Types of storage
3. How long ago were the stores depleted
4. Major cause of losses during storage

H. SEASONALITY OF CONSUMPTION

1. What foods are in short supply this season
2. Coping Strategies of the Household
 - a. substitute foods
 - b. selling gold, jewelry, bcubou
 - c. cutting down on meals - present number of meals consumed
 - d. off-farm employment
 - e. other sources of income to purchase food
 - f. credit - borrowing food from merchants
(local merchant or merchants in other towns or villages)
 - g. borrowing from relatives or friends
3. Disease prevalence
 - a. prevalence of different diseases (esp. diarrhea)
 - b. infant mortality - deaths to births
 - c. treatments
4. Water Source
 - a. variation by season
 - b. If well, changes in water level

I. TYPES OF FOOD PREFERRED

1. What is the preferred grain meat
2. What are the desirable qualities of the cereals Ease of preparator. texture, color, ingredients combined with
3. Why do they prefer some grains over others
4. What foods would they eat more of if they could afford it

J. FOOD PREPARATION

1. List of major dishes and their ingredients What eaten during each meal 24 Hour recall
2. Snacks
3. Preparation techniques
 - a. when is the food prepared
 - b. time spent gathering fuelwood water
 - c. quantities of food consumed (local measures, per person)

4. Access to grinding mill Cost, How often If not, how much time does it take to pound the grain?

K. FOOD HABITS

1. Food taboos
Religious, pregnant women, children
2. Weaning foods
Foods for children of non-lactating women
3. Specialty foods
Foods for women just after birth while breastfeeding
4. Breastfeeding
Duration
Practice of weaning - when and how?
5. Who cares for the children when women are working

L. WOMEN'S FARMING ACTIVITIES

1. Access to land
Owned or borrowed
Irrigated/ rainfed/ recession
Environmental effects on access to land
2. Crops grown
Grain, okra, vegetables, minor crops
Have crops changed over time (e.g. still grow indigo, cotton, etc.)
3. Consumed/ marketed
4. Problems
Effects of male outmigration on women's farming activities
5. Desired interventions
6. Livestock ownership
 - what animals
 - products consumed/ marketed
 - animals consumed/ marketed

M. MARKET GARDENS

General Inquiries

1. How organized
2. Seasonality of crops grown
3. consumed/ marketed - where marketed
4. source of water
5. constraints

II. INTERVIEWS CONDUCTED WITH INDIVIDUAL WOMEN

(Note: Try to interview widows and divorced women as well as married)

A. CHARACTERISTICS OF MEMBERS OF THE HOUSEHOLD

1. Age
2. Sex

B. OCCUPATION OF HOUSEHOLD MEMBERS

1. On farm
2. Off farm - seasonality
3. Migration patterns in and out of households

C. EDUCATIONAL LEVEL OF HEAD

D. ACCESS TO AGRICULTURAL LAND For both males and females

E. COPING STRATEGIES OF THE HOUSEHOLD TO DEAL WITH FOOD SUPPLIES

1. Sources of income to purchase food
2. Off farm employment of women
3. Adjustment made in number of meals prepared
4. Selling of household items or personal items
5. Substitute foods
6. Credit - or relationships established with merchants
Terms of credit
Local merchants or in other towns or cities
7. Borrowing from relatives or friends

III. PERSONAL OBSERVATIONS

1. Cooking activities
2. Marketing activities
3. Water gathering activities
4. Fuelwood
5. Gathering wild foods

APPENDIX B

CONSUMPTION SURVEY

| | <u>M'bout</u> | <u>Buudaama Semange</u> | <u>Tulel</u> |
|--|--|---|--|
| | Population: 15-20,000 Mostly Maure, Halpulaar PMI, Dispensary | Maure | Population: 4,000 Soninke |
| A. MARKETS | | | |
| Location | Here, also about 200 boutiques | None Some boutiques | 1 market many boutiques |
| Type of Market (Periodic, etc.) | Permanent, active | Go mainly to Jajibinne but also to M'bout | Permanent |
| Food prices | Onions, 80 um kg. Fresh fish daily 60 um pkg. Fela, 25 um pkg. Millet, 25 um pkg. Rice, 34 um pkg. Sugar, 2 kg. box 200 um Milk powder, 1 kg. 100 um Niebe, 10 um for tea glass Oil, 1 l. 105 um | Fela, 100 um per Moud at Jajibinne Rice, 40 um kg. at Jajibinne Tea, small tea glass 30 um Chicken, 150-200 um Dried fish: Yaboul 100 pkg. ? 200 pkg. Oil, 1 120-130 here but 1 150 um at Jajibinne Little left in village, only merchants in bigger towns | Meat, 100 um kg. Fish: fresh 100 um kg. dried 100 um kg. if good quality Rice, 25 um pkg. sack, 3,000 um in Wali Senegal Millet, 70 um Moud Sorghum, 70 um Moud Oil, 100 um l Tea, 100 um packet Sugar, 100 um packet Onions, 2 for 10 um (Maize not for sale now, beyle not sold) |
| B. FOOD PURCHASES | | | |
| Items purchased daily | Meat Fish Tea Sugar (Fresh fish almost daily from Foum Gleita) | Oil Sugar Rice Tea Coffee Dried fish | Meat Fish Onions Tomatoes Maggi cubes |
| Articles purchas less frequently (2 or 3 days) | Grains, prefer to buy in bulk, if possible | Grains, some buy in bulk in the field or market, Most have to buy small amounts at a time Soap | Sugar Tea Grains |
| C. BARTER | | | |
| Food exchanged | Much less frequent than before Milk is now purchased | Grain for milk, but feel that it takes a lot of milk to get small amount of grain | None, all purchased |
| With whom | NA | Soninke and Moor villages and within village, milk is rarely sold, most traded | NA |

| | <u>Mbout</u> | <u>Buudaama Semange</u> | <u>Tulel</u> |
|---|---|---|--|
| Frequency | ---- | less frequent than before | NA |
| D. FOOD SHARING Who | Can share good harvest with neighbors or friends, or give as charity to those who come begging small amounts of rice and oil | Share within family, they must be fed before share with others If have enough can share with neighbors | Within large extended families |
| What | Mainly kept in family | Food | All foods |
| How often | Frequent but "if you don't know them, you don't know them" | Rare | Frequent |
| E. FOOD DONATIONS Organization | Croisson Range occassionally CSA CAC | CSA No PMI or CAC and <u>need</u> health care | ? |
| Quantities | 50 kg. sorghum 5 kg. powdered milk 2 l. butter (this is not always) for 1 household (4 adults, 3 kids) CSA 50 kg. wheat 5 kg. butter 5 kg. milk but irregular | 3 Moud grain per adult 1 kg. powdered milk per person 2 l. oil per household | Shared by village 1/2 sack per household ? powdered milk |
| Most recent | ---- | 3 months ago | June |
| Frequency in last year | 2-3 times in year CSA gives every 4-5 months | Once a year | |
| F. GATHERED FOODS Kinds and Where Found | Oulo Jujube Gomme arabique Gonakie fruits Ronier-palm fruit Pain de singe Tamarind Keli-fruit trees Baobob leaves lalo Bacaca (H)-powdered, mixed with water and sugar | Oulo all that is available now Jaabe Mourtodes Paguiri-ready late No guidjile, quinquelibas or gommés arabiques or Taabe here | Jaabe (Fani-S) not yet ripe Mourtode (Sekene-S) ready in November Guidjile Oulo-mainly brought in by others and sold in market Baobob (Kide-S) leaves, bark for ropes, fruit |
| How often | Not frequent, most food purchased in this big town | Eat Oulo every day now | Rare Fonio available but don't use it |
| Availability by season | Fruits later, Oulo now | More ready around harvest time than now | Oulo now, fruits ready later |

| | <u>Mbout</u> | <u>Buudaama</u> <u>Semange</u> | <u>Tulel</u> |
|--|--|---|---|
| Preferences | Still use as medicine Paguiri not eaten, seen as attracting birds away from cultivated crops Moors drink more pain de singe juice | Consider Paguiri a poor persons food-eat this if no grain Like Jabbe for the taste but supply low Complain of diminishing supplies of wild foods | Don't like Paguiri Wild foods are not that important |
| Sale | Oulo for sale in market | No | ---- |
| G. STORAGE AND PRESERVATION | | | |
| Products stored | Millet | Fela | Millet Sorghum Rice-purchased Peanuts-purchased Dried fish |
| Types of storage | ---- | ---- | Millet and sorghum stored on panicle Peanuts in bags Rice in bags |
| 32 When stores depleted | Millet still remains but depend on bought rice | "Not a single seed is left" Fela depleted 7 months ago | Some are depleted, others have small amounts |
| Causes of loss | Mice Termites Are powders but don't use it | Rats, have cats but still serious problem | Rice Termites Some buy insecticide to combat |
| H. SEASONALITY OF CONSUMPTION | | | |
| 1. Foods in short supply in this season | Sorghum (especially Fela, the staple) Vegetables (Lettuce, Beets, Carrots, Potatoes, Maize, not yet ready) | Niebe Gaori Wheat Souna Fish-both dry and fresh Dried fish from Nouakchott Occasionally vehicle from Foum Gleista selling fresh fish in Jajibinne Oil Milk Much in short supply No fresh vegetables off the road | Meat Fresh fish-men bring in fresh fish by boat but only lasts 3-4 days-then go for a week or more without Cereals-men go to Wali or Senegal to buy sacks of grains |

| | <u>Mbout</u> | <u>Buudaama Semange</u> | <u>Tulel</u> |
|--|---|--|--|
| 2. Coping with shortages Substitute foods | ---- | Bouilli Eat couscous with water only | Gossi or eat leftovers |
| Selling personal items | Some | Yes, jewelry, clothes "Old women have empty ears" | ---- |
| Number of meals reduced | ---- | No, eat 3 but portions may be reduced | ---- |
| Off-farm work | Remittances very important | Husbands send remittances | Embroidery Dying Hair plaiting |
| Other income for food purchase | Work as maids Petty trade Sell animals | Sell animals but many have died | Money from immigrants very important |
| Credit (borrowing food from merchants) | Little available--only those with salaries can get much credit | Merchants charge <u>double</u> interest whether you buy a pack of sugar or a sack of grain | Credit available but time limit specified Amounts are small (maybe 1 kg.) |
| What merchants | Local | Jajibinne | Local but some are Senegalese |
| Borrowing from friends/ relations | Yes, food as well as money | Borrow from neighbors and relatives Given gifts | Yes |
| 3. Disease Types | Diarrhea Bronchitis | Bad eye problems Whooping Cough Skin rashes | Coughs Bumps on skin (guinea worms?) Stomach upsets |
| Diarrhea prevalence | Diarrhea much worse now, water source in surrounding villages often marigots Mainly children | Children have frequent diarrhea Now only water from marigots | Chronic |
| Ratio of live to dead children | ---- | 1:3 Some lose 1/2 4:1 4:1 4:1 0:1 | ---- |
| Treatment for Diarrhea | Give pain de singe mixed with water Liquids | Collect leaves from a variety of trees, boil them | Gather plant leaves (hotoine) |

| | <u>Mbout</u> | <u>Buudaama Semange</u> | <u>Tulel</u> |
|--------------------------------|--|---|---|
| Other treatments | At infirmary give rehydration therapy from UNICEF Clinic has piperazine (worm) metranidizole (aemoebas) | ---- | Sickness that swells the body(?) Doctor says too much salt Treat with <u>Tiliba</u> (leaves) |
| 4. Water Source | Bore hole supplies water (50 um for 55 gal. drum) Other wells are salty | Marigots now Dry season dig holes in marigot | 4 public wells Some personal |
| Seasonal variation | Only when pumps break down (Price goes up to 100 um) | Very scarce in dry season may move | In dry season wait 3 hours in line waiting turn and wells to recharge |
| Changes in well level | Wells heavily used for watering vegetable gardens Women have to wait turns | ---- | Dry in dry season |
| I. FOOD PREFERENCES | | | |
| Meat/Fish | Moors prefer meat (goat, sheep) Soninke and Halpulaar eat more fresh fish | All prefer goat and sheep over fish | Fish preferred over meat, especially fresh fish |
| Cereals | Fela Moors eat lots of niebe with rice Maize | Fela agueillat | Millet Sorghum (nyogou) - Niebe not preferred but important food |
| Qualities desired in cereals | Taste Variety of dishes | ---- | Taste Cost of preparation |
| Why some preferred over others | Prefer Fela over bougouldel (shorter maturing) for taste and habit Like that maize can be eaten fresh, made into couscous, bouilli, cakes | Fela ag. - easier to process Gives much more flour and cracked grain Weaker now that eating more rice and less sorghum, milk butter than before | Millet tastes better and is easier to work |
| Food preferred if more money | ---- | Gaori - short on grains - get two meals in one | Fish if available |
| J. FOOD PREPARATION | | | |
| Major dishes and ingredients | Rice with oil, onions, fresh fish, meat | <u>Couscous</u> with haco or milk (either millet or sorghum) <u>Rice</u> with oil, dried fish <u>Mafe</u> | <u>Sombi</u> (S) or Gossi (P) - beyle boiled with salt, sugar, milk <u>Couscous</u> with meat, niebe or fish, halo, peanuts <u>Rice</u> with fish or meat |

| | <u>Mbout</u> | <u>Buudaama Semange</u> | <u>Tulel</u> |
|--|--|---|--|
| Meals, what eaten and quantities (1 household) yesterday for: | | | |
| <u>Breakfast</u> | Boulli (rice) for children Tea and bread for adults | <u>Moors</u> : during harvest have tea with couscous and milk other seasons no milk just couscous and water <u>Peuhl</u> : couscous and milk or couscous with haco | 4 meals a day: 8-9: Gossi (Sombi-Soninke) of rice or maize 10: Couscous (Sorghum, maize, millet) with meat, niebe or fish (fresh or dried) |
| <u>Lunch</u> | Now almost always rice with oil, plus meat (Moors), fresh fish (others) | <u>Moors</u> : Gniri with milk Rice with dried fish Gniri (millet or sorghum) with dried fish <u>Peuhl</u> : Rice, mafe, couscous if available with haco | 12-2: Rice with fish or meat-if no fish or meat make Gossi again 10 o'clock meal may be cooked in fields |
| <u>Dinner</u> | Couscous of fela (if available) or millet or wheat with meat (Moors) or fish or haco, oulo | <u>Moors</u> : Couscous with milk <u>Bovilli</u> : eat meat only occasionally <u>Peuhl</u> : Couscous with milk or haco | 8-9: Couscous with meat, fish, niebe and/or haco with peanut sauce |
| <u>Snacks</u> | Cakes with sugar and milk | Wild fruits Bread from Jajibinne | Pode (S)-small squash that is boiled and eaten in this season and eaten as a snack |
| Preparation techniques When | ---- | Pound once a day, cook twice | Pounding once or twice a day Cooking 4 times a day |
| Time spent getting fuelwood | Town women mainly purchase | Wood becoming scarce - every year must go further away Still 2 places left to find Go out every few days | Pick up wood as return from fields In dry season hire a charette |
| Water | ---- | Dry season takes a long time | Get 10 large basins a day just for drinking and cooking - done by young girls |
| Amounts local measures (per person) | Large family 3 kg. rice 3 kg. other grain for dinner | Depends on availability Minimum of 2 kg. a day, maximum of 6 kg. of grain | ---- |

