

PN. ARW-364 CDIE

93192

CARE INTERNATIONAL IN MOZAMBIQUE

Knowledge, Attitudes, and Practices Survey

Nutrition Education Component of the
Machaze District Food Security and
Community Infrastructure Rehabilitation Project

DECEMBER 1994

PROCESSED

800-01-27

3ccf

Acknowledgements

CARE is grateful to the many people who have contributed to the KAP survey. CARE would especially like to thank the survey team members:

Merlina Damiao, CARE Water Animation Supervisor, Machaze
Helena Antonio, Interviewer, CARE Community Animator, Machaze
Lucia Jose, Interviewer, CARE Community Animator, Machaze
Tomas Paulino, Interviewer, CARE Community Animator, Machaze
Isaura Quefa, PAABP Animator and Interviewer
Berta Joaquim, PAABP Animator and Interviewer
Eva Elisa, Interviewer, CARE Community Animator, Bassane; and
Alexandre Jaze, Project Development Officer, Maputo

CARE also extends special thanks to the Provincial Directorate of Health of Manica and the District Directorate of Health in Machaze for assisting in the development of the interview questionnaire, and discussing their plans and ideas for uses of the survey findings.

CARE is particularly indebted to the people of Machaze District for their participation in this survey. As with other activities, their input and efforts have been the basis for CARE's timely assistance and continued partnership in their development.

Executive Summary

A pilot nutrition education program, funded by USAID, is one component of the Food Security and Community Infrastructure Rehabilitation (FSCIR) Project. In a baseline nutritional survey conducted for the project in March 1994, widespread cases of acute and chronic malnutrition were identified, and documented the need for such a pilot intervention.

The knowledge, attitudes and practices (KAP) survey was undertaken to determine messages and ways to deliver these messages through the pilot nutrition education program, which will be coordinated with the Provincial Directorate of Health's preventive care plans for Machaze District. The survey investigated four areas of primary interest to both CARE and the DPS: normal food habits, breast feeding and weaning, common illnesses, and diarrhea. Provided below is a summary of the key findings for messages and the delivery of messages.

Messages

- * Almost half the mothers interviewed introduce solid foods before the child reaches four months of age.
- * Mothers reported introducing foods early due to perceived breast feeding problems.
- * Children consume meals only two to three times per day.
- * Early weaning foods consist only of a weak maize gruel.
- * The population restricts the intake of water during diarrheal episodes.
- * Mothers never mentioned the need to prevent dehydration, and instead seek only to cure the diarrhea.
- * The population restricts the consumption of certain foods, such as squash and bananas, during diarrhea.

Delivery of Messages

- * Most mothers receive messages from family and neighbors.
- * Mothers expressed interest in learning more about the topics of diarrheal treatment and child nutrition.
- * TBAs have the potential to reach mothers with messages, and are included as part of training plans for the District Directorate of Health (DDS).
- * The DDS is beginning to introduce a community health worker program in Machaze.

Table of Contents

	Page
I. Introduction	1
II. Survey Methodology	
A. Design and Limitations	2
B. Target Group and Techniques	3
C. Machaze District and Site Selection	4
D. Team and Training	7
III. Profile of Beneficiaries	
A. Overview	9
B. General Characteristics	9
C. Normal Food Habits	11
D. Breastfeeding and Weaning	14
E. Common Illnesses	16
F. Diarrhea	17
IV. Profile of Service Providers	
A. Overview	21
A. Traditional Birth Attendants (Parteiras)	21
B. Traditional Healers (Curandeiro/a)	23
C. Local Leaders (Regulos)	24
D. District Directorates of Health and Education	24
V. Nutrition and Health Education Recommendations	
A. Practices and Knowledge Gaps	26
B. Messages	26
C. Delivery of Messages	27
LIST OF APPENDICES	
Appendix A: Area Map	30
Appendix B: Individual Interview Questionnaire	31
Appendix C: Observation List	33
Appendix D: Curandeiro Interview Guidelines	34
Appendix E: TBA Interview Guidelines	35
Appendix F: Training/Survey Schedule	36
Appendix G: Glossary	37
Appendix H: References	38

List of Abbreviations

AMETRAMO	Association of Traditional Healers of Mozambique
APE	Community Health Worker with six months training
CPP	Provincial Planning Committee
DDPCN	District Department for the Prevention and Control of Natural Disasters
DDS	District Directorate of Health
DPS	Provincial Directorate of Health
EP 1 or 2	Primary School(Grades 1-5) and Grades (6-7)
KAP	Knowledge, Attitudes, and Practices
MHC	Mozambique Health Committee
MSF/CIS	Doctors Without Borders' inter-agency technical assistance unit
MOH	Ministry of Health
NGO	Non-Governmental Organization
PAABP	Chimoio Peri-Urban Water Supply Program
SMI	Mother and Infant (Health) Services
TBA	Traditional Birth Attendant
UNHCR	United Nations High Commission for Refugees

I. Introduction

A. Machaze District and CARE Activities

Machaze District is located in the south of Manica Province, central Mozambique and has been vulnerable to periodic food shortages caused by drought and a semi-arid climate. Adequate food security for the area continues to be hampered by limited access to rural locations, a weakened infrastructure due to the effects of the civil war, the return of an estimated 40,000 refugees, and the existence of mines.

In September 1992, CARE undertook an emergency seed distribution; and during March and April of 1993, CARE conducted Participatory Rural Appraisals in the localities of Bassane, Chipudje, and Chipopopo and the bairro, or town ward, of Maguiguane. Findings from the appraisals lead to the design of the Food Security and Community Infrastructure Rehabilitation (FSCIR) and the Machaze Emergency Water Projects. Both projects received funding from UNHCR in September 1993, and from USAID in November 1993. Another proposal has also been written in the area of agriculture.

B. FSCIR Project and the KAP Survey

The FSCIR Project has as its two major aims 1) to increase the food security of the district population through the provision of agricultural inputs, food aid, and a pilot nutrition education program; and 2) to construct access roads and basic community structures, which include schools and health posts. In March 1994, the FSCIR Project conducted a baseline nutritional survey in Machaze to investigate the nutritional status among children less than five years of age, to determine household socio-demographic characteristics, and to identify any relationships between nutritional status and the socio-demographic characteristics.

Findings from the survey revealed an acute malnutrition rate of 5.7% and a chronic malnutrition rate of 42.8%. Acute malnutrition is present and active, while chronic malnutrition is an accumulated long-term condition. Significant relationships between malnutrition and the socio-demographic characteristics were linked to the age of children, particularly between the ages of 12 and 35 months; households with two or more children less than five years of age; and single mothers.

These findings and continued drought-induced food insecurity hastened the development of the pilot nutritional education program and the need for the KAP survey to determine the messages and ways to best deliver the messages. During November and December 1994, the survey was conducted in Bassane, Chipudje and Chitobe locality centers.

II. Knowledge, Attitude and Practice Survey Description

A. Design and Limitations

For the purposes of this survey, mothers at-risk or beneficiaries were defined as married mothers who have two or more children below five years of age and single mothers. The first hypothesis for the KAP survey was that the occurrences of acute and chronic malnutrition in Machaze District are directly linked to the poor nutritional and health care knowledge and practices exhibited by mothers at-risk, and their lack of exposure to appropriate nutrition and health care messages, whether delivered by traditional or government service providers. The second hypothesis was that mothers at-risk would have poorer nutrition and health care practices than mothers not at risk because of difficulties obtaining and preparing for their children a regular, adequate food supply.

Supporting these hypotheses were two assumptions. The first assumption was that by comparing the level of knowledge and practices of mothers at-risk with standard practices recommended by the World Health Organization, key nutritional and health care messages could be determined. The second assumption was that by understanding the present roles of government and traditional caretakers in providing nutrition and health care services, existing systems could be enhanced to deliver key nutritional and health care messages to mothers at-risk.

A qualitative, rather than a quantitative, approach was used in order to completely capture personal information about nutrition and health attitudes, practices and knowledge, maximizing opportunities to collect anecdotal information of interest to government health authorities and to be used to deliver the messages. Using this approach, the survey was conducted with four aims in mind:

1. To assess household knowledge and practices regarding normal food habits, breast feeding and weaning, common illnesses, and diarrhea.
2. To better understand how traditional and government service providers are perceived by and serve the communities.
3. To determine the types of nutrition and health messages to be incorporated into the pilot nutrition program and ways these messages could be delivered within the existing system.
4. To develop the capacities of CARE and PAABP staff in using the qualitative approach to survey research and monitoring nutritional conditions.

One limitation to the qualitative approach can be the lack of experience of the researchers, who have worked with quantitative techniques and which became the focus of intensive training sessions for the survey research team, which is described in the team and training section. Another limitation can be the availability of participants who have the time to be interviewed in-depth at a set time. Because mothers at-risk are also the same individuals who are either caring for children, collecting water, gathering wood, tending their fields or busy with brewing a local liquor for sale, this limitation became a special concern of the survey team in selecting participants for the survey.

B. Target Group and Techniques

The target groups for the survey were the mothers at-risk and the mothers not at-risk. Participants from both groups were identified and interviewed, and findings for the groups were compared. Representatives from traditional and government health care providers were selected and interviewed as sources for service delivery and secondary information. These representatives included traditional birth attendants (TBA), traditional healers, local leaders, and government health and education staff.

In carrying out the research with participants, the survey team was trained to explain the aims of the KAP survey, to stress the importance of accurate information, and to eliminate any participant notions of the relationship between the KAP survey and food distribution. The questionnaire for the target group interviews was pre-tested for four days by the three teams in a bairro of Chitobe. Each team conducted an interview each day followed by a debriefing session with the survey teams and leaders.

Following the pre-test, several changes were made to the questionnaire and guidelines for the key informant interviews and focus groups. In order to prompt participants for more information, probing questions were added to the target group questionnaire. Additional questions were added to the key informant guidelines to collect more information about the work of TBAs with communities. Other changes were the re-phrasing of questions. For instance, participants had trouble answering the question "Do you know other food that would improve the health of your child?", which was later changed to "What would you purchase, if you had money, to improve your child's health?"

One or more of the following techniques were used to collect information from the survey groups.

1. Target Group Interview: Mothers At-Risk and Mothers Not At-Risk were interviewed with a questionnaire that was divided into five sections: Household Characteristics, Normal Food Habits, Breast feeding and Weaning, Common Illnesses, and Diarrhea. The interviews typically took

from one to one and one-half hours to complete, and were scheduled 15-30 minutes apart in the bairros of the three sites.

2. Observation Checklist: Researchers carried an observations checklist and recorded their findings when interviewing mothers at-risk and mothers not at-risk, and upon entering interview sites. Examples of items included on the checklist were household characteristics and possession of a health card.
3. Key Informant Interview: Traditional and government health care providers, as well as community leaders and other government officials, were interviewed using this method. These interviews lasted between thirty and sixty minutes, and were conducted in the three communities and at places of work.
4. Focus Group: The groups were composed of 10-13 participants, and the discussions were facilitated by the survey team to gather more information on the work of TBAs and to verify findings from the target and key informant interviews.