| | <u>Mbout</u> | <u>Buudaama Semange</u> | <u>Tulel</u> |
|--|---|--|---|
| 4. Access to grinding mills Where | 5 private mills | Jajibinne - if only have small amount not worth walking to mill | 3 mills in town but <u>all</u> broken |
| Cost | ---- | ---- | NA |
| Frequency | Everyday | Rare | NA |
| If by hand, time spent pounding | Few still do it - if can't afford | Only once a day Eat flour at one meal, cracked grain the other Time depends on strength and size of family | Takes 2-3 hours a day Corn is especially difficult |
| K. FOOD HABITS | | | |
| 1. Food taboos Religious | ---- | Pork, Donkey, Cat | ---- |
| Pregnant women | Told by PMI to avoid salt because of high blood pressure Mothers drink a lot of milk and other liquids Others told not to drink much Rabbit | ---- | No taboos - try to eat less salt (told by PMI) |
| Children | Eggs | ---- | ---- |
| 2. Weaning foods | Mainly give nothing until weaned Others feed small amounts from family meal Children poorly fed | Milk if available but mainly adult foods No separate preparation | Boulli (rice or maize) |
| 3. Other foods for women who have just given birth | Soup with vegetables, meat, nbagal (rice and fish) If women poor goes back to work in 1 week, richer 4-5 weeks | Boulli with milk Cannot afford other things | Sombi with meat |
| Foods for children of non-lactating mothers | Not a big problem Orphans or thin given goat and cow milk or mix concentrated milk with water Boulli with millet or rice | ---- | Boulli (rice or maize with milk) |
| Foods for sick | ---- | ---- | Bouilli |

| | <u>Mbout</u> | <u>Buudaama Semange</u> | <u>Tulel</u> |
|--------------------------------------|--|--|---|
| 4. Breastfeeding duration | Some 2-3 years others get pregnant in 5-6 months then stop | 18-24 months or until woman gets pregnant | 1-2 years, if pregnant only 6 months |
| How weaned | Done overnight Go to marabout, given potion, child stops feeding | Begin supplement at 6 months Abrupt | When child can sit up give other foods |
| 5. Care of children while women work | When no longer carried, children left with young girls or old people | ---- | Girls, after weaned |
| L. WOMEN'S FARMING ACTIVITIES | | | |
| Access to land | ---- | None, men don't have enough land <u>Peuhl</u> women don't know farming | Some inherited, loaned, given by husband |
| Owned/borrowed | Rent, buy, inherited | Women do help in planting, transplanting, but usually not other activities | Inherited from mother or grandmother Some borrowed but no payment or harvest share expected |
| Irrigated/rainfed/recession | Walo - maize Cowpeas Okra Pateches | ---- | Dieri Bas Fonde - Cultivation for Beyle, but some don't have time to cultivate these so loan them Land for cereals Part of husband's fields Women growing more cereal crops Peanuts hurt by drought |
| Changes with drought | Less land available since Fom Gleita dam | ---- | |
| Crops grown grains | Maize - not yet Fela Bougouldel | ---- | Maaro Beyle (traditional rice) Millet Fela Niebe Maize |
| Vegetables | Peanuts Okra Cowpeas Pasteche | ---- | Peanuts Okra Hibiscus Beref |
| Minor | ---- | ---- | ---- |

| | <u>Mbout</u> | <u>Buudaama Semange</u> | <u>Tulel</u> |
|--|--|--|---|
| Changes in crops grown | Less rice | ---- | Cereals not grown every year No longer grow cotton, inigo because imports |
| Consumed/marketed | Sell 1/2, consume 1/2 | ---- | Most consumed |
| Problems | ---- | ---- | Lack of time, help out in husband's field plus own Planted 4 times, crickets ate |
| Changes in women's farming with outmigration of males | Women usually help in husband's fields, now if not enough remittances work the fields themselves | If husband gone, woman must take care of fields | If men migrated, laborers hired to work the fields |
| Desired interventions | Want sewing coop also dying - money, no materials, no qualified people | ---- | Watering for vegetable gardens |
| Livestock ownership Which animals | ---- | ---- | Some women own a few chickens, goats |
| Products consumed/ marketed | Sell some milk to get small amounts of money | ---- | Get fresh milk during harvest, not now, only powdered |
| Animals consumed/ marketed | Some sold to generate income Rarely eaten | ---- | ---- |
| H. MARKET GARDENS | | | |
| Organization | Coop of both men and women 1 ha. Some have private gardens in courtyards and by well | None, would like vegetable garden | Coop garden of women-paid small fee for seeds (20 um), some this year from government in Magama |
| Seasonality of crops grown | Planted Oct.-Nov., ready Jan.-Feb. NA Cabbage Carrots Beets Cauliflowers Parsley Onions Radish Eggplant Tomatoes Potatoes Only eggplant now | | Only in cold season-said too busy on dieri fields now Lettuce Tomatoes Onions Carrots Turnips Cabbage Beets |

| | <u>Mbout</u> | <u>Buudaama Semange</u> | <u>Tulel</u> |
|---|--|---|--|
| Consumed/marketed | Coop part sold, the rest goes to members | NA | Some consumed, some marketed If need money sell a little each day (about 100 um) |
| How marketed | Here, merchants come from Kaedi to buy as well | NA | In village markets and neighboring villages |
| Source of water | Wells - draw water twice a day | NA | Marigots - have an aroisoir which borrowed from men Not enough to go around |
| Constraints | Camels Water Need fence | NA | Mainly <u>watering</u> - requires twice a day Also seeds Little pest damage <u>No time now</u> |
| General observations Areas of Research | ---- | Food Health Water Coop | Women constructed a wood fence themselves since last year animal damage Started 78-79 as government coop, when government pulled out abandoned until 85-86 Now booming as local collective |
| Notes | Health: 2 CACs, PMI, infirmary | Health: noticeably worse, severely emaciated child, lots of conjunctivitis | Women highly organized Chief of all women oversees 6 wcmens groups (average membership of about 20) They farm a cooperative field and put the proceeds into common chest Hope to use for "good works" but so far not enough profits |

CONSUMPTION SURVEY

| | <u>Wompu</u> | <u>Taasoer</u> <u>Lootokke</u> | <u>Bababe</u> |
|--|--|---|---|
| | Population: 3300 Soninke | Population: 42 households Peuhl: herding village | Population: 15,000 Halpulaar (3%) PMI, CSA, CAC CRS(Catholic Relief Services) |
| A. MARKETS | | | |
| Location | 1 market Boutiques | None, about 10 women sell out of their houses, nearest market 4 km away | Here and some boutiques |
| Type of market (periodic, etc.) | Permanent | ---- | Permanent |
| Food prices | Rice-3200 um for big sack Beyle rice-100 um per Moud Fela - 2500 a sack Peanuts - 90 um per kg. Tea - 100 um per packet Maize - 60 um per Moud Oil - 100 um per l. Souna - 60 um per Moud Dried fish - 60-100 per kg. Tomatoes - 4 kg. for 400 um | Available in village: Sugar - 100 um per packet Tea - 30 um per packet Oil - 120 um l Rice - 40 um per kg. Fela - 100 um per Moud Dried fish - 40 um per kg. Indigo - tea glass 20 um Dried onions - 10 um per glass No millet | Onion - 70 um pkg. Cabbage-en detail not available now Tomatoes-10-15 um pkg, not now Pepper - 200-300 um pkg. Carrot - 50-60 pkg. Gombo - 40-50 pkg. Rice - 33 um pkg. Oil - 100 um per l. Cereals in short supply |
| B. FOOD PURCHASES | | | |
| Items purchased daily | Meat Fish Tomatoes Tea Sugar | Oil Tea Sugar Dried fish Pepper | Rice Sugar Oil Tea |
| Articles purchased less frequently (2 or 3 days) | Rice, sugar come from Senegal (but problem with customs, women say they don't have the right "papers") Oil - enough for 2-3 weeks | Grains Incense Soap Indigo | Cannot afford to buy in bulk Fish from Nouakchott and St. Louis: "Yay Booy" 50 um pkg. Fish from St. Louis 20 um pkg |
| C. BARTER | | | |
| Food exchanged | Maize of fela for milk | Milk for grain, 3 big calabash spoons of milk get 2 of grain Prefer exchange over sale - all for grains | Exchange various food stuffs for millet, other grains, vegetables or milk |
| With whom | Peuhl women | Neighboring village, Littama, 4 k. away | With merchants and market women |
| Frequency | When available | Every day or 2 days during rainy season | 2-3 times a week |

| | <u>Wompu</u> | <u>Taasoor</u> <u>Lootokke</u> | <u>Bababe</u> |
|--------------------------|--|--|--|
| D. FOOD SHARING | | | |
| Who | Within large extended family Also with the poor | Yes, very common within and between families | Within the family |
| What | All food | All food but especially milk | ---- |
| How often | Frequent | Daily basis, determined by need | Daily |
| E. FOOD DONATIONS | | | |
| Organization | Croisson Rouge (was a CAC run by Peace Corps last year, not now) | CSA (but not positive) | Croisson Rouge |
| Quantities | Wheat - up to 3 sacks for big families Milk - 1 sack Butter (Kenedi-S) 1-2 cases by family | Each family: 3 Moud Wheat (Sometimes corn) 1 kg. lait poudre 1 l. butter | 15 quartiers: 40 sack of 25 kg of wheat 4 cases milk 5 l. oil by carton |
| Most recent | ---- | 2 months ago | During last year |
| Frequency in last year | Twice | 3 times last year | 5 times but mostly maize |
| F. GATHERED FOODS | | | |
| Kinds and Where Found | Oulo Souname (S) Heco (P) - a leaf like oulo Dere (S) like spinach Jujubes Mureau Blanc Jomba (S) fruit Toureme (S) fruit Quinquelib | Lalo, Oulo now Jujubes - later after hivernage Pain de singe (rare now) Mourtodes Guidjile - has almost gone with drought Gommes arabiques Ndairy almost gone with drought Tamarind | Mourtode Jaabe Eede Guidjile |
| How often | Everyday get oulo in fields (also for sale in market) Mostly later for fruits | Everyday but more important in Nov.-Dec. | Can find all but mostly Guidjile |
| Availability by season | Leaves now, fruits later | Much reduced due to drought Now oulo, later fruits | Guidjile now available |
| Preferences | All liked | Although Paguiri available, they don't eat it - only Moors | All liked but mainly Guidjile |
| Sale | Some for sale, mostly gather | If big supply, but consume first | 1 kg. 10-12 um for all fruits |

| | <u>Wondu</u> | <u>Taasoor</u> <u>Lootokke</u> | <u>Bababe</u> |
|--|---|---|---|
| G. STORAGE AND PRESERVATION | | | |
| Products stored | Maize Fela Niebe | Fela Souna Maize Pasteche Dried okra Niebe | Cereals |
| Types of storage | Sacks | Fela and Souna stored on stalk Maize on cob Others in sacks or bind | ---- |
| When stores depleted | My interview was with affluent women, still had stores | Most 2 months ago, some 7 months ago, others still have | Still have cereals in stock |
| Causes of loss | Mice Termites and other insects eat the sacks, no way to combat | Mice Tenke Termites All bad with no techniques to combat | Rat Cricket Other insects |
| H. SEASONALITY OF CONSUMPTION | | | |
| 1. Foods in short supply in this season | Rice scarce Maize more available near end of September Fela more expensive now Fresh fish not available No fresh vegetables | Souna Pasteche Fresh fish never arrives here Niebe Gombo Same available but not much | Sorghum Souna Fella Niebe Pasteque |
| 2. Coping with shortages Substitute foods | ---- | Always need grain to eat Sometimes just drink milk or just couscous with water | Substitute bouilli (rice, maize or other cereals) |
| Selling personal items | ---- | Some women have sold jewelry but not many, very loathe to do so | Women's clothes Men's animals |
| Number of meals reduced | ---- | Sometimes 3 rather than 4 but quantities may be reduced | No, but breakfast <u>bouilli</u> if no money for coffee and bread |
| Off-farm work | Remittances (men supposed to provide staples) | Women make calabash covers, sew, braid hair for money Sell milk | Remittances, nothing else for women |

| | <u>Wompu</u> | <u>Taasoor</u> <u>Lootokke</u> | <u>Bababe</u> |
|--|--|--|---|
| Other income for food purchase | Petty commerce by women Make cakes for sale, other cooked foods No female owned stores | Remittances, but some men leave for 4-5 years and send no money back, others regular Sell livestock | Small commerce by men |
| Credit (borrowing food from merchants) | Difficult to get, but if you are a regular "client" can get, no interest | Can get short term "loan" of tea or sugar here but always small "Small capital" | None |
| What merchants | In town | Local village women, none outside | NA |
| Borrowing from friends/relations | ---- | Yes, but usually small quantities | Yes, but must repay by selling crops or clothes, etc. |
| 3. Disease Types | Malaria Diarrhea Vomiting | Malaria Diarrhea Eye problems Cough | Diarrhea |
| Diarrhea prevalence | More now - drinking some marigots water Lots of mosquitoes, rain, etc. | Very frequent | All year, both adults and |
| Ratio of life to dead children | 3:1 8:1 2:0 Some lose 3-4 | 3:2 4:2 5:2 Several women are barren | 3:? (27 years) 4:? (27 years) 5:? (36 years) |
| Treatment for Diarrhea | ---- | No local treatments, if very bad go to infirmary in Magama | Bouilli of rice or go to hospital |
| Other treatments | ---- | Wash eyes frequently Women have great faith in infirmary but difficult access | None |
| 4. Water Source | Wells (9 but only 1 works) Also marigots | Marigots In dry season dig holes in marigots | 3 public wells and 7 wells built by Croisson Rouge |
| Seasonal variation | Dry up in dry season, saltiness | Water very scarce in dry season Must walk up to 4 km to find water | Lower in dry season but now always full |
| Changes in well level | Long waits for your turn, into night even | Some families leave for <u>Walo</u> with livestock in dry season | ---- |