All interviews, except those with government officials were conducted in the local language, Ndau. All survey instruments and recordings of interviews were in Portuguese. There was no attempt to translate the written enquiries into the local language, Ndau, as this proved to be unsuccessful in the previous nutrition survey. Verbal translations were made by the local CARE-trained community animators.

C. Machaze District and Site Selection

1. Machaze District Overview: In the decades prior to independence, the farmers of Machaze District produced a wide variety of crops, and traders travelled from Beira, Chimoio and even Maputo to purchase the local produce. The produce included cashew nuts, maize, millet, sorghum, beans, and fruits such as tangerines and oranges. With the onset of the civil war and drought, the district experienced drops in both the amount and availability of this produce, and was accessible only by airlifts.

The area between Chitobe, the district capital for Machaze District, and Save in the south was hit the hardest by the civil war and the drought. Under RENAMO control, farmers were restricted from working their lands. During the drought years, 1983-84 and 1988-92, food security was tenuously maintained with food donations, hunting, and wild vegetation.

Between 1984-86, the International Committee of the Red Cross assisted the communities with food distribution, followed by the

District Department for the Prevention of Natural Disasters (DDPCN) until 1993. CARE has since assumed responsibility for food distributions, which currently reach all returnees and other vulnerable groups identified by the District Emergency Committee.

With the signing of the Peace Accord in October 1992, people began moving away from locality centers and to Machaze District to return to their communities and homesteads in the bush. A majority of these people are members of families intent on farming their former plots. These families typically have homes in the village and smaller homes located near their plots that are used during peak periods of labor. Assisting this movement are the following outside agencies: FINNIDA with construction of a new health center in Chitobe, GTZ and its construction work in the southern administrative post, and the UNHCR with various forms of assistance to ease the repatriation process of the many returnees.

Demographically, Machaze District has a higher percentage of females than males and a higher incidence of female-headed households. Surveys for the Machaze-Mossurize districts have shown that up to 18% of rural households are female headed. Female-headed households were defined as those composed of widows, divorcees, or women whose husbands are away more than 50% of the time.

Both of these trends are linked to the district's long-standing tradition of men migrating to employment opportunities in the South African mines and in Zimbabwe. Thirty-percent of the households also practice polygamy, and some families have as many as five wives to one man. Presented below is the Machaze District Administration's 1994 population estimate, October 1994.

	Oct. 1994	Returnees: Zimbabwe
Machaze District	127,264 of which	39,119 (31%)

2. Site Selection: The survey was conducted between 21 November 1993 and 3 December 1994 in the same sites where the FSCIR Project will implement its nutrition education pilot program: Chitobe, Bassane, and Chipudje.

Locality	Estimated # of Returnees (% of Popu.)	Estimated Population	New Boreholes
Chitobe	5,777 (19%)	30,871	6
Bassane	10,956 (73%)	14,981	1
Chipudje	5,346 (43%)	12,345	2

The criteria used to select the sites were a health structure, with staff able to participate in the program, and accessibility. Presented below are the characteristics of each of the sites as of the end of November 1994.

Chitobe: Chitobe is the district capital where limited health and education services are available, the local commercial sector is beginning to thrive, and government authorities are very active in the community. As of July 1994, a road was cleared of mines and opened to Espungabera in Mossurize District. The other main access route is the road to Sofala Province and the national highway. Chitobe has one motorized diesel pump and three functioning CARE-installed hand pumps. CARE is funding the construction of three schools in the area: two EP1s and one EP2.

Bassane: Bassane has a very dispersed population and is located 18 kilometers from Chitobe. The area is strong in agricultural production, and supplies Chitobe with produce in exchanges for water. The community is overseen by one Regulo and fifteen traditional chiefs, and government authorities are active in the community.

In recent months, the locality has received more than 10,000 returnees, which is more than the other three sites. In a CARE-funded study about water resources, four respondents reported conflicts over land rights between returnees seeking to regain control over their machambas and people presently farming the land. While land is a divisive issue, cisterns are being turned over to their rightful owners with little or no conflict.

CARE drilled two boreholes, and due to the water depths, pumps have not been mounted yet. CARE also is funding the construction of one EP1 school and one health unit. Health services are presently delivered by an APE and a visiting nurse.

Chipudje: Chipudje is approximately twenty-five kilometers from

Chitobe. The locality center has a small commercial area with several kiosks. There is also a health unit and seven trained TBAs who report on a monthly basis to the DDS in Chitobe. CARE is funding the construction of one EPI school and has installed two boreholes with Afridev pumps for a total of 4 functioning pumps in the locality center.

3. Community Relations: The following steps to prepare the communities for the survey were taken.

- CARE met with Machaze's Administrator, Health Director, and Education Director to review the survey's purpose and design.
- CARE met with local leaders of the communities to discuss the survey's purpose, to obtain formal permission to conduct the survey, and schedule meetings with the community.
- CARE convened community meetings to further discuss the purpose of the survey and to identify women to be interviewed. In these meetings, CARE explained that women were being interviewed because of the close tie between their responsibilities to their children and the family in general, and the health of the household. TBAs identified the women to be interviewed by randomly selecting women who either met the criteria for women at-risk or not at risk.

D. Team and Training

1. Composition: The three survey teams organized were supervised by either the project's Machaze-based Community Education Specialist, CARE Water Animation Supervisor, or CARE's Maputo-based Project Development Officer. Members of these teams had survey experience and were recruited from CARE local staff and PAABP staff from Chimoio, and CARE-trained community animators from the three survey sites. The two PAABP staff were invaluable for their contribution of their long-term experience in work with communities and community animation. At least one member of each team was fluent in the local language, Ndau.

Each survey team included an interviewer, an observer/recorder, and a translator, and was assigned to conduct interviews in one of the following survey sites: one bairro of Chitobe and in several bairros of both Bassane and Chipudje. The teams were accompanied to the homes by the community animators.

Other CARE-trained community animators and the TBAs acted as links to the communities and were instrumental in assisting the teams in identifying the survey households. The Machaze Water Project's community water animators work in eight communities and have been

trained in basic sanitation, record keeping, and community mobilization. The TBAs were from a group of thirteen women identified by the three survey communities.

The survey teams conducted 26 individual interviews with mothers; key informant interviews with the regulos of each locality, with five curandeiros, and with the DDE and DDS; and three focus group discussions during the two-week span of the survey. In total, the number of people surveyed using the various techniques was approximately 75.

SURVEY TOOLS	CHITOBE	CHIPUDJE	BASSANE
Questionnaire	9	8	9
Observation Check List	9	8	7
Key Informant Interview	2 curandeiros/ 1 regulo/ DDE and DDS	2 curandeiros/ 1 regulo+staff	1 curandiero/ 1 regulo
Focus Group (Also 1 with TBAs from the 3 sites, held in Chitobe.)	1		1

2. Training: A potential weakness to qualitative research can be the lack of experience of researchers with the techniques for collecting information. Therefore, developing the skills of the survey team with these techniques was the focus of an intense training program designed to get the survey team to guide an exchange of information with participants and remain open to additional information which could arise. For instance, if a question or point appeared irrelevant to a participant or a group, the survey team had to be trained not to press for a response; conversely, if a question or point was of particular interest, the survey team needed to know how facilitate further discussion.

The training was conducted by the CARE-Maputo Project Development Officer and the CARE-Machaze Water Animation Supervisor in mid-November 1994, over a five-day period. Role-playing in individual interviewing techniques and recording of information as well as training in focus group interviewing techniques were covered in the training. For the individual interviewing techniques, survey team members were given field practice that was then reviewed in debriefing sessions. The discussions held in these sessions also led to some changes in the way information was collected. The integrity of the information collected was ensured through additional training in ways to cross-check responses provided by the various groups of participants, and to oversee the data

collection efforts of the survey team members.

III. Profile of the Mothers At-Risk

A. Overview

The major finding was that there were no observable differences between mothers at-risk and mothers not at-risk in their knowledge and practices related to normal food habits, breast feeding and weaning, and the treatment of common illnesses and diarrhea. Although the living conditions in Bassane were found to be harsher than those in Chitobe and Chipudje, there also were no major differences in the knowledge, attitudes, and practices among the three sites. Therefore, the messages formulated for the pilot nutrition education program should not be differentiated for mothers at-risk and mothers not at-risk, nor by location. Just the same, special follow-up activities and interventions will need to be designed for mothers at-risk.

Differences were identified for sub-groups of women who were returnees, and earlier nutritional survey had confirmed a difference for polygynous household or heads of households. For example, returnees introduced solid foods at an earlier age and were more knowledgeable about ORS treatment of diarrhea. The incidence of malnutrition was higher for children of single mothers than for mothers who were members of polygynous households. However, the differences were not substantive enough to merit tailored messages for these subgroups.

B. General Characteristics

1. Family Composition and Size: In total, four single women were interviewed, 11 women married with one spouse, and 11 women married within polygynous families.

Site	Married	Polygynous	Single
Chitobe	6	3	0
Bassane	2	4	3
Chipudje	3	4	1
TOTAL:	11	11	4

Eighty-five percent of the women interviewed fell into the mothers at-risk category. Of this group, seventy-two percent had two children less than five years of age, with an average two to three years difference between children.

When discussing the risk associated with having two children less than five years of age, the women reported no knowledge of

effective birth control methods and jokingly replied that the issue of closely spaced children is related to the fact that some men were always at home.

Family sizes varied. The majority of families were composed of four or five members, with the largest family having 17 members. Larger families were usually polygynous.

2. Residency Status: Seventy-seven percent of those interviewed were resident population. Two-thirds of the returnees interviewed were in Chitobe. This is most likely due to the fact that most returnees arriving in the other localities quickly move outside the locality center to their former homes in dispersed locations.

Although many interviewees reported they had resided for many years in Machaze, others noted that with the advent of peace, they have searched for new sites. New houses are being constructed following the return of original owners who are reclaiming their lands. Many families must go farther to reach the land they can cultivate.

3. Family Level Assessment: Family level assessment was determined from the survey team members' observations of the housing, clothing, and health. The rating of "poor" was used to describe those households in which members reside in homes lacking locally standard doors and windows, and with damaged or ill-repaired roofs. The interviewees in the "poor" category wore torn or ill-fitting clothing, appeared thinner and weaker, and had fewer visible resources.

Despite the subjectivity of the assessment, the same survey team members went to all three survey sites and it is interesting to note their findings.

SITE	POOR	NORMAL	GOOD	POOR/TOTAL
Chitobe	1 (2)	5 (2)	3 (5)	1/9
Bassane	5 (0)	2 (7)	0 (0)	5/7
Chipudje	1 (1)	4 (4)	3 (3)	1/8
TOTAL:	7	11	6	---

* In parenthesis are the observations of the health of the child.

Clearly, the population of Bassane appeared worse off. None of the children in Bassane were observed to be in "good" status, while children in both Chitobe and Chipudje were more likely to fall into the "good" category. Finally, the lack of latrines, fewer meals per day, and low use of health cards further attest to Bassane's poorer circumstances.