| | <u>Wompu</u> | <u>Taasoor</u> <u>Lootokke</u> | <u>Bababe</u> |
|---|--|---|---|
| I. FOOD PREFERENCES | | | |
| Meat/Fish | Fresh fish (eat dried if have to) Sheep and beef Meat eaten daily | All domestic livestock preferred over fish but eat mostly fish | Beef |
| Cereals | Maize Millet more than Fela (Rice considered separate) | Fela Souna | Same Maize Niebe Pasteche |
| Qualities desired in cereals | Taste Variety in preparation | Ease of preparation Large output per grain Taste | Ease or preparation |
| Why some preferred over others | Maize preferred because more different preparation recipes | Don't eat much rice, don't much like the taste More expensive | Prefer saame and fella over maize because easier to prepare |
| Food preferred if more money | ---- | Meat (eaten rarely - on ceremonial occasions) | Rice Fish Rice with meat Mafe Domada Mafe Kanje |
| J. FOOD PREPARATION | | | |
| Major dishes and ingredients | Bouilli (rice) with sugar and milk Couscous (sorghum, maize) with wild and cultivated leaves Rice with meat, fish, chicken Mafe | Couscous with <u>haco</u> and/or milk <u>Gniri bouna</u> <u>Gniri Kossam</u> <u>Mafe</u> | ---- |
| Meals, what eaten and qualities (1 household) yesterday for: | | | |
| <u>Breakfast</u> | 4 meals 7-8: <u>bouilli</u> (rice) with sugar and milk, bread 10-10:30 - <u>Couscous</u> with haco, oulo, souname (fela, same, maize) | 2 breakfast 1 early: coffee or tea Couscous with milk (maize, millet, wheat) 1 mid-morning: boullie (grain and milk) | Couscous with milk or bouilli (rice) or coffee with bread |
| <u>Lunch</u> | 1 pm: rice with meat, fish, chicken or mafe | Gniri bouna (with dried fish) Gniri Kossam (with lait calle) Kanje with butter Mafe (with okra) | Rice with fish or meat Gniri Bouna Mafe Kandje Mafe Domada |

| | <u>Wompu</u> | <u>Taasoor</u> <u>Lootokke</u> | <u>Bababe</u> |
|--|---|---|---|
| <u>Dinner</u> | 6-6:30 - <u>bouilli</u> of rice, milk, sugar or <u>sambi</u> | Couscous (any available cereal) with <u>naco</u> (milk may be added to the couscous later) Milk very important to diet especially in this season | Couscous of Haco Couscous with niebe Couscous with milk If no money make bouilli |
| <u>Snacks</u> | Tea Coffee Cake Candy Peanuts Yams raw Boiled maize | Few snacks eaten Some bread | Mourtodes, Jaabe but mainly Guidjiles |
| Preparation techniques When | Women take turns cooking | Twice a day At night for next morning During day for other meals Several hours | 1 time at mill |
| Time spent getting fuelwood | Get wood as return from fields 10 pieces for 20 um or 300 um for charrette Wood more expensive now | Difficult to find close to village - can take up to 2 hours a day to collect firewood | Women collect wood in bush Takes 4 hours a day |
| Water | Only 1 working well - <u>long</u> waiting time, into night | Go 5 times a day Women and young girls | 10 times a day |
| Amounts local measures (per person) | Families large 15-20 people eat 6-8 kg. rice (some as much as 25, some as little as 2 plus 4-5 kg of cereal for large family) | ---- | Small families eat 1 Moud Large families up to 3-4 Moud |
| 4. Access to grinding mills Where | 2 mills (owned by women) | None here, closest is 4 km away | 1 mill |
| Cost | 17 um per Moud (4.2 per kg) | ---- | 20 um per Moud |
| Frequency | Most daily | Rare - only when can afford | 1 time a day |
| If by hand, time spent pounding | ---- | ---- | 1 Moud takes 3 hours to pound |
| K. FOOD HABITS | | | |
| 1. Food taboos Religious | ---- | Usual Muslim taboos | ---- |
| Pregnant women | ---- | None | ---- |

| | <u>Wompu</u> | <u>Taasoor</u> <u>Loofokke</u> | <u>Bababe</u> |
|--|--|--|--|
| Children | ---- | None | Tea |
| 2. Weaning foods | Given adult foods as well as milk (powdered and as bouilli) | At 6 months start to give other foods especially milk | Milk Bouilli with cereals |
| 3. Other foods for women who have just given birth | ---- | Bouilli made with milk and cereal | Soup with meat, potatoes Bouilli Kodde (P) |
| Foods for children of non-lactating mothers | Bouilli Milk | Milk from animals | Milk |
| Foods for sick | ---- | ---- | Bouilli of rice or cereal |
| 4. Breast feeding duration | 18 months | 2 years | 14 months |
| How weaned | Start feed 4-5 months | ---- | Fed other food 7-8 months |
| 5. Care of children while women work | ---- | ---- | Older people |
| L. WOMEN'S FARMING ACTIVITIES | | | |
| Access to land | ---- | Husband's | ---- |
| Owned/borrowed | Some from husband Some borroed None purchased | Farm along borders of husbands field or mix seeds of okra, etc. with grain seeds | ---- |
| Irrigated/rainfed/recession | Dieri Walo Perimeters | ---- | ---- |
| Changes with drought | ---- | Farming more than before | ---- |
| Crops grown grains | Dieri: indigo peanuts maize fela Walo: gajaba maize | ---- | ---- |
| Vegetables | Perimeters: maize sweet potatoes yams cowpeas | Gombo Foleri Beref (melon) Cowpeas Peanuts (rare) | Eggplant Tomatoes Carrots Cabbage Red pepper Okra |

| | <u>Wompu</u> | <u>Taasoor</u> <u>Lootokke</u> | Potatoes <u>Bababe</u> |
|--|--|--|--|
| Changes in crops grown | No more cotton | ---- | ---- |
| Consumed/marketed | Some sold, some consumed | Mainly consumption | Sold here in Bababe |
| Problems | Lack of rain Termites eat peanut (plant looks alright but eaten below) Animals Rats eat peanuts | ---- | ---- |
| Changes in women's farming with outmigration of males | ---- | Children do the farming Women take care of animals Women don't work in family field | ---- |
| Desired interventions | Women using fertilizer in perimeters but not as much as men No inputs used or needed | ---- | Already had seeds, fence, watering cans So well supplied by Croisson Rouge Given all sorts of seeds, 70 watering cans, 6 rakes, 50 wheelbarrows, 2 spades, even the land given by Croisson Rouge |
| Livestock ownership Which animals | ---- | Women's bride wealth animals are supposed to be own but with loss of herds men taken over (always had some control) | Men own cows and goats |
| Products consumed/ marketed | ---- | Milk sold in village 4 km in this season - most is consumed | Eaten only if guests Rarely eaten |
| Animals consumed/ marketed | ---- | Sold some animals to buy grain Eaten only for ceremonies | Some sold to get cash |
| M. MARKET GARDENS | | | |
| Organization | Individual garden plots placed near water | None - seeds came but have no water (2.5 km away) | Croisson Rouge gave seeds and fence Cooperative gardens - all women water everyday |
| Seasonality of crops grown | None grown at this time In cool dry season grow tomatoes, potatoes, cabbages, onions, turnips, beets, lettuce, carrots <u>Lack of time</u> now Nothing grows in gardens now | ---- | Nothing - only in dry season |

| | <u>Wompu</u> | <u>Taasoor</u> <u>Lootokke</u> | <u>Bababe</u> |
|---|--|--|---|
| Consumed/marketed | Mostly for consumption | NA | Both - sold if necessary part sold for cooperative Part sold/consumed by individuals |
| How marketed | Local market | NA | Sold here by piece or kg |
| Source of Water | No well, just river | No water | On the Dieri with well water by hand |
| Constraints | Few inputs available Some seeds available but not many | NA | Watering by hand, drawing well water (supposedly had pumps, see earlier survey) |
| General observations Areas of Research | ---- | Want: well MIU PMI Dispensary Wish men didn't have to do wage migration Buying coop | Well supplied by Croisson Rouge Active commercial sector |
| Notes | Women's farming income supposed to buy clothing for themselves and their children Cooperative boutique but not well stocked Rice not arriving Dried fish from Nouakchott Started last dry season Idea from migrants to bring food into village Emigrants pay for the rice, oil, fish Travels Mauritania side Other food came as free seeds 300 kg sorghum this year 600 kg last year Only a couple of families planted it, most ate | Milk for sale greatly reduced Trying to build up herds so leaving enough for calves (herders <u>not</u> women's decision) most of rest consumed Now at most 4-8 l. milk None at all in dry season (only 3 months) In past, surplus milk given away or given to the animals to drink Milk twice a day In principal, equal amounts consumed and sold Now with lack of grains, depend more on milk Rate of exchange of milk vs. grain varies by supply of both | |

CONSUMPTION SURVEY

| | <u>Ciide</u> | <u>Garalol</u> | <u>Jajabinne</u> |
|---|---|---|--|
| | Population: 4,340 Halpulaar Maure (3%) | 300 households Halpulaar Maure | Population: 240 households Soninke Halpulaar Maure |
| A. MARKETS | | | |
| Location | Here | Here | None, 10 boutiques |
| Type of market (Periodic, etc.) | Permanent | Permanent | NA |
| Food prices | Fish fresh 50-60 um kg. Carrots, 40-70 um kg. Turnip, 4 for 20 um Cauliflower, 1 for 10-20 um Sweet Potatoes, 10-20 um Manioc, 5-10 um for 1 Tomatoes, 6-10 um each Potatoes, 45 um kg. Rice, 34 um kg. Oil, 80 um l. Tea, 85 um packed Sugar, 85 um packet Onions, 35-70 um kg. Cubes Maggi, bag for 145 um Pepper, 5-10 um each | Fish: fresh 50-80 um kg. dried 120-180 um kg. Meat, 180 um kg. Milk, 160 um kg. Powdered milk, 200 um kg. | Millet, 80 um Moud Rice, 40 um kg. Oil, 120 um l. Dried fish, 200 um kg. Onions, 30 um kg. Peanuts, rare Bag of rice, 3500 um Bag of peanuts, 7000 um |
| B. FOOD PURCHASES | | | |
| Items purchased daily | Oil Vegetables (not now) Sugar Tea | Milk Dried fish Rice in boutiques | Onions Tomatoes Dried fish Peanuts |
| Articles purchased less frequently (2 or 3 days) | Rice, sack lasts 15 days to 2 months, depends on size of family 1 Moud of maize or fela every 2 or 3 days Pasteche, maggi | Dried fish 1 sack rice for 1 month | Dried fish Peanuts |
| C. BARTER | | | |
| Food exchanged | Cereals for dried fish, salt or sour milk | Cereals for food eg. dried fish, hibiscus, niebe | Grains for tomatoes, dried fish, onions |
| With whom | With merchants or market women | With merchants | Merchants |
| Frequency | Very frequently 2-3 times a week | 5-6 times a month | Very frequent |

| | <u>Ciide</u> | <u>Garalol</u> | <u>Jalabinne</u> |
|------------------------------------|---|--|--|
| D. FOOD SHARING | | | |
| Who | Within the family | Only within the family | Within family |
| What | Not breakfast - some drink coffee, some tea, some milk | All | All |
| How often | Daily | Daily | Daily |
| E. FOOD DONATIONS | | | |
| Organization | CSA | Government? | CSA |
| Quantities | By household: 50 kg. wheat 5 l. oil 5 kg. milk | Wheat - 1 sack 50K for 3-4 people 25 kg. milk for 10 people 2 1/2 kg. oil per person | <u>Last year:</u> Wheat-1 sack 50 kg. for 2 people 1 kg. milk per 4 persons 1 l. oil for 2 people <u>This year:</u> 1.5 Moud Wheat per person |
| Most Recent | ---- | ---- | ---- |
| Frequency in last year | 2 times this year 3 times last year (only wheat) | 2 times Maize Once Wheat | 2-3 times More last year |
| F. GATHERED FOODS | | | |
| Kinds and where found | Mourtode Guidjile Jabbe Some Fonio but not often eaten | Guidjile Mourtode Jaabe found on the Dieri | Mourtode Jabbe Baobob on Dieri |
| How often | ---- | Once a year for Guidjile Twice a year for Mourtode Once a year for Jaabe | 1-2 times a year 1 for Pain de Singe 2 for Jabbe and Mourtode |
| Availability by season | ou Dieri fields Rarely find Mourtode and Jabbe now but during cold season | Cold season | Dry season |
| Preferences | Mourtodes and Jabbe preferred for taste | Prefer taste of Jaabe | Mourtode - prefer taste |
| Sale | Bought from nomads 1 kg. 20 um for Mourtodes and Jabbe | For consumption | No |
| G. STORAGE AND PRESERVATION | | | |
| Products stored | ---- | Maize | Nothing left - eaten and sold for clothes |
| Types of storage | Spread salt on ground to stop insects, pile wood up to 50 c. then put panicles on top | Granaries or Bancos | ---- |

| | <u>Ciide</u> | <u>Garalol</u> | <u>Jajabinne</u> |
|--|--|--|---|
| When stores depleted | Depends on size of family Most lasted 7-8 months Some still have stocks | Some lasted only 2 months others lasted all year | ---- |
| Causes of loss | Rat Cricket | Crickets Rat Pirou (P) | ---- |
| H. SEASONALITY OF CONSUMPTION | | | |
| 1. Foods in short supply in this season | Vegetables: Sweet Potatoes Carrots Cauliflower Potatoes Pasteche Manioc Rice Fish Maggi Hibiscus | Fresh fish Dried fish Vegetables | Oil Peants Rice costly (bag/3500 um) Peanuts (bag/7000 um) |
| 2. Coping with shortages Substitute foods | Bouilli Gniri Kossam (gniri with soured milk and sugar) | Gniri Kossam Bouilli Couscous and Gniri Niebe Gniri Bouna | Bouilli |
| Selling personal items | Jewelry Gold Cloth | Jewelry Clothes Gold | Yes - gold Clothes |
| Number of meals reduced | Always 3 a day | May skip breakfast if lack of food | 3 meals |
| Off-farm work | Embroidery Sewing Dying | Knitting Sewing Weaving Sell doughnuts | Remittances used to be substantial but less now |
| Other income for food purchase | Remittances from children and husband | Weaving natte Weaves winnowing baskets | ---- |
| Credit (borrowing food from merchants) | Can borrow up to 4-5,000 um and repay with remittances, no interest | Borrow from merchants. money and goods Credit up to 10,000 um | yes |
| What merchants | Local merchants | Local merchants | Local |
| Borrowing from friends/relations | Yes | Yes | Yes, but must repay in preset time period |

| | <u>Ciide</u> | <u>Garalol</u> | <u>Jajabinne</u> |
|-----------------------------------|--|--|--|
| 3. Disease Types | Diarrhea | Diarrhea Stomach problems | Diarrhea Colds |
| Diarrhea prevalence | All year long but especially children | All year long | Non |
| Ratio of live to dead children | 5:0 (29 years) 2:0 (26 years) 3:0 (26 years) | ---- | ---- |
| Treatment for diarrhea | Have a CAC or take to PMI in Boghe Given Baobob or Bouilli made with rice | Bouilli or rice Pain de Singe | Boil guava leaves and drink Pound leaves of Gassambi or Ketebene and drink (S) |
| Other treatments | ---- | None | Cold: Drasse (S) Put into fire, cover head and breathe |
| 4. Water Source | 9 wells (3 salty, 6 shallow) 3 of these built by government the others are private | 2 wells (1 government) The other shared as well | 3 wells (1 is salty) |
| Seasonal variation | 6 get very dry during dry season Some are well supplied | Low in dry season | Water level drops in dry season Draw water at night |
| Changes in well level | ---- | ---- | Not enough water for the needs of the village |
| I. FOOD PREFERENCES | | | |
| Meat/Fish | Meat of cow or goats | Camel meat but sheep and goat otherwise | Meat |
| Cereals | Same but other cereals as well | Same Fela Millet | ---- |
| Qualities desired in cereals | Variety in preparation methods | Ease of preparation Variety of recipes (couscous, gniri) | ---- |
| Why some preferred over others | Same preferred because of variety of preparation (couscous, gniri or bouilli) | Especially Same and Fela | ---- |
| Food preferred if more money | Fish Rice Meat Mafe with peanuts Mafe domada | Rice Meat Mafe Domada Mafe Kandjo Gniri with meat (teou) | ---- |

| | <u>Ciide</u> | <u>Garalol</u> | <u>Jaiabinne</u> |
|--|---|--|--|
| J. FOOD PREPARATION | | | |
| Major dishes and ingredients | ---- | ---- | Foude (flour formed into small balls and cooked with salt and sour milk) Takhaye Bine (mafe made with leaves of Baobob, meat, dry or fresh fish) Couscous with Haco (Fouto do Dere) Couscous with Niebe (Falo do Mole) Couscous with milk (Fouto do Khali) |
| Meals, what eaten and quantities (1 household) yesterday for | | | |
| <u>Breakfast</u> | Coffee Bread | Couscous with milk Coffee and bread Couscous with Haco If lack of food may have nothing | Coffee and Bread Foude |
| <u>Lunch</u> | Rice with fish or meat with dried fish Gniri Bouna Gniri Kossam | Rice with fish (dried and fresh) Rice with meat Gniri Bouna Gniri Kossam | Rice with dried fish, meat Takhaye Bine |
| <u>Dinner</u> | Couscous with Haco or Lidi or Niebe Haco mixed with meat or fish and peanuts | Couscous with Haco Couscous with fish Couscous with Niebe | Fouto do Dere Fouto do Moli Fouto do Khali |
| <u>Snacks</u> | ---- | Tea Toufam (Milk, water and sugar-Zrik) | Mourtode Jaabe |
| Preparation techniques | ---- | ---- | ---- |
| When | | | |
| Time spend getting fuelwood | 3-4 hours to get wood because have to cross marigots Otherwise, rent cart for 500 um | 4-5 hours a day because so far from village | 3 hours |
| Water | 5-10 times a day | 3-8 times a day | 5-10 times a day |

| | <u>Clide</u> | <u>Garalol</u> | <u>Jajabinne</u> |
|--|--|---|---|
| Amounts local measure (per person) | Small families eat 1 Moud Large families up to 3-4 Moud | Small families eat 1 Moud Large families up to 3-4 Moud | Small families eat 1 Moud Large families up to 3-4 Moud |
| 4. Access to grinding mills Where | 1 mill | 1 mill (private) | 2 mills (diesel) |
| Cost | 20 um per Moud | 20 um per Moud | 20 um per Moud |
| Frequency | May grind 4-5 Moud at once to last 3-4 days | 1-2 times a day | Once every day |
| If by hand, time spent pounding | 3 hours or hire Moors to pound at 20 um for the Moud | 2-3 hours depending on the individual, once for cracked, once for flour | 1-2 hours depending on the individual |
| K. FOOD HABITS | | | |
| 1. Food taboos Religious | None | None | None |
| Pregnant women | None | Nothing tabooed, avoid foods which make them vomit | None |
| Children | Tea Peppers Kids eat dirt | Pepper Dirt Haco gives diarrhea | Couscous with Haco Dirt |
| 2. Weaning foods | Milk Bouilli Biscuit | Milk Bouilli | Bouilli All other foods as well |
| 3. Other foods for women who have just given birth | Soup with meat and potatoes Bouilli Same with sugar and milk | Bouilli Soup with meat and potatoes | Bouilli Soup with meat Couscous |
| Foods for children of non-lactating mothers | Milk in cartons or boiled fresh milk Bouilli | Milk Bouilli | Milk Bouilli |
| Foods for sick | Bouilli of rice of same or fella with sugar and sour milk | Bouilli | ---- |
| 4. Breastfeeding duration | 7 1/2 months to 2 years If woman pregnant start at 6 months | 19-24 months | 1-2 years Less if pregnant |
| How weaned | Give milk and other foods | Start eating at 7 months | ---- |

| | <u>Ciide</u> | <u>Garalol</u> | <u>Jajabinne</u> |
|---|---|---|---------------------------------|
| 5. Care of children while women work | Mother-in-law or older people | Old women | Elderly women or older children |
| L. WOMEN'S FARMING ACTIVITIES | Land for vegetable garden given by men of village | ---- | ---- |
| Owned/borrowed | ---- | owned? | owned |
| Irrigated/rainfed/recession | Grow niebe and pasteche in vegetable garden during this season | Dieri Walo | Dieri Decrue |
| Changes with drought | ---- | ---- | ---- |
| Crops grown grains | Maize in the vegetable garden around the edges Dry season | Same Maize | Cereal? Mil |
| Vegetables | Carrot Beet Cabbage Potatoes Sweet Potatoes Eggplant Tomatoes Red pepper Turnips Bitter tomatoes | Onions Lettuce Carrots Turnips Eggplant Bitter tomatoes Parsley Tomatoes Pepper Red pepper | Peanuts Pasteche |
| Changes in crops grown | None | No | None |
| Consumed/marketed | Sold more than consumed in '85 This year expanded from just cooperative to have individual gardens | Vegetables partly sold | ---- |
| Problems | Water Seeds Tools | ---- | ---- |
| Changes in women's farming with outmigration of males | ---- | ---- | ---- |
| Desired interventions | Started in '85 | Extension Water Seeds But mainly extension since don't know techniques | ---- |

| | <u>Ciide</u> | <u>Garalol</u> | <u>Jaiabinne</u> |
|---|---|--|--------------------------|
| Livestock ownership Which animals | None | None | ---- |
| Products consumed/ marketed | ---- | Some consumed but mostly sold | ---- |
| M. MARKET GARDENS | | | |
| Organization | Work cooperatively to water and weed (take turns 4-5 women at a time) 100 women | Coop but with individual parcels Work to water on coop field first, then water their individual after 1 ha. per 100 women | Coop Seeds from Kaedi |
| Seasonality of crops grown | Dry season Land from men of village Women bought seeds | Dry season | ---- |
| Consumed/marketd | Sold most of '85 This year sold more because of private parcels | Consumed and marketed Proceeds returned to cooperative but individual plots often sold | ---- |
| How marketed | Here sold in kg. or by piece | Here in bulk and piecemeal | ---- |
| Source of water | Well - far from field Have to draw water 4-5 times to water single parcel 2 times a day | Well | ---- |
| Constraints | Watering | Water Seeds Extension | ---- |
| General observations Areas of research | Have wells, markets but need more inputs | Women contributed money to buy seeds Fence put up by Peace Corps | ---- |

CONSUMPTION SURVEY

| | <u>Geemu</u> | <u>Deebave</u> <u>Corfa</u> | <u>Haasi</u> <u>Caagar</u> |
|--|--------------|-------------------------------------|--|
| | ---- | Population: 290 households Maure | Population: 560 households Soninke, Peuhl - 12 households Maurs - 4 households Dispensary |

A. MARKETS

| | | | |
|----------------|--|--|---|
| Location | None | None | None, boutiques |
| Type of market | NA | NA | NA |
| Food prices | Rice, 30 um per kg. Dry fish, 200 um per kg. Oil, 150 um per l. Tea, 100 um per packet Sugar, 90 um per packet Fresh fish, 150 um per kg. Meat, heap for 150 - 200 um Pepper, 5 um for small pile | Rice, 40 um per kg. Milk, 100 um per kg. Oil, 120 um p l. Fish, dried 200 um. per kg. fresh 100 um per kg. Meat, 100 um per kg. | Sugar, 100 um per kg. Peanuts 80 um per kg. Oil, 120 um per l. Rice, 40 um per kg. Milk, 100 um per kg. Soap, 40 um. |

B. FOOD PURCHASES

| | | | |
|--|---|--|---|
| Items purchased daily | Oil Dry fish Rice Maggi cubes Red peppers Pepper Onions Laurel | Cereals Oil Onions | Rice Oil Milk Sugar Dried fish Peanuts |
| Articles purchased less frequently (2 or 3 days) | Dry fish Peanuts | Fish (dried and fresh) Milk Meat | None |

C. BARTER

| | | | |
|----------------|---------------------------|---|------------------------|
| Food exchanged | Grain for oil or rice | Cereals for oil or rice, but must give a lot of cereal for small amounts of rice or oil | Cereal for rice or oil |
| With whom | Merchants or market women | Merchants and sellers | Merchants and sellers |
| Frequency | Very frequent | 2-3 times a year | Very frequent |

| | <u>Geemu</u> | <u>Deebaye</u> <u>Corfa</u> | <u>Haasi</u> <u>Caagar</u> |
|------------------------------------|---|--|--|
| D. FOOD SHARING | | | |
| Who | Within family | Within household | Within household |
| What | All | All meals | All meals |
| How often | Daily | All meals | All meals |
| E. FOOD DONATIONS | | | |
| Organization | CSA | CSA | Government |
| Quantities | Only 1 Moud per family | Per household: 25 kg. Wheat 2.5 l. Oil 2 kg. Milk | 100 kg. Wheat per family 1 kg. Milk per person 50 kg. Same (Nboderi) per person One handful of Maize per person for seeds |
| Most recent | ---- | ---- | ---- |
| Frequency in last year | Very infrequent | 2 times | 2 times this year Once last year |
| F. GATHERED FOODS | | | |
| Kinds and where found | Mourtode Jaabe Pain de Singe Mureaublanc Gourme | None | Mourtode Jaabe Pain de Singe Guidjile |
| How often | Once a year for Pain de Singe 2 times for Jaabe and Mourtode | ---- | Once during last year |
| Availability by season | Dry season and rainy | ---- | Dry season |
| Preferences | Prefer all for taste | --- | Mourtode, can be pounded and soap produced |
| Sale | No | ---- | No |
| G. STORAGE AND PRESERVATION | | | |
| Products stored | Fela Sidi Gueleba Guediko | Nothing | Nothing |
| Types of storage | Granary or banco | Storerooms and mud granaries | Storerooms and mud granaries |

| | <u>Geemu</u> | <u>Deebaye Corfa</u> | <u>Haasi Caagar</u> |
|--|--|--|--|
| When stores depleted | Lasted 8-10 months In some cases all year if good harvest | 4 months ago | 3 months ago |
| Causes of loss | Maradounthiero (Soninke)- Small insect | Insects Rats Mice Birds | Insects |
| H. SEASONALITY OF CONSUMPTION | | | |
| 1. Foods in short supply in this season | Milk Fish | Cereal Fish Meat | Cereal Rice Milk |
| 2. Coping with shortages Substitute foods | Bouilli, but most still have cereals | Bouilli or don't eat at all | Bouilli Gniri Kossam |
| Selling personal items | Gold Cloth Clothing | Sell jewels, clothes, animals | Sell gold, clothes, cloth |
| Number of meals reduced | 3 meals | 2-3 meals | 3 meals |
| Off-farm work | Remittances | Remittances very rarely or none at all | Remittances, but very rare |
| Other income for food purchase | Sewing Knitting Embroidery Market gardens | Weaving natte and khafta | Plastering |
| Credit (borrowing food from merchants) | Yes | None | None |
| What merchants | Merchants and other local sellers | NA | NA |
| Borrowing from friends/relations | Yes, if repay in a set period | No | Yes, when they can |
| 3. Disease types | Diarrhea | Diarrhea Fever Headaches Vomiting | Diarrhea Vomiting Messene (children get red eyes, fever and spots)- Measles |
| Diarrhea prevalence | All year | All year, but especially now | ---- |

| | <u>Geemu</u> | <u>Deebaye</u> <u>Corfa</u> | <u>Haasi</u> <u>Caagar</u> |
|--------------------------------|--|--|---|
| Ratio of live to dead children | ---- | ---- | ---- |
| Treatment for diarrhes | Pain de Singe with goat's milk Kottone-tree fruit mixed with milk (Soninke) | Pounded leaves mixed with milk given to kids | None |
| Other treatments | For guinea worm heat a knife and apply it to infected area | Vomiting: crushed mint in water with sugar Headache: put bene on head Fever: cover body with butter, massage and cover up until well | Measles (Messene): Vinegar and sugar |
| 4. Water Source | 9 wells of which 3 drinkable, not salty Also marigots | Forage put in by government Marigot 1 well | 3 wells (2 salty) 1 drinkable |
| Seasonal variation | All are low in dry season Now full | Dry season lack of water | Dry season well level lowered |
| Changes in well level | ---- | Inadequate water supply for village | ---- |
| I. FOOD PREFERENCES | | | |
| Meat/Fish | All meats | Sheep Goats Beef Camel, all are hard to find | Meat - beef Eat more fish due to lack of meat |
| Cereals | Fela N'yedigo | Gueylat (big mil) Lekhouweire (medium mil) | Fella |
| Qualities desired in cereals | Ease of preparation | Preferred taste of others but not found | ---- |
| Why some preferred over others | Because this is what they grow | Use to grow Guedjeba and Tadjalit but not any more | This is what is grown and it produces well |
| Food preferred if more money | Rice with meat Rice with fresh fish | Meat Rice Cereals Milk | Rice with meat Rice with dried fish and tomatoes |
| J. FOOD PREPARATION | | | |
| Major dishes and Ingredients | ---- | Gommou (Mare): made like Couscous but grains are bigger, only with meat | ---- |