Fifty percent of the households interviewed had latrines in both Chitobe and Chipudje. On the other hand, only one of the six families interviewed in Bassane had a latrine.

C. Normal Food Habits

1. Daily Diet: Besides the fact that Bassane has no health post and Chitobe and Chipudje both do, another major factor which distinguishes Bassane is that it is noted as being an area of better agricultural production. Yet, an examination of the responses to the questions in Bassane about normal food habits indicated that good local production did not translate into consumption.

SITE	0x/day	2x/day	3x/day	% eating 3x/day
Chitobe	1	5	3	33%
Bassane	1	7	1	11%
Chipudje	1	3	4	50%
TOTAL:	3	15	8	---

Probing questions and further observations found that distance to water affected normal food habits. Many of the mothers, and particularly those located in Bassane, reported that they spent most of their day collecting water. One mother from Bassane reported that she went to the motorized pump in Chitobe every day for water. Another reported waiting in line for water for two days, after which she finally decided to use water from an unprotected source.

The second factor affecting normal food habits is time as related to the labor required to grind maize with no mills, to cultivate larger fields to insure a greater harvest in the semi-arid climate, to cultivate fields far away from the homes as discussed above, and to travel and carry items with no local transport system. All of these activities take time away from preparing food.

Other reasons for not eating during the day were no cereal available to trade for water, and the supplier was absent. At this time of year, with the greater need to work in the fields, mothers report they can prepare food only at the end of the day.

The principal meals are lunch and dinner. Breakfast, if consumed, consists of a small amount of papa or, rarely, an undefined snack or tea (w/bread). Although questioned if there were any difference in the number of meals for children versus adults, only one interviewee responded that the children received more meals per day: three with a tea in the morning versus the family's two meals

per day. The vast majority made no distinction between the number of meals consumed by adults and children, discounting infants strictly breast feeding.

In all locations, many of the older children were noted to be eating the ripened cashew fruit and the unripered mango fruit during the survey. This is the only snacking reported or observed.

The basis of the diet is a massa with a complementary caril. Maize is the principal cereal used to prepare massa. Its use will diminish in the coming months as harvest stocks are depleted, and more foods harvested in the wild will be consumed. The caril is prepared from cassava leaves, and the leaves and seeds of the cacana.

Some families reported consuming sausage tree leaves and squash, and seldom mentioned was the consumption of dried fish, wild meat (hunted impala or gazelle or wild guinea fowl), raised meat (chicken, goat or duck) or groundnuts. The returnees also reported consuming donated beans or peas.

The families obtain the food for the most part from their own field production. Most families also have a small business, for the most part the production and sale of alcoholic drinks, to purchase other necessary items. Common items purchased are salt, sugar, oil, tea, and for returnees Cerelac. A large source of food is the bush which has wild plants and animals, and dependence on the bush as a food source is related to times of shortfall in local production.

As it is principally based on production, the diet varies during the year. At this time of year, stocks are reducing and only minimal greens are growing with the first rainfall. The frequency with which interviewees mentioned the current consumption of cassava indicates a depleted stock of cultivated cereals. Cassava is a food consumed principally when other preferred foods are unavailable. With a good rainfall comes a good harvest and the availability of wild fruits and plants, which in turn increases the frequency and quantity of consumption.

2. Recommended Diet for Children: Most respondents recommended the principal foods in their possession, such as massa or papa with caril. Other foods mentioned were sugar and tea, depending on the resources to purchase them. As noted above, this was a difficult question, as the mothers could only think of available foods. It was not worthwhile to recommend something which was not available. When asked what other purchased foods were good for children, mothers responded tea, bread, rice, and milk.

Harvest and Consumption Periods in Machaze District

FOOD	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG	SEPT
Maize	C	C	C	?C	?C	HC	HC	C	C	C	C	C
Millet	C	C	C	?C	?C	?C	HC	HC	HC	HC	C	C
Sorghum	C	C	C	?C	?C	?C	?C	?C	?C	HC	HC	C
Cassava (leaves) (root)	C	C	C	C	C	HC	HC	C	C	C	C	C
Cowpeas	C	C	?C	?C	?C	HC	HC	C	C	C	C	C
Groundnuts	C	C	?C	?C	?C	HC	HC	C	C	C	C	C
Cashew (fruit) (nut)		HC	HC	C	C	C	C	C	C	C	C	C
Sweet Pot							HC	HC	HC			
Squash	C?	C?	C?	C?	HC	HC	HC	C	C	C	C	C
Me'ions (seed) (fruit)	C	C	C			HC	C	C	C	C	C	C
Mango		HC	HC	HC								
Cacana	HC											
Massala	C	C	C	C	C	C	C	C	C	C	C	C
Sausage Tree (leaves) (fruit)	HC	HC						HC	HC	HC	HC	HC

H = Harvestst

C= Consumed

C? = Consumed but
dependent on production

Despite mentioning massa and a caril, there was very little mention of vegetables or fruits. One respondent mentioned sweet potato and fruit - as well as sugar, meat, rice, tea and bread. Another respondent mentioned tomato in addition to what she did have available. And, one returnee responded cassava and sweet potato. The low frequency of vegetables and fruits being mentioned is most likely related to two factors. First, they are not so readily available in Machaze, particularly at this time of year. Even more likely, the principal food is seen as the massa because it is filling and wards off hunger pangs for a longer period of time.

D. Breast feeding and Weaning

1. Duration: All mothers interviewed were breast feeding or had just discontinued. The common age to end breast feeding is two years. Some women reported breast feeding until three years of age. Common reasons for discontinuing given include the child was grown or of the appropriate age. Many mothers responded that they had received advice on this from elders, parents of the husband or even elder neighbors.