| | <u>Geemu</u> | <u>Deebaye</u> <u>Corfa</u> | <u>Haasi</u> <u>Caagar</u> |
|--|--|---|---|
| Meals, what eaten and quantities (1 household) yesterday | | | |
| <u>Breakfast</u> | Couscous with Haco Couscous with milk or Bouilli with sugar and sour milk | Leftovers from night before | Leftovers from night before Couscous Haco |
| <u>Lunch</u> | Rice with dried fish, or meat or hibiscus leaves | Gommou Gniri Kossam (Soure do Khati) Rice with fish | Rice with dried fish Rice Mafe Mafe Takhayi Bine (Soninka) made with lalo as sauce ingredient |
| <u>Dinner</u> | Fouto de Dere Fouto do Moli Bouilli Couscous with milk Couscous bassi | Couscous Bassi, roasted ground peanuts with meat or fish Couscous with milk | Couscous bassi Couscous haco |
| <u>Snacks</u> | Murtode Jaabe Pain de Singe | None | ---- |
| Preparation techniques When | ---- | ---- | ---- |
| Time spent getting fuelwood | 3-4 hours | Done by men Take out donkeys and bring enough for 3-4 days | 3 hours |
| Water | 5-7 times a day | --- | 4-5 times a day |
| Amounts local measure (per person) | ---- | ---- | ---- |
| 4. Access to grinding mills, where | 2 mills (only 1 works) | 2 mills (1 for nomadic merchant, 1 local) | 3 mills - 1 broken Two owned by locals, one by nomad |
| Cost | 20 um per Moud | 20 um per Moud | 20 um per Moud |
| Frequency | Once a day | Once a day | Once a day |
| If by hand, time spent pounding | Depends, remove chaff in the morning, then pound in the afternoon | 1 hour in morning, dry in sun and pound in afternoon | 1-2 hours |

| | <u>Geemu</u> | <u>Deebave Corfa</u> | <u>Haasi Caagar</u> |
|--|--|---|----------------------------|
| K. FOOD HABITS | | | |
| 1. Food taboos Religious | None | None | None |
| Pregnant women | None | Tea Ghiri Kossam They have a craving for meat | ---- |
| Children | Avoid foods that cause diarrhea | None | None |
| 2. Weaning foods | Cows butter | Goats milk | Milk Bouilli |
| 3. Other foods for women who have just given birth | Bouilli Soup with meat if can afford | Tea If money, soup with meat | Bouilli |
| Foods for children of non-lactating mothers | Milk | Milk Bouilli | Milk |
| Foods for sick | Bouilli | Bouilli | Bouilli |
| 4. Breastfeeding duration | 1-2 years | 2 years | 3 years |
| How weaned | ---- | Given food by 7-8 months | Start weaning at 8 months |
| 5. Care of children while women work | Girls | Girls or carried on back | Elderly or carried on back |
| L. WOMEN'S FARMING ACTIVITIES | | | |
| Access to land | Vegetable garden | No (Note: interview incomplete) | Farm decru on dieri |
| Owned/borrowed | ---- | ---- | Owned |
| Irrigated/rainfed/ recession | Goufoure? (<u>not</u> Dieri) Decrue | ---- | Decrue on Dieri |
| Changes with drought | ---- | ---- | ---- |
| Crops grown, grains | Rice traditional Maize Fela Souna | ---- | Fella Rice |

| | <u>Geemu</u> | <u>Deebaye</u> <u>Corfa</u> | <u>Haasi</u> <u>Caagar</u> |
|---|--|--------------------------------|---|
| Vegetables | Peanuts Cotton Indigo Cabbage Lettuce Beets Carrots Turnips Potatoes | ---- | Peanuts Okra Hibiscus Indigo Cotton, all in this season |
| Changes in crops grown | ---- | ---- | None |
| Consumed/marketed | ---- | ---- | Some eaten Some sold according to need |
| Problems | ---- | ---- | Water "Materials of work" |
| Changes in women's farming with outmigration of males | ---- | ---- | None, except plastering |
| Desired interventions | ---- | ---- | ---- |
| Livestock ownership Which animals | ---- | ---- | ---- |
| Products consumed/ marketed | Eaten or sold according to necessity | ---- | ---- |
| Animals consumed/ marketed | ---- | ---- | ---- |
| M. MARKET GARDENS | | | |
| Organization | Coop - work in groups of 5 Seeds from Selibaby | None | None |
| Seasonality of crops grown | Growing Souna in the garden during this period Vegetables in dry season | ---- | ---- |

| | <u>Geemu</u> | <u>Deebay Corfa</u> | <u>Haasi Caagar</u> |
|---|--|--|---|
| Consumed/marketed | Part consumed, the part sold goes back back to coop funds | ---- | ---- |
| How marketed | Geemu and Selibaby | ---- | ---- |
| Source of water | Well | ---- | ---- |
| Constraints | Insect Bird and Monkey problems | ---- | ---- |
| General observations Areas of research | Have access to extension and materials | "Poor" because no market Women do <u>no</u> farming, <u>no</u> vegetable gardening, no wild foods left Desire: market, water PMI and dispensary Plant wild food trees School Open a women's center (sewing) Credit access | "Poor" because no markets Recommend: market garden CAC, PMI, dispensary School Transport Mills Market Water source |

CONSUMPTION SURVEY

Suufi

Kininkumu

Silla

Population: about 470 - 500
Maure

Population: 350 households
Soninke, Halpulaar, Maure

A. MARKETS

Location

None
Boutiques

None
Boutiques

Here, small

Type of market
(periodic, etc.)

NA

NA

Permanent

Food prices

Available:
Cereals
Sugar
Oil
Peanuts

Rice, 40 um per kg.
Dry fish, 150-200 um per kg.
Oil, 120 um per l.
Sugar, 200 um per packet
Tea, 100 um per packet

Available here:
Rice
Fish (sometimes)
Meat
Milk
Niebe
Pepper
Haco
Onions
Sugar
Tea
Mostly buy in Kaedi

65

B. FOOD PURCHASES

Items purchased daily

Cereals
Rice
Sugar
Tea

Cola nut
Tea

Oil
Rice
Fish if available
Tomato paste
Milk (powdered and soured)

Articles purchased
less frequently
(2 or 3 days)

Dried fish can only be bought
in Selibaby
Lack of money

Rice
Dried fish
Oil
Sugar

Women take turns going into
Kaedi to buy dried fish

C. BARTER

Food exchanged

Cereals for rice or oil

Cereals for rice, dried fish,
oil but give corresponding
quantity

Rice for milk

With whom

Merchants

Merchants

Women of the village

| | <u>Suufi</u> | <u>Kininkumu</u> | <u>Silla</u> |
|--------------------------|--|---|---|
| Frequency | Very frequent | Very frequent especially during rainy season | ---- |
| D. FOOD SHARING | | | |
| Who | Within household | Within household | Shared outside family, done discretely (man will go to eat with his friends, woman with hers) |
| What | All meals | All meals | Meals |
| How often | All meals | All meals | ---- |
| E. FOOD DONATIONS | | | |
| Organization | Government | Government | CSA |
| Quantities | Whole village: 2 sacks of 50 kg. Wheat 5 sacks of 50 kg. Maize Cloth-one skirt and shirt to each person, but not whole village (used clothes) | 2.5 l. oil per household 1 sack (50 kg.) wheat or M'Boderi and 1 sack milk for 7 people This year: 2.5 l. oil per household 1 sack (50 kg.) Wheat per 7 people | Per household: 2 kg. Wheat Butter 1 kg. powdered milk |
| Most recent | ---- | ---- | May |
| Frequency in last year | None this year Once last year | Once this year Twice last year | 3 times |
| F. GATHERED FOODS | | | |
| Kinds and where found | Mourtode Tongue | Mourtode Fa Pain de Singe | Oulo Others decreased due to drought or bought in market (eg. Pain de Singe comes from Casemance in Senegal) |
| How often | Once a year | Once a year | Rare |
| Availability by season | Dry season | Dry season | Guidjile later Oulo not |

| | <u>Suufi</u> | <u>Kininkumu</u> | <u>Silla</u> |
|--|---|---|--|
| Preferences | ---- | Baobob because can make sour milk by adding to fresh milk | Don't like wild foods much Not hungry enough Do gather some medical plants |
| Sale | Yes | No | Buy guidjile |
| G. STORAGE AND PRESERVATION | | | |
| Products stored | Nothing | Souna Fela | Sorghum (Fela) Maize Millet |
| Types of storage | Storerooms and mud granaries | Granaries Bancos | ---- |
| When stores depleted | 5 months ago | Depends on production and size of family | Most 1 month ago, some much longer |
| Causes of loss | Larza ? (Maures) | Gnigno (S) ? | ---- |
| H. SEASONALITY OF CONSUMPTION | | | |
| 1. Foods in short supply in this season | Rice Cereal Fish | Dry fish Sugar Peanuts Oil | Meat Fish from Nouakchott and Senegal Dried fish from Nouadibou but supply irregular |
| 2. Coping with shortages Substitute foods | Bouilli | Keep part of harvest Bouilli with milk and sugar | ---- |
| Selling personal items | Sell gold, cloth, clothing Have to feed oneself first because you can't do anything if you don't eat | Cloth Gold | ---- |
| Number of meals reduced | 3 meals | Reduce quantity Reduce or skip breakfast | No, always 3 even if reduced |
| Off-farm work | None because now children are going to school (so no money) | Plastering Grow indigo | Remittances from Senegal, Gabon, Burkina Faso |
| Other income for food purchase | Weaving Natte and Khapta (Moor women weave thick mats from tree twigs) | Remittances | Weaving Dying Small commerce resell vegetables, grain in Kaedi |

| | <u>Suufi</u> | <u>Kininkumu</u> | <u>Silla</u> |
|--|--|--|--|
| Credit (borrowing food from merchants) | Credit available | Yes | ---- |
| What merchants | Debaye (neighboring village) | Local | ---- |
| Borrowing from friends/relations | No | Yes | ---- |
| 3. Disease types | Diarrhea Guinea worm | Diarrhea | ---- |
| Diarrhea prevalence | ---- | All year | Not all children Problem during teething |
| Ratio of live to dead children | ---- | ---- | Estimated at 30% |
| Treatment for diarrhea | Milk | None | ---- |
| Other treatments | Guinea worm: Heat a knife and burn the infected area | None | Medicinal plants |
| 4. Water source | Marigots Bore Hole | 3 government wells and each family has well to water animals (10-12 wells) | 2 wells (built by village 1984) |
| Seasonal variation | Lowers during dry season | ---- | Not enough for whole village |
| Changes in well level | No wells only bas fonde of 1.2 m. deep | None | ---- |
| I. FOOD PREFERENCES | | | |
| Meat/Fish | Beef Goat Sheep | Meat (goat) | Meats |
| Cereals | Fella Guediko Souna | Fella Souna Maize | Fella Maize Millet (Mafe is preferred dish) |
| Qualities desired in cereals | ---- | ---- | |

| | <u>Suofi</u> | <u>Kininkumu</u> | <u>Silla</u> |
|--|---|--|---|
| Why some preferred over others | These are the cereals grown and adapted to their milieu | This is what they grown Easy to cook Maize is hard to cook but good as Bouilli | Prefer taste of Sorghum, Maize, Millet over rice but rice easy to prepare, corn hard No choice all they have is rice |
| Food preferred if more money | Rice with meat Cereal with meat | Rice Meat Fish Mafe (Peanuts) or Mafe Domada | Meat Fish Sorghum Millet |
| J. FOOD PREPARATION | | | |
| Major dishes and ingredients | ---- | ---- | Bouilli (Wheat, Rice, Sorghum) Gateaux with fish |
| Meals eaten and quantities (1 household) yesterday | | | |
| <u>Breakfast</u> | Leftovers from night before Couscous Haco | Leftovers from dinner If money make Bouilli | Coffee and bread Couscous (rice, maize, sorghum, millet) with Naco) |
| <u>Lunch</u> | Mafe Takhye (Maur) (made with lalo as sauce ingredient) Rice with dry fish | Mafe (2 pm) made with dry fish, peanuts and ground okra Served on rice of Gniri | ---- |
| <u>Dinner</u> | Couscous bassi Couscous haco | Couscous bassi Couscous haco | ---- |
| <u>Snacks</u> | ---- | ---- | ---- |
| Preparation techniques When | ---- | ---- | ---- |
| Time spend getting fuelwood | 3-4 hours | 7 hours because far from village | Men's work |
| Water | 3-4 times a day | 3-4 times a day | ---- |
| Amounts local measures (per person) | ---- | ---- | ---- |
| 4. Access to grinding mills Where | None | 1 mill but broken | None here, must go to Kaedi |

| | <u>Suufi</u> | <u>Kininkumu</u> | <u>Silla</u> |
|--|---|--|---|
| Cost | NA | Was 15 um per Moud | ---- |
| Frequency | NA | Once a day | ---- |
| If by hand, time spent pounding | 3-4 hours | 2-3 hours | ---- |
| K. FOOD HABITS | | | |
| 1. Food taboos Religious | ---- | ---- | ---- |
| Pregnant women | Badioungou (P, S) (grains not pounded, boiled and mixed with salt and sugar) "Childrens food" | Salt - if makes them vom: stop eating it | ---- |
| Children | Red pepper Dirt | Haco gives them diarrhea | ---- |
| 2. Weaning foods | Milk Bouilli | Milk Bouilli | Milk Bouilli (rice, wheat) Solids foods at 18-24 months |
| 3. Other foods for women who have just given birth | Soup with meat Bouilli Gniri takhye Couscous | Soup with meat, potatoes Couscous Coffee (Meat is scarce) | Bouilli Husband buys meat Also regular foods |
| Foods for children of non-lactating mothers | Milk | Milk | Milk Goats milk |
| Food for sick | Bouilli | Milk | ---- |
| 4. Breasfeeding duration | 2 years | 1-2 years is normal Some 6 months | 18-24 months |
| How weaned | Start at 7-8 months | Can give food while breastfeeding but some women don't | ---- |
| 5. Care of children while women work | Themselves | Elderly | ---- |
| L. WOMEN'S FARMING ACTIVITIES | | | |

| | <u>Suufi</u> | <u>Kininkumu</u> | <u>Silla</u> |
|---|---|---|--|
| Access to land | ---- | ---- | Women help or rice perimeters and on household fields (weed, guard fields, thresh) |
| Owned/borrowed | Owned | Owned | ---- |
| Irrigated/rainfed/recession | Walo - decrue | Dieri - decrue | ---- |
| Changes with drought | ---- | ---- | ---- |
| Crops grown grains | Fella Guediko Souna | Fella Souna | ---- |
| Vegetables | Peanuts Okra | Okra Hibiscus Peanuts Indigo Cotton | ---- |
| Changes in crops grown | ---- | ---- | No more indigo |
| Consumed/marketed | Some eaten Some sold according to need | Both according to need | ---- |
| Problems | Water | When lots of water the seeds get wet and plants lodge | ---- |
| Changes in women's farming with outmigration of males | ---- | Plastering Indigo | Men send money for wage labor but women may take charge |
| Desired interventions | "Materials of work" Seeds Fences Services to protect crops | ---- | Notes: After harvest, man sells part to repay debts, gives share to neighbors who helped, rest given to women to manage. If husband gives no money for ingredients, she sells part Divided among wives, take turns cooking |
| Livestock ownership White animals | ---- | Men own sheep, goats, camels | ---- |
| Products consumed/ marketed | ---- | Both | ---- |

| | <u>Suufi</u> | <u>Kininkumu</u> | <u>Silla</u> |
|---|--|---|--|
| Animals consumed/ marketed | ---- | Both as is necessary | ---- |
| H. MARKET GARDENS | | | |
| Organization | No vegetable garden but grow henna | All women work each day Women bought seeds and tools | Coop garden (1 ha.) 100 women Work together on Fonde land Have <u>tractor</u> |
| Seasonality of crops grown | ---- | Carrots Cabbage Eggplant Okra Onions Potatoes All in dry season | Planted in October - nothing now |
| Consumed/marked | ---- | Both | Some consumed Some sold here and in Kaedi |
| How marketed | Selibaby | Selibaby in kg. lots | Here, Kaedi |
| Source of water | Marigot | Well in garden | Watered by hand |
| Constraints | ---- | Protection of vegetables Work materials Water | Would like a pump |
| General observations Areas of research | Problem with Guinea worm "Poor" because no market, boutiques not well stocked Have a cooperative Desires: Market PMI, dispensary School Transport Market garden Water Mills Plant trees of wild foods Transport Credit | Sunk a well in vegetable garden Have an extension worker to teach them how to grown vegetables "Rich" near Selibaby and boutiques stocked Desires: Mills Market PMI, dispensary Transport Womens center Credit | Would like sewing/dying coop |

CONSUMPTION SURVEY

Fonndu

Sevven

Sabualla

Population: 570 households
Halpulaar
Moors - Seasonal

Population: 105 households
All Peuhl except 3 Maure
households

Population: 342
4 neighboring villages
Total all = 650
Maures (majority) and
Peuhl
PMI, Groison Rouge

A. MARKETS

Location

No, old one damaged
Go to Kaedi

None
Go to Kaedi

No
Go to Bababe, Boghe and
Harinbar
1 km. 3 boutiques

Type of market
(periodic, etc.)

Food sold all over village

Merchants come into village
and sell from time to time

Food prices

Sorghum, 100 um per Moud
Rice, 35 um per kg.
Wheat, 80-100 um per Moud
Niebe (at Kaedi) 40 um kg.
Fish, fresh 50 kg in Kaedi
Here, 3 small 70-80 um
1 large 200-300 um
dried 150 kg.
Sugar, 100 um pack
Tea, 100 um pack
Onions, 40-60 um kg.
Pepper, 700 um kg.
Milk, 100-120 um kg.
Peanuts, 10 um small glass
(tea glass)

Here in village can now buy:
Rice, 35 um kg.
Oil, 80 um litre
Sugar, 115 um per packet
Buy fish in Kaedi

Small boutiques but now only
Tea, 80 um
Sugar, 90 um
Sometimes bread
Usually rice, oil, fish
dried (1 small 5 um)
In other market buy rice,
40 um kg.
Wheat, 80 um per Moud

B. FOOD PURCHASES

Items purchased daily

Fish
Oil
Pepper
Tomatoes
Onions and vegetables in
season
Go to Kaedi as often as
possible
Some women buy fish in
Kaedi and resell here

Rarely go to Kaedi daily

Rarely daily
Buy milk from Peuhls here if
available

| | <u>Fonndu</u> | <u>Sevven</u> | <u>Sabualla</u> |
|--|---|---|---|
| Articles purchased less frequently (2 or 3 days) | Tea Sugar Coffee Buy sacks of Millet every 10 days 100 kg. sack costs 3000-4000 um | Tea Sugar Dried fish Oil Rice (Go in to sell milk and buy food with the proceeds) | Wheat Rice Sugar Oil Dried fish |
| C. BARTER | | | |
| Food exchanged | Millet for milk, meat, jujuge Mureau blanc, Oulo that is wild (1/2 kg. millet for 1 basket Oulo) | Prefer to deal with cash | Trade wheat for milk with animal owning Peuhls of this area |
| With whom | Nomads for milk and meat and some wild foods Neighboring villages for Oulo Oulo-Moors sell it, not them | None | Peuhl in this village and nomads |
| Frequency | 2-3 times a week | No | 2-3 times a week |
| D. FOOD SHARING | | | |
| Who | Share within extended family May feed elderly or young outside immediate household | Share within the extended family - across several households | Share with related households also within village |
| What | Meals | ---- | All foods |
| How often | No regular pattern When food is needed | Irregular - need | Frequent |
| E. FOOD DONATIONS | | | |
| Organization | Red Crescent | Red Crescent | Red Crescent child feeding program - 110 children 1-4 years, 15 women cook |
| Quantities | 90 sacks (50 kg.) Wheat Last time only 100 households received about 20 kg. Usually each household 1/2 sack | 3 days ago brought dried fish refused to eat 2 months ago only 4 sacks (50 kg.) Wheat Usually 20 sacks Wheat 4 sacks powdered milk 4 litre oil for whole town | Rice 18 sacks (50 kg.) Powdered milk 2 sacks (50 kg.) Dried fish 1 sack (50 kg.) Wheat 10 sacks (50 kg.) |
| Most recent | May | 3 days ago | 1 month ago |

FonnduSeyvenSabualla

Frequency in last year

Every 3 months usually

25 sacks (50 kg.) in all
twice this yearComes every month but
sometimes 2 months at a
time**F. GATHERED FOODS**

Kinds and where found

Guidjile eaten but distant
(1 days walk) so trade
Paguiri not in season
Difficult to use and
Separate grain
Oulo prime food now
1/2 kg. of millet for large
handful of Oulo
Jujube traded

Guidjile fruit
Jaabe fruit
Murtoode fruit
Keeleniibe fruit
Keelenai fruit
Paguiri seed
Sorbadde root crop
Kebbovi Diji haco
Tupere young haco
Kopguelodi haco
Oulo
Guilgata, ndafeji
(wild potato)

Kirkache wild melon
Guidjile here
Jujubes
AZ perhaps fonio, very small
grass seed
Murtodes (touga in H.)
Keelenai (Mejij-H)

How often

Buy or trade Oulo daily in
this season

Oulo most days
Guidjile when ripe peel and
eat as fruit - dry, then
pound to remove skin -
soak 2-3 days, eat seed
Kopguelodi former inhabited
area
Koylouye herders

Now every night
Eaten only for evening meal

Availability by season

Most wild foods now available

More this season
Niebe leaves now becoming
available

AZ available at harvest
season
Keelenai not now
Others now, important to diet

Preferences

Quinqueliba is now available
but they don't use it

Oulo and other kinds at haco

Oulo available but not eaten
gives stomach trouble
Whatever they find

Sale

They purchase - not much
gathering themselves

No, the nomads sell
they gather to eat

No, gather for consumption

G. STORAGE AND PRESERVATION

Products stored

Niebe
Millet
Watermelon seeds
Sorghum

Grains: Millet
Wheat
Sorghum, stored
together
Niebe stored separately

Grains: Souna or Millet
(Moutri)
Sorgho: Tagalit (red)
(Fela)
Bichine (large grain)
Niebe

| | <u>Fondu</u> | <u>Seyven</u> | <u>Sabualla</u> |
|--|---|--|--|
| Types of storage | ---- | <u>Sakeje</u> raised floor, woven stick walls, thatch roof for grains Niebe in sacks, also banco | Some processed and stored in sacks |
| When stores depleted | Since May | 5-6 months ago | 1-2 months after harvest |
| Causes of loss | Rain damage Crickets Rats | Birds Rats Crickets | Rats Mice Larawa or termites |
| H. SEASONALITY OF CONSUMPTION | | | |
| 1. Foods in short supply in this season | Peanuts Niebe Haco - cowpea leaves Millet Watermelon seeds Moume (roasted millet) This season is <u>lowest</u> supply | All sorts of grain except rice Wish they had more milk All foods have to be purchased | Everything in short supply Especially grains Want more milk Need more food Wheat |
| 2. Coping with shortages Substitute foods | Eat same foods all year Different quantities More rice now | Eat more wild leaves now Julo If no fresh mi. buy powdered | Use many wild foods especially this season |
| Selling personal items | Women have had to sell gold, jewelry, cloth | Yes, sell jewelry and clothing to repay merchants in Kaedi | Women go to Boghe to sell their gold |
| Number of meals reduced | Now many only eat 2 meals Most 3 | Often now eating 2 | No, mostly 3 |
| Off-farm work | Men work outside village Remittances are crucial | Selling milk every 2-3 days 1-2 litres for 30-40 um Before lots of cows, 40 1 l. of milk for 300-400 um daily | Men are here during harvest Young are gone Some with families |
| Other income for food purchase | Women sell their personal crops for income including vegetables | Men suppose to give 1000 um a month but often not - sell milk | Women weave mats (nate) of fiber and leather - for 1.85 m. mat get 8000 um for smaller 5000-6000 um Also sell charcoal mainly during dry season but in small quantities |

| | <u>Fonndu</u> | <u>Sevven</u> | <u>Sabualla</u> |
|--|---|--|--|
| Credit (borrowing food from merchants) | Credit up to 10,000 if good customer, though mostly about 1000 Repay if remittances, sale of crops, or if late, sell jewelry | Borrow from Kaedi but most 1000 um - no interest but repay promptly Borrow from friends and relatives or sell jewelry | No credit |
| What merchants | Local | Kaedi | None |
| Borrowing from friends/relations | Women travel to Dakar and Nouakchott to borrow money from family - gone 7-30 days several times a year | Yes, to repay debts | ---- |
| 3. Disease types | Everyone sick now (children and adults) Diarrhea Whopping Cough Flu Malaria | Coughs Fevers Eye problems, especially children | Stomach problems and diarrhea Fever Cough Colds Headaches Joint aches |
| 77 Diarrhea prevalence | Very common now especially children | All year long - not more now | ---- |
| Ratio of live to dead children | ---- | ---- | 2:0 4:1 7:1 |
| Treatment for diarrhea | Bouilli (rice) Biscuit dipped in milk Pain de Singe in water | Biscuits in milk Pain de Singe | Some medicines available here through PMI (Croissam Rouge) If serious go to Babave |
| Other treatments | To ease labor boil Chekirijeri (bark of tree) and drink | <u>Lalo</u> for headaches <u>Eye and cough</u> go to PMI in Kaedi | Have both primary health aide (since 1984) and a socoriste (since 1984) |
| 4. Water source | 3 wells of drinking water 4 wells too salty | Well - 22 m. | Small wells but main well never finished |
| Seasonal variation | Always water available - deep well | Lower in dry season - herders use | Very difficult in dry season May go 24 hours without water Some move closer to the river Some use water in Marigots but recognize this is an unclean source (people bathing, animals, etc.) |

| | <u>Fonndu</u> | <u>Sevven</u> | <u>Sabwalla</u> |
|--|---|--|---|
| Changes in well level | May have dropped but still adequate | Not over time - well had to be reinforced | ---- |
| I. FOOD PREFERENCES | | | |
| Meat/fish | Goats and sheep preferred Also like fish | Goats and sheep preferred over fish but eaten rarely | Prefer sheep but may go a long time without eating it |
| Cereals | Millet Now eat more rice than they like | <u>Fella</u> sorghum is more preferred than Same Millet | Fela Bichinela |
| Qualities desired in cereals | Ease of preparation Maize and fonio difficult to process | Ease of preparation Taste | Believe that fela and bichinela prevent sickness |
| Why some preferred over others | Mainly taste - Millet preferred Pounding difficulty Millet easier to grow Maize made into bouilli not couscous | Wheat too hard to prepare so prefer sorghum or millet Least preferred is <u>Gaouri Boderi</u> (red sorghum) but still prefer over rice or wheat | ---- |
| Food preferred if more money | Meat Fish Milk | Cereals, especially sorghum even if low quality Milk powder Oil | Meat Milk |
| J. FOOD PREPARATION | | | |
| Major dishes and ingredients | Couscous with cowpeas, peanuts or watermelon seeds Rice with fish, tomatoes Mafe (wheat) if they get peanuts Bassi - couscous and milk Salade when vegetables are available Lathiry with leaves of cowpeas | Couscous made of various grains with milk or haco Rice with oil and dried fish <u>Bouilli</u> with rice or other grains, sugar and milk <u>Gniri Chakiri</u> steamed dumplings of cereal mixed with water and milk (easy to make) | <u>Couscous</u> of rice, wheat, millet or sorghum with haco or milk <u>Rice</u> with oil, dried fish <u>Bouilli</u> of wheat and milk |
| Meals, what eaten and quantities (1 household) yesterday | | | |
| <u>Breakfast</u> | Coffee when first get up Around 9-10 make bouilli if grain, otherwise just coffee | Coffee - eat bread only when go into Kaedi <u>Bouilli</u> of rice and sugar if available | Cake made of wheat flour and salt, add milk if available |