Further research will be necessary to determine if the discontinuance is related to the beginning of a new pregnancy. This reason was mentioned by three woman. Another interviewee provided the response that the child had teeth and hurt the breast. Finally, one returnee reported that although she normally weaned her children at two months of age, she had weaned one child at one week of age, because the child was crying.

2. Introduction of Solid Foods: One of the major finding of the survey was that foods were introduced as early as the day of birth or one week of age. Almost half the women introduce foods at less than four-months of age. Two mothers reported starting solid foods after six months. One mother, in Bassane, started her child at nine months because the papa preparation was refused and only massa accepted. Another mother, in Chipudje, explained she started her child at eight months with cashew.

The common weaning food is a papa. The papa is prepared with maize meal which is made with boiled water to dilute the mixture leaving a watery consistency. As the child grows, the papa is thickened through decreasing the amount of water added. Eventually, the child begins eating massa with the family. Some families add salt and sugar, when they are available.

In contrast, it was noted that returnees give Cerelac or if preparing a papa from scratch, maize meal is used also, but besides the addition of salt and sugar, either groundnuts, or if these are unavailable, oil is included. This may indicate some nutrition education in the camps in Zimbabwe.

There was no mention of other ingredients in the papas or as

another weaning food. When one focus group was questioned, they replied greens had been included in the times of their mothers but this was no longer practiced. This may be related to the fact that greens as well as fruits were more available during previous years of adequate rainfall. Again, a major factor is more likely the tendency to concentrate on cereals in the diet, as they are filling.

For the most part, mothers give excess papa to other children. Some women commented that they covered the papa with another plate and set it aside for the infant's future consumption.

Although returnees represent a small proportion of interviewees, the tendency is that returnees are more likely than residents to introduce weaning foods at less than four months of age.

Site	<4m	4-6m	>6m	?
Chitobe	3 (2)	5(1)	0(0)	1(1)
Bassane	6 (1)	2(0)	1(0)	0(0)
Chipudje	2 (1)	4(0)	1(0)	1(0)
TOTAL:	11(4) [42%]	11(1) [42%]	2(0) [8%]	2(1) [8%]

(#) = returnee response

[%] = percentage of total responses for each age group

3. Reasons for Weaning: The principal reason for the early introduction of solid food appeared to be that the child was crying, even right after breast feeding. Introducing food quieted the child. The crying very likely is related to normal adjustments for the newborn and new mother, but could also be related to insufficient breastmilk consumption, which was reported by some of the mothers. The crying also could be tied to an observation that mothers did not spend any time burping their babies, which decreases gas pains.

However, a contributing factor is the low frequency of breast feeding, which most often occurred when the mother was resting. Therefore, although the mothers may have the capacity to produce adequate quantities of breastmilk, they cannot when the length of time and frequency are not adequate enough to stimulate milk production. Although the diets of the breast feeding mothers may not be ideal, there is standard acknowledgement that malnutrition must be extreme to produce an effective reduction in the capacity to produce breastmilk.

It is interesting to note one finding of the nutritional baseline survey - increased malnutrition in children 12 -35 months of age - does not seem to coincide with the KAP survey findings of early

weaning age. It is likely that the onset of malnutrition is delayed until an age of ever more nutritional demands on the part of the growing child, but also the very possible transfer of caretaking from near constant time with the mother to secondary caretakers. This may come as the child is older and is eating foods so the mother can leave the child with others and also may be due to a second pregnancy.

E. Common Illnesses

1. Type and Frequency: Seventy-three percent of those interviewed reported illnesses in the family in the past two weeks. The most commonly mentioned affliction was diarrhea. Both adults and children are affected. Also common is scabies. Other commonly reported diseases and afflictions are scabies, coughing (both adults and children), headaches (adults), and conjunctivitis (children).

Mothers reported that most of those afflicted had recovered, but that symptoms persisted for scabies and conjunctivitis, as related to a lack of hygiene, and for measles. Several of the young children at the compounds were noted to have extremely swollen bellies, which is probably an indication of chronic worm infestation.

2. Causes: Although local leaders and the curandeiros thought that perhaps inappropriate water from cisterns versus the manual pumps was a cause of many illnesses, many mothers did not venture to identify causes.

3. Treatment: For the treatment of diarrhea, interviewees were twice as likely to seek medical assistance at the health post than from traditional medicine. Of the sixteen respondents, 13 went for medical assistance and three opted for traditional medicine. Location farther from a health post tends to increase the likelihood that traditional medicine is the first option and medical assistance is the second option.

Indications are that the population seeks to determine the cause of the disease with the curandeiro. If the person's condition does not improve, or the cause is not believed to be spiritual, the person will go to the health post, which is seen as a place to seek a cure. Indeed, in one focus group discussion with mothers, one woman explained she had gone to the health post to have her child, who had diarrhea, treated. As she related, "They gave me that package [ORS] and showed me how to prepare it. But it did not make the diarrhea go away." A cure for the symptom versus a solution to the complicating factor of dehydration then was sought.

All returnees reported they went to the hospital for treatment, and none mentioned going to the curandeiro. Two stated that if they were sick, they would go to the church to seek faith healing, one

of the two only if gravely ill.

In focus group discussions, it was also revealed that advice is sought from family members such as mothers, in-laws, and even elder neighbors. This is further discussed under the Traditional Birth Attendants section below.