| | <u>Fondu</u> | <u>Seyven</u> | <u>Sabualla</u> |
|--|--|---|--|
| <u>Lunch</u> | Rice with dried or fresh fish Nire-boiled cowpeas Bouilli Moume (roast wheat) | Mainly rice, oil and fish Also <u>Bouilli</u> with rice or other cereals and sugar | Rice, meat or fish, oil In other seasons, eat sorghum and millet |
| <u>Dinner</u> | May skip dinner if no food <u>Couscous</u> with cowpeas | If sold milk buy <u>naco</u> and make with couscous Otherwise couscous with milk (either rice or millet) | Couscous of wheat with milk with <u>naco</u> or with <u>jaga</u> a mixture of naco <u>Kircache</u> and melon (eat the seeds dried plus the meat and the leaves) |
| <u>Snacks</u> | Tea for adults Children eat jujubes mureau blanc | Not many - tea wild fruits for children | Mourtode and Jujube for children mainly |
| Preparation techniques When | If begin cooking by 12 food ready by 2 pm Dinner only 1 - 1/2 hours | Lunch from 12 - 2 Dinner also 2 hours | Takes 1-2 hours at midday, same at night Depends on size of family |
| Time spent getting fuelwood | Gather some but also buy 10-25 um a bundle | If go with donkey enough for 4-5 days in 1/2 day Otherwise a day at a time | Go out into bush and collect enough for 5 days Also make some charcoal |
| Water | 5 or 6 times a day to well Girls (10-12 years) | Well is close by | Problem with water Frequent |
| Amounts of local measures (per person) | Up to 8 Mouds for large house | Large family (6-8 women) 1 1/2 Moud (6 kg.) | 6 kg. a day to feed a family of six |
| 4. Access to grinding Mills Where | Here Private | Only in Kaedi | None here One in Babave |
| Cost | 20-40 um per Moud | 20 um a Moudou When buy grain, have it ground | 14 um for a Moudou |
| Frequency | Every day | In visits to Kaedi, twice a week | When have wheat, irregular At the most once a week |
| If by hand, time spent pounding | Several hours | Rest of week, twice a day 2 hours each time | 1-2 hours for lunch, slightly less for dinner Depends on size of household |
| K. FOOD HABITS | | | |
| 1. Food taboos Religious | No pork, dog, donkey, horse, wild animals | None | No pork |

| | <u>Fonndu</u> | <u>Seyven</u> | <u>Sabualla</u> |
|--|---|--|--|
| Pregnant women | No rabbit | Craving to eat dirt but bad for baby Can eat anything but some foods may make them sick | Some stop eating rice and fish because makes them sick but not tabooed Encourages to eat rice with milk |
| Children | As of 2 years nothing taboo | None | ---- |
| 2. Weaning foods | All adult foods, no special dishes | Given <u>Bouilli</u> made of rice milk But also adult foods | Meat Potatoes Carrots Milk Most adult foods in small quantities |
| 3. Other foods for women who have just given birth | Tea made with chekirigri bark to ease labor | None | Make a bouilli of wheat flour with salt, sugar and milk |
| Foods for children of non-lactating mothers | Give solid food and bouilli early on Milk | <u>Bouilli</u> and wheat | Animal milk that has been heated and cooled add sugar |
| Foods for sick | ---- | ---- | No special foods |
| 4. Breastfeeding duration | About 1 1/2 - 2 years | Some as early as 6 months if pregnant Usually 2 - 3 years | 18 - 24 months |
| How weaned | Abrupt | Abrupt but given solid foods from 1 year or so | Very abrupt, done overnight |
| 5. Care of children while women work | Girls (10-12 years) Women carry small babies | Given to old people to care but infants carried on back | ---- |
| L. WOMENS FARMING ACTIVITIES | | | |
| Access to land | Family | Only garden plots | Women cultivate own lands |
| Owned/borrowed | Inherited | None | Some inherited Some rented (share of harvest given to owner-village Halpulaar) |
| Irrigated/rainfed/recession | Dieri | None | Dieri belongs to them Chamana (Falo?) sharecropped (Halpulaar owners) |

| | <u>Fonndu</u> | <u>Seyven</u> | <u>Sabualla</u> |
|--|---|---|--|
| Changes with drought | None | Help in family fields, plant weed, scare birds, help harvest | Some fields no longer cultivated because of drought |
| Crops grown, grains | Millet Niebe | ---- | Cereals - Souna Tagalit Bichine |
| Vegetables | Watermelon Vegetables | Tomatoes Salade Potatoes Onions Peppers Beets Cauliflower Eggplant Hibiscus <u>Gaud</u> minor cereals eat stalks <u>Gongome</u> mintlike for tea | ---- |
| Changes in crops grown | None | Vegetables started last year | ---- |
| Consumed/marketed | Sell if need money, most consumed | ---- | All consumed |
| Problems | No rain Insects Too much work | ---- | No rain |
| Changes in womens farming with outmigration of males | Work too hard now "Back hurts all the time" | Help in dieri | Woman must do more work with her children, may even harvest alone if husband does not return Help from children |
| Desired interventions | Would prefer not to farm - rather have handicraft centers | ---- | Want a vegetable garden to expand diet but have no water |
| Livestock ownership White animals | The womens animals have mostly died A few chickens | ? | Women have livestock Some men own |
| Products consumed/ marketed | ---- | Sell milk but diminished supply Go to Kaedi once a week to sell milk and buy sugar, tea, fish | |

| | <u>Fonndu</u> | <u>Seyyen</u> | <u>Sabualla</u> |
|--|--|--|--|
| Animals consumed/ | ---- | ---- | NA |
| M. MARKET GARDENS | | | |
| Organization | Coop garden but each woman owns share Pay dues (5 um a month) | Individual plots within garden of 30 x 26 m. Each plot 2 x 1 men and women | None |
| Seasonality of crops grown marketed | Only vegetables, not this season: Cabbages Onions Tomatoes Carrots Turnips Eggplant | Are growing vegetables all year now almost all eggplant Few pepper, tomatoes, <u>lalo</u> , <u>gaoud</u> , watermelons, <u>gongome</u> Rest in cool season | NA |
| Consumed/marketed | Some sold Some eaten | Some sold Eat some | NA |
| How marketed | ---- | Kaedi | NA |
| Source of water | Well - paid for by women | Well, 6-10 am and again 3-5 pm | NA |
| Constraints | Seeds, some from government Made fence themselves | Work in drawing water Seed availability | NA |
| General observations Areas of research Extra Notes | Would like handicraft center Have dispensary but not staffed Concern about childbirth Want PMI Want help with garden - started themselves <u>Coop boutiques</u> funded from remittances Started with 95,000 um but not really enough to get coop going Sell mainly oil and rice Available even to outsiders Buy on market and resell at lower price (5-10 um above controlled price) Only 4-5 sacks remaining divided in 3:seller, the coop members, cooperative | Young people put up fence Garden for whole village (men and women) Each household 1 1/2 plots Help from extension in setting up plots, how to plant Came 3 days ago with insecticides Applied goat manure PMI midwife here Also <u>child feed program</u> : grain collected from village, milk bought in Kaedi Women take turns cooking for 50 children aged 3-6 years old Basis for selection-children in need All village contributes Want another well to expand gardens | CSA free food in addition to CAC: Every 2-5 month 50 kg. Wheat 5 kg. Butter 3 kg. Powdered milk Given to those without anything Note on CAC: (saw old woman being given good) Want more support for child feeding |

CONSUMPTION SURVEY

Save

Population: 150 households
Halpulaar
PMI with sage femme
No infirmary

MBooto

Population: 2100-2500
Halpulaar
Moor
! dispensary (with infirmiere)
1 CAC

A. MARKETS

Location No permanent market

Type of market (periodic, etc.) From time to time merchants bring in food to sell and set up under a tree

Food prices Here:
Oil, 1 l. 96 um
Tea, 1 packet 75 um
Sugar, 1 pack 85 um
Bread, 10 - 20 um
Tomatoes 120 um for 1 kg. can
Chicken, big cock 300 um
smaller, 150 - 200 um
Boghe
Rice, 32 um per kg.
Wheat, 20 - 22 um per kg.

One small market, permanent
Used to be two

Now not enough food coming from outside to support two

Not much available now
Rice, 35 um per kg.
Millet, little left, 20 um per kg.
Fresh fish 50-200 um per kg.
Dried fish, 60-70 um per kg.
Sugar, 90 um for box
Tea, 30-35 um per box
Peppers, 1 tea glass for 15 um

B. FOOD PURCHASES

Items purchased daily Here can buy oil, tea, sugar, bread, canned tomatoes, lait calle, chickens, dried fish
Some village women make lait calie with powdered milk to sell here

Articles purchased less frequently (2 or 3 days) Wheat and rice, if money is available buy in bulk
Also can buy tea and sugar in larger quantities if available

Coffee
Tea
Bread (baker in town)
Sugar

Fish, fresh and dried
Fresh fish brought to town from Nouakchott twice a week
Sacks of grain:
Millet 3200 um for 100 kg
have it milled in Mbagne if enough money

C. BARTER

Food exchanged Exchange millet for milk or salt for milk

With whom With neighbors and with outsiders

Cereals for rice or for milk

Nomads, other women in village, women of neighboring villages
No wild foods

| | <u>Saye</u> | <u>MBootu</u> |
|--------------------------|---|---|
| Frequency | Rarer now Mostly money | Frequent |
| D. FOOD SHARING | | |
| Who | Nowadays there is little to share, everyone in need | Only within the family If borrow from neighbor must repay |
| What | ---- | Whatever is needed |
| How often | Rarely | Irregular |
| E. FOOD DONATIONS | | |
| Organization | PMI - child feeding program Also for households | CSA - list submitted of needy Also CAC (Croisson Rouge) |
| Quantities | Wheat 50 kg. Milk 50 kg. Butter 5 kg. | Wheat 1/2 sack Butter 2 1/2 kg. Milk 1 sack Shared by 10 households Having to share rations |
| Most recent | 3 months ago | 2 months ago |
| Frequency in last year | Every 2 - 3 months | Every 3 - 6 months |
| F. GATHERED FOODS | | |
| Kinds and where found | <u>Guidjile</u> <u>Moutodes</u> fruit and seeds <u>Jaabe</u> <u>Oulo</u> <u>Saphato</u> (vine that climbs trees, eat leaves) <u>Regio</u> tree eat leaves <u>Kopigelodi</u> "camels knees" leaves <u>Noefelbalou</u> "sheep ear" leaves <u>Sinomonogoen</u> vine eat leaves | <u>Murtodes</u> ready November, December <u>Guidjiles</u> ready November, December <u>Jaabe</u> ready November, December <u>Tabbe</u> water plant, eat roots which are under water and seeds above water - seeds called <u>Ndairi</u> ready at end of rains <u>Pagvirri</u> and <u>Foleri</u> <u>Baobob</u> all dead <u>Oulo</u> lots now |
| How often | Only with rains or in perimeters Now everyday for close by Make longer trips every 3-4 days Less important now because of niebe and cabbage - these are <u>easier</u> to get | All year round Everyday now <u>Foleri</u> available in walo and dieri from rainy season through walo |
| Availability by season | Now for wild, some growing in perimeters at other times | Now mainly leaves but use mainly leaves from marigot plants |
| Preferences | Now prefer cultivated leaves but still like wild if not too hard to find <u>Oulo</u> | <u>Pagvirri</u> valued, last year good crop up to several sacks per household Has to be pounded 2-3 times |
| Sale | No | No |

| | <u>Save</u> | <u>MBooto</u> |
|---|---|---|
| G. STORAGE AND PREVENTION | | |
| Products stored | Rice "my granary is my pocket" Stores don't last long, must sell to repay debts, buy personal items | Same Sevvil Millet <u>Diameri</u> , millet grown in dieri, none left |
| Types of storage | Rice put in bags, raised off ground on pieces of wood Pour "powder" to keep out pests | Store millet and sorghum on stalk Process as it is needed |
| When stores depleted | Rice gone 1-2 months ago | Some Same left, most gone 4-6 months ago |
| Causes of loss | Insects Termites | Mice Insects not much of a problem |
| H. SEASONALITY OF CONSUMPTION | | |
| 1. Foods in short supply in this season | Niebe (very costly) Sorghum Pasteche Millet Even rice Haco now available year round because of gardens, used to dry leaves for later use | The time of <u>walo</u> is worse than now Now there is at least rice but no sorghum or niebe Wheat only from free food |
| 2. Coping with shortages | All meals require cereal | <u>Paguiri</u> substitutes for cultivated grains |
| Substitute foods | Now not even wheat because last shipment 3-4 months ago | |
| Selling personal items | Yes, sell jewelry to help support family | Yes, have sold gold and clothing |
| Number of meals reduced | ---- | No, but may have to make smaller quantities |
| Off-farm work | None for women | Men only Women just farmers |
| Other income for food purchase | Sell rice, each morning take out 8 kg. Eat 4, sell 4 kg. for other ingredients *See extra notes | Cotton spinning and weaving by older women |
| Credit (borrowing food from merchants) | No credit | Only men, widows and divorcees can get credit Repay each month <u>no</u> interest Large family 3-4000 um, small 1-2000 um |
| What merchants | NA | Here or in Garolo |
| Borrowing from friends/relations | Borrow from relatives in small quantities but mostly men do that | Yes, frequent, repay when remittances received or after harvest |

| | <u>Save</u> | <u>MRooto</u> |
|--------------------------------|---|---|
| 3. Disease types | Stomach (diarrhea included) and eye problems (Apolo) bad now Also bad teeth and sore muscles | Diarrhea Eye problems |
| Diarrhea prevalence | Diarrhea especially bad right now | Cold season is worse for children although diarrhea more common now |
| Ratio of live to dead children | 3:0 6:2 | Child mortality not such a problem now Old woman - 6 living 2 dead |
| Treatment for diarrhea | Pain de Singe mixed with water and sugar Same pounded Bouilli with rice, no milk | Dispensary gives medicine, told to give bouilli with rice and lots of liquids |
| Other treatments | No infirmary here only a traditional midwife Eye problem, wash carefully, go to clinic | Mostly western medicine |
| 4. Water source | 3 wells (2 private, 1 public) Government well causes sickness in children | Only 1 well, must be shared by drinking, livestock and garden |
| Seasonal variation | Water always available | Always water but long waits (maybe 10-15 women in line) |
| Changes in well level | ---- | None |
| I. FOOD PREFERENCES | | |
| Meat/fish | Meat over fish but little available | Meat of goats and beef but eat mainly fish |
| Cereals | Same preferred but hard to get Millet next Wheat least preferred but free | Same and Millet, both preferred over rice |
| Qualities desired in cereals | Taste | Taste Wheat is hard to process by hand |
| Why some preferred over others | Wheat hard to process | Although prefer taste of sewil it is more prone to bird predation so same is the staple |
| Food preferred if more money | Meat prefer it over fish Milk | Meat Same |
| J. FOOD PREPARATION | | |
| Major dishes and ingredients | <u>Gniri</u> considered poor meal If more money make boiled rice and condiments <u>Gniri</u> can be made with just grains <u>Rice</u> with oil, tomatoes, fish <u>Couscous</u> with haco or with milk | <u>Domadaa</u> rice cooked separately Sauce of oil, tomatoes and fish or meat <u>Loebahal</u> same ingredients all cooked together <u>Couscous</u> of wheat, sorghum, millet with leaves, niebe, vegetables and meat if available <u>Gniri</u> common |