4. Use of Health Cards: In the bairro nearest Chitobe center (2km), where the principal health post is located, all respondents had health cards, all of which had been used in 1994. Of the total respondents, 73% of the 26 women interviewed had health cards. The interviewees explained they did not have cards largely because they gave birth at home and not at the health post. In two cases the mother had a card for the second oldest child, but not the newborn. It is apparent and reported that the card was received when the child went for treatment of a sickness.

All returnees had health cards. It should be noted that one woman had a card completely filled out only until the month of her return to Mozambique. Since then, the card has not been used. Indeed, overall, the quality of the health cards was variable and in general poor. Very few cards showed evidence of growth monitoring or a vaccination schedule. Where weight and vaccine information was indicated on the health cards, the information was not being recorded on a regular basis. More likely, the cards were received and filled out only when the children arrived for treatment of illnesses. Other time commitments and distance from the health post are two factors that directly affect the attendance rate for regular growth monitoring or vaccination schedules.

Also, as discussed above, there is a greater tendency to seek the assistance of curandeiros. Great importance does not seem to be given to the cards, although mothers do indicate they bring the card along when they go to the health post, because it is often requested.

All nine mothers interviewed in Chitobe had health cards, of which only three were up to date and completely filled out. In Chipudje, seven of the eight mothers interviewed possessed cards, although none were completely filled out and up to date. In Bassane, only one-third of the respondents possessed a health card and none of these were up to date and completely filled out. It must be noted that Bassane has only an APE, while the posts in Chitobe and Chipudje are staffed with professional technical staff. The APE is not authorized to provide vaccinations, but can weigh children and fill out the health cards.

F. Diarrhea

1. Occurrences and Causes: As stated above, diarrhea is a common ailment. It afflicts both adults and children. Ages reported by interviewees for children were from as young as five months, to two

years, and up to six years of age.

The period of most common occurrence of diarrhea reported was the summertime or rainy season, although one returnee stated the period between summer and winter. And indeed, the interviewees report a recent increase of diarrheal cases in the district.

Some interviewees were able to state causes of diarrhea; they included the change in temperature, the consumption of water from open sources and poor hygiene (the latter particularly for children), and poor diet as possible causes of diarrhea.

During the interviews, older children were observed picking up and eating the ripened cashew fruit and the unripened mango fruit which had fallen to the ground. Another possible route of infection is the uncovered storage of food, which is later consumed. Also, on several occasions, dogs were noted eating from family cooking pots with little reaction from the adults in the cooking area.

The respondents distinguished between "normal" diarrhea and diarrhea with vomiting (Chinhamucaca) or with blood, both of which have distinct names and are seen as more severe. However, treatment is reported to be the largely the same.

2. Treatment: As with general illnesses, mothers interviewed reported seeking medical attention for diarrhea at a ratio of fifteen to eight, from a health post than from traditional medical practitioners. However, as with other disease treatment, actual practice and other discussions indicate high usage of traditional medicine. Curandeiro as well as home treatments utilize wild root and leaf preparations. One respondent explained that she went to the curandeiro, but as the disease was not related to a bad spirit, she treated the child at home with a flower mix.

The husband of one interviewee whose child was found to be in need of medical attention, reported that he had requested his wife to take the child to the health post, but she had refused. Another man said that even when he accompanied his wife in, she turned around and left. In general, there seems a strong preference for the curandeiro. One of the mothers reported that she went to the health unit for medicine for her child but then kept it under the cashew tree and did not use the medicine.

3. Provision of Food: When questioned what foods were provided during diarrhea, of those who responded, most mothers reported giving papas. Ten mothers responded papa, and three massa. Other items, such as milk, rice and macaroni, were reported by returnees in Bassane. One resident responded tea with bread; while another reported only cashew as no solids could be given. Among the other reported prohibitions are cassava leaves, "cacana" greens, vegetables, and one returnee reported also cashew.

4. Provision of Liquids: Some mothers were advised not to give water during episodes of diarrhea by elder family members. This was because giving large quantities of water was seen to increase diarrhea. However, mothers reported that liquids given during diarrhea were the following in decreasing frequency: water (12), ORS (9), maweu (3), tea (2), and milk (1). When asked about other drinks given during diarrhea besides ORS, mothers also responded maweu and tea. However, the general approach is to seek only to cure the diarrhea instead of preventing dehydration.

An estimation of quantities of liquid given during diarrheal episodes was difficult for almost all respondents. Some of the respondents who knew the preparation of ORS reported giving one liter per day. Most reported only a little liquid was given because it increases diarrhea. None reported that they give large quantities of water. Others could not estimate.

	LITTLE	1 LTR ORS	DON'T KNOW	NO RESPONSE
Chitobe				
Resident	3	1	0	1
Returnee	0	2	2	0
Chipudje				
Resident	4	0	3	0
Returnee	1	0	0	0
Bassane				
Resident	4	0	2	2
Returnee	0	1	0	0
TOTAL:Res/Ret	11/1	1/3	5/2	3/0

The response of "little" in Bassane includes one mother who responded that she gave no liquids except when she gave pills. Another resident in this category said nothing, only when the person with diarrhea was recovering would liquids be given.

4. ORS: Mothers reported that they knew about ORS, but many of the mothers indicated that they did not know how to prepare it properly.

	Recognition of ORS		Preparation of ORS	
	Yes	Package No	Yes	Package No
Chitobe	7	2	3	4
Chipudje	7	2	6	1
Bassane	6	2	3	2
TOTAL:	20 (77%)	6 (23%)	12 (63%)	7 (37%)

Returnees all stated they recognized the ORS packages. However, not all knew the correct preparation nor the role of ORS. One returnee interviewed in Chipudje explained the preparation as containing water into which contents of the ORS package as well as sugar and salt are added. In Chitobe, a returnee knew even the ingredients but not the measurement with which to prepare a home ORS. One mother interviewed during the pre-test in Chitobe had recently returned from Zimbabwe and had a Zimbabwean Road to Health cards for her children.