SayeMbooto

Meals, what eaten
and quantities
(1 household)
yesterday

Breakfast

Tea
Bread

Coffee and bread around 8 am
10 am have couscous and niebe
If men in fields women take it out
Also eat leftovers from night before

Lunch

Rice with oil and tomatoes if available
Gniri made with millet or rice, salt added
Dried fish if available

Around 2 pm now eat rice as domada or millet
as Gniri with milk if available or with
leaves if not

Dinner

Couscous of millet, wheat or rice with haco
(leaves of niebe and peanuts) or with milk

Couscous with niebe or with leaves
If not bouilli made with rice
Make extra for morning

Snacks

Not many
Some wild fruits

Jujubes and mourtodes eaten by children

Preparation techniques
When

Twice a day, several hours

Two or three times a daay
May take up to 2 hours each time
Want mill

Time spent getting
fuelwood

Go out everyday
If have cart can collect enough to sell to
other villagers 10 um for small pile

Go out every 3-4 days into bush
Several hours
Now far away - rains

Water

3-4 times a day but not far

Only 1 well, takes several hours a day
Go twice a day

Amounts local measures
(per person)

4-6 kg. depending on size of family

4-5 kg. of grain for 8-9 person household

4. Access to grinding mills
Where

Use Moudo
None here
Would like rice husker

Garolo 4 km. away

Cost

1 kg. 3 um if keep husks/ 2 um if leave

1 kg. 4 um

Frequency

Rare, would have to sell rice to pay for
milling

Depends on money availability

If by hand, time spent
pounding

Rice processed by hand from paddy form
Takes 3-4 hours in morning, another 1-2
hours in evening

Anywhere from 1-3 hours a day depending on
household size

K. FOOD HABITS

1. Food taboos
Religious

Nothing

| | <u>Save</u> | <u>MBooto</u> |
|--|---|---|
| Pregnant women | None | <u>Bouilli</u> is thought to inflate the fetus Also same for <u>lait calle</u> |
| Children | None | Eggs, children may not talk Tea makes them sick |
| 2. Weaning foods | Lait calle or fresh milk Bouilli of rice | Milk from animals |
| 3. Other foods for women who have just given birth | <u>Bouilli</u> of millet or rice Also meat in soup Drink lots of water | Chicken soup <u>Bouilli</u> |
| Foods for children of non-lactating mothers | Same as weaning foods | Milk from cow or goat |
| Foods for sick | <u>Bouilli</u> | None, go to infirmary |
| 4. Breastfeeding duration | 18 months | 18 months |
| How weaned | Some start giving solid food at 4-5 months others not until weaned | Given <u>bouilli</u> (rice, millet, wheat) and lait calle or other milk before weaning |
| 5. Care of children while women work | Mother keeps with her until weaned then young girls | Children left behind after weaning with older children |
| L. WOMENS FARMING ACTIVITIES | Women have both dieri and walo Dieri mainly belongs to only older women | Less than 1/2 of women in village have dieri fields |
| Owned/borrowed | <u>Walo</u> land is divided up as inheritance | Inherited Given use by husband |
| Irrigated/rainfed/recession | Dieri Walo | Only widows and divorced women have <u>walo</u> land: rest only <u>dieri</u> |
| Changes with drought | Women always helped in fields but now may have to do it all | Some fields are worse off than others with drought |
| Crops grown, grains | <u>Dieri</u> only pasteche Planted millet and sorghum but died <u>Walo</u> same, niebe, maize, not well flooded | Niebe Pasteche Same Fela Millet |
| Vegetables | Cabbage Onions Carrots Eggplant Beets Tomatoes Niebe Turnips | Edges of marigot plants for edible leaves |

| | <u>Save</u> | <u>MBooto</u> |
|--|--|---|
| Changes in crops grown | ---- | ---- |
| Consumed/marketed | Almost all consumed but some sold after harvest to purchase other items | Mostly eaten but sold, in small amounts, when money needed |
| Problems | Animal predation Woman bought fence with own funds (82,000 um) but not yet installed | Not enough rain |
| Changes in womens farming with outmigration of males | Women doing more labor on household fields | Women and children often do all <u>dieri</u> work alone |
| Desired interventions | Women want more help with cooperatives Government asked them to start them and then has never returned | Women want another <u>well</u> - very tired of drawing water for garden and domestic use and having to wait <u>Mill</u> too far <u>Vegetable garden</u> too small but water problem |
| Livestock ownership which animals | Women's livestock all gone | Some women own goats, greatly reduced by drought |
| Products consumed/ marketed | NA | Exchange and sell milk |
| Animals consumed/ marketed | NA | Sometimes animals sold if severe cash need |
| H. MARKET GARDENS | | |
| Organization | Coop garden - each woman owns parcel plus coop parcels for funds 100 m ² | Part coop, part individual 200 women, men too |
| Seasonality of crops grown | Most vegetables in cold season (especially cabbage) others in dry season (peppers, tomatoes) Nothing there now, it was all eaten by animals | Grow vegetables December-January Now nothing Cabbage Onions Potatoes Eggplant Turnips Beets Lettuce |
| Consumed/marketed | Most women eat vegetables Coop plots are sold in Boghe | Eat own vegetables Coop sells the common produce |
| How marketed | ---- | Here and in nearby villages |
| Source of water | Canal runs by garden, water by hand with basins | Well |

Save

Constraints

Fence, everything eaten
Inadequate water in 1984-85

General observations
Areas of research
Extra Notes

Coop officially begun 1985 but private gardens before
Government has given little help, some seed is all
Told to organize the no follow-up
Child feeding 65 children a day, every day except Friday
Women take turns cooking (2 per day)
Each day:
 lunch: bouilli 6 kg. wheat 2 kg. powdered milk
 dinner: 6 kg. rice, dried fish from PMI
Women may add fresh fish or meat with own funds
Get supplies every month
Sometimes get 2 months supplies at once
Each delivery:
 5 bags Wheat
 4 bags Rice
 4 cartons of Oil (each 4 cans of 5 l.)
 3 sacks Milk
 Dried fish
Mothers buy sugar themselves
Food arrives in Boghe, women must go in and pay for milling and transport themselves
Coop of 106 to buy fish in Boghe, distribute to members and sell excess here and in other towns
Also fresh fish if available
Some sell free food, wheat to meet cash needs
Women have sewing and dying coop
Make handcrafts
Self initiated
Bubu sold for 700-800 um but small profits

MBooto

Water - only 1 well, water twice a day

Trying to collect money to buy a mill
Consider pounding a very strenuous task
CAC (Center Alimentaire Communautaire) everyday except Friday
Feed 100 children
Morning: Bouilli, wheat flour 15 kg.
 Butter oil 1/2 l.
 Canned milk 1 1/2 l.
Night: Domada made of rice, oil, tomatoes, fish
 8 kg. Rice
 1 l. butter and whatever else
Croisson Rouge delivers every 2 months
The infirmiere weighs kids to decide who qualifies.
 began in December 1985
Mothers do cooking (3 at a time)
 1-3 years old
Have a dispensary but sometimes village must buy medicine themselves

APPENDIX C

GATHERED FOODS AND MEDICINES

| <u>Pulaar</u> | <u>Soninke</u> | <u>Hassanyia</u> | <u>Scientific Name</u> | <u>Use</u> |
|-------------------------------------|--------------------------------------|---------------------|-----------------------------|--|
| murtode (murtoki-is the tree) | sexene (sekhene) | tongue or tougue | Balanites Aegyptiaca | Yellow fruit at end of rains, soap made from nut; medic- inal |
| jaabe | fa | sidraye | Zixphus Mauritania | Small orange fruit; medicinal |
| bokki | kiide (kide) | ----- | Adansonia digitata | Fruits-pain de singe- medicine bard=cord leaves-- laalc mushrooms- Kidie xaxe |
| paguirri | jaaje (diadie) | az | Brachiaria hagerupii | Small grass seed |
| guidgile | mandaxe (mandakhe) | ----- | Boscia Senegal- ensis | Fruit, medicinal |
| dayrrii or tabbe | bude or tabbe (boude or tabbe) | ----- | Nymphaea lotus | Seed from flower plus root eaten (water- lily), medicinal |
| caapato (Tjapato) | ----- | ----- | | Same plant as above except with red grains, called "Maure" in Pulaar |

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| <u>Pulaar</u> | <u>Soninke</u> | <u>Hassanyia</u> | <u>Scientific Name</u> | <u>Use</u> |
|--|--------------------------|------------------|------------------------------|---|
| oulo | kasa (kasse) | ----- | Cassia tora | Leaf eaten as leaf sauce |
| kenkeliba ("kinkili") (quinque-liba-Fr.) | xande | ----- | Cambretum micranthum | Leaves of tree used for tea |
| eri (eede is fruit) | denmbu | ----- | Sclenocarya birrea | Acid fruit, hardwood for pestles, etc. |
| gawdi (tree) gawde (fruit) | jabe yitte jabe renme | ----- | Acacia scorpoides (nilotica) | Paste from fruit used in tanning leather |
| casiki | kune | avrerayye | Acacia albida | Pods for fodder; tanin from bark |
| dacche (gum) | kanbare (cambare) | ----- | Acacia Senegal | Medicine, wild food, gum |
| pattuki (tree) | xiile | | | |
| jabbe (fr. tamarinier) | xaralle | ----- | Tamarindus Indica | Fruit and drink, herb/spice, seed edible |
| takiette terabbe | ----- | ----- | ----- | Grass made into laalo (common in the guidimaka) |

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| <u>Pulaar</u> | <u>Soninke</u> | <u>Hassanyia</u> | <u>Scientific Name</u> | <u>Use</u> |
|------------------------|-------------------------|------------------|------------------------|--|
| gumgume (goumgumme) | gungunme (goumgoume) | ----- | ----- | Type of mint used in tea and to cure medical problems (mental - jom hoore) and other illnesses |
| kelli (keeli) | sanbe (Sambe) | Thijij | Grewia bicolor | Herding sticks, perhaps other uses? |
| tuupere | dagare | ----- | Tribulus terrestius | Saure leaf |
| lalo baali | taxaye | ----- | Corchorus tridens | Grass, dried + used in sauce |
| ngaado | ----- | ----- | Dicadi longifolium | "Wild onion," morpho- logically resembles an onion (used to kill rodents), poisonous to certain animals |
| (koylonye) | xollinne | ----- | ----- | Nut, herders specialty |
| sorbadde | luxulaaxa | ----- | ----- | Root in sandy soil (very watery), wood for chewing sticks |

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GATHERED FOODS AND MEDICINES

| <u>Pulaar</u> | <u>Soninke</u> | <u>Hassanyia</u> | <u>Scientific Name</u> | <u>Use</u> |
|-------------------------------------|----------------|------------------|---------------------------|---|
| Regeo | ----- | ----- | ----- | Tree with small leaves, cut leaves and use twigs for chewing stick |
| Lalo | ----- | ----- | Corchorus olitorius | Medicinal, sauce |
| taxaye | ----- | ----- | ----- | ----- |
| alluki | Jabe | ----- | acacia radiana | ----- |
| takiette terabbe | ----- | ----- | ----- | Grass leaf dried and ground into powder/used like buobab leaves in couscous (therefore a kind of laalo) |
| gellooge (fr. Palmier doum) | ----- | ----- | Hyphaena theabaica | ----- |
| koppi geloodi (knees of the camel") | ----- | ----- | Trianthema portulacastrum | Leaves for sauce |
| safato | ----- | ----- | ----- | Weed used for sauce |
| ----- | ----- | ----- | Digitata exilis | Eaten? Perhaps as a leaf sauce? |

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GATHERED FOODS AND MEDICINES

| <u>Pulaar</u> | <u>Soninke</u> | <u>Hassanyia</u> | <u>Scientific Name</u> | <u>Use</u> |
|------------------|----------------|------------------|-------------------------|--|
| ndagedji | ----- | ----- | ----- | Wild potato, eaten like potato |
| lawnande | katabaane | ----- | Combretum aculeatum | ? |
| capotoye Alla | ----- | ----- | Leptadenia pyrotechnica | Massage; other uses? |
| nofel mbaalu | ----- | ----- | ----- | ? |
| ----- | dere | ----- | ----- | Like spinach |
| ----- | Jomba | ----- | ----- | Fruit |
| ----- | toureme | ----- | ----- | Fruit |
| keboye diji | ----- | ----- | ----- | ? |
| sumaani nimsa | ----- | ----- | Portulca oleracea | Sometimes confused with koppi geloodi; used to make soap, the plant is dried in the sun, burned, ashes put in a cloth and set over the cooking pot in a couscous steamer while hot |

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| <u>Pulaar</u> | <u>Soninke</u> | <u>Hassanyia</u> | <u>Scientific Name</u> | <u>Use</u> |
|---------------------------|----------------|------------------|--|--|
| sumaani nimsa | ----- | ----- | Portulca oleracea | water is poured over it, pottasium rich water is boiled down a bit and animal fat stirred into it, then it's formed into balls while soft and still hot and set out to harden |
| bulbi | gesexulle | ----- | Acacia seyal | Bark is medicinal |
| gawdi | jabe | ----- | Acacia scor- poides (nilo- tica) | Fruit medic- inal |
| geloki | xaame | ----- | Guiera senegalensis | Leaves as cough medicine |
| aljanawi (or aljanaw) | nemimaaso | ----- | Cassia occidentalis | Medicinal herb, used on sore muscles and open sores |
| nammaade (or nammaari) | gasanbe | ----- | Bauhinia rufescens | 1-cure stuffed nose, boil leaves and drink. 2- diarrhea medicine, pound leaves and drink |
| cekirijeri | ----- | ----- | ----- | Boil bark of tree, eases labor pains |

APPENDIX C

GATHERED FOODS AND MEDICINES

| <u>Pulaar</u> | <u>Soninke</u> | <u>Hassanyia</u> | <u>Scientific Name</u> | <u>Use</u> |
|----------------|--|------------------|------------------------|--|
| ----- | daraase (Drasse) | ----- | ----- | Put leaves in fire and cover head and breath for cold |
| ----- | Ketebene*, Ketemene** (Ketebene) | ----- | ----- | Put leaves in fire and cover head and breath for colds |
| wiiro (cotton) | kottone, kottolle | ----- | ----- | Fruit mixed with milk as diarrhea treatment |

*Name given according to the region

*Guidimaka followed by **Gorgol pronunciation.

APPENDIX D

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