The card indicated in English the formulation of a home ORS. The amounts were 1/2 half level teaspoon of salt, 6 level teaspoons of sugar and 750 ml of water. This may lead to some confusion as the amount of water (and the other measures) is different than what the MOH-Mozambique uses - 1 liter.

One returnee in Bassane knew the ORS package and how to prepare the solution and gave 1 liter to the child, but she stated she knew no other liquids to give. Another returnee responded she only gave the ORS and that she gave no water because it increased diarrhea. In Chitobe, on the other hand, one returnee mother knew how to prepare the ORS package and does give water, as other returnees there reported.

Most resident mothers also recognized the package. Residents of Chipudje reported they gave ORS as a liquid during diarrhea and reported providing milk and maweu. Mothers also stated that they prepared tea and maweu as liquids during diarrhea.

Besides restricting the intake of liquids, other prohibitions noted were for greens and cashew.

Although the returnees have apparently been more exposed to the ORS packages, the high rates of diarrhea and the confusion over the role and use of ORS for the returnees as well as residents emphasize the need to concentrate on rehydration messages.

IV. Profile of Service Providers

A. Overview

The overall picture is that the majority of the population, if they do need medical assistance, seek traditional practitioners, particularly curandeiros. Returnees are somewhat more likely to have gone and go to seek care in a health post. Advice is sought based on personal connections, versus a system strictly organized by location.

B. Traditional Birth Attendants (Parteiras)

A focus group discussion was held with thirteen parteiras from the three localities. To date, these parteiras have not received training from the DDS in delivery procedures. Of the thirteen, two had been trained and held certificates from Helpage International-Zimbabwe. The average age of the group was 51 years of age.

Their version of their role, especially those from Zimbabwe, was much more organized and active in the lives of pregnant and delivering women, than the role prescribed by the women interviewed in the focus groups.

General Characteristics: The TBAs reported working with women during pregnancy, birth, and care of the newborn, advising women what to eat, what to give the child to eat, and to take the newborn to the health post for registration and vaccination. No TBA reported maintaining a register of clients. Each TBA does not work in a particular area, instead, the mothers are free to call whichever person they desire.

Interviewed mothers did not recognize the word "parteira". In the focus group discussions with women in both Bassane and Chitobe, women identified "mbiamuana" and "nhamakuta" as the women who attended births. The interviewed women know women who are familiar with assisting births and are called, particularly if the labor is difficult.

After a good result with one of the birth attendants, the family may extend the name of "mbiamuana", that is, the baby's grandmother. It is then more likely she will be called for other deliveries. The "nhamakuta" only assists the woman during the birth but does not deliver the baby. This relationship is very casual and involves no future links.

The assistance is not paid as it is a volunteer job, but is appreciated with gifts of water, wood, some food, basins - very much dependent on the economic conditions of the family and the relationship between the parties.

In fact, many of the women give birth alone, perhaps using one of the available family members to assist during the birth.

Relatedly, when questioned where they received advice about food during pregnancy and care of the newborn, the interviewees replied they received none, except some words at times from elder relatives and neighbors. The request for assistance usually comes only with the onset of labor, and only sometimes earlier with evidence of a difficult pregnancy/birth.

2. Normal Food Habits: The TBAs reported that normal diets consisted of maize, sorghum and millet meal with the following accompaniments: cassava leaves, cowpeas, squash, squash leaves, wild meat, and vegetables.

They believed causes of malnutrition include lack of water, rains, food, stores, markets, and employment; the existence of a large number of single women; the large number of orphans; and the large number of returnees.

Some TBAs reported that their pregnant clients eat red sand soil from termite mounds or iron-clay soils.

3. Common Illnesses: The TBAs reported common sicknesses among the population to be diarrhea (also with blood and with vomiting), scabies, measles, coughing, malaria, vision problems, chicken pox, and head and earaches.

Problems with the newborn are underweight babies, weak newborns, stillbirths, and breechbirths. Shortly after birth, problems encountered are tetanus infection, eye infections, and refusal to breastfeed.

As interviewed mothers, the TBAs also report more illnesses occur during the rainy season, or summer, from October - February, particularly. The TBAs also related that they attended to more births in the summer.

As with pregnancy, the TBAs related that during illnesses, in-laws, older children, and other family members were contacted. They then discuss and decide to recommend advice: traditional medications and also to go to the hospital if the patient has not improved through care of the curandeiro.

The TBAs recommend that sick children should consume breastmilk, hacua, papas and non-salty water (agua doce).

4. Diarrhea: Many items may be used to treat diarrhea as reported by the TBAs. These are traditional medicine including cashew and mango tree leaves, roots of wild plants, leaves of local wild plants such as "mussisse", "mucacho", "munduro", "mucabengua", and goat's milk, as recommended by curandeiros. (Goat's milk is not

part of the normal diet.) It is also recommended to eat hacua and drink water (agua doce) and breastmilk for children. Not recommended are the consumption of beans, cassava, cacana, sweet potato, banana, papaya, mangos, melons, squash, cashew, groundnuts, nor drinking salty water, because these increase diarrhea. Some TBAs recommend papas and others did not.

The TBAs interviewed recognized the ORS packet and explained correctly how to prepare it.

C. Traditional Healers (Curandeiros/as)

1. General Characteristics: Five curandeiros were interviewed from the three localities during the survey. Only one was a women, and she is from Machaze. The curandeiros were interviewed individually because it was believed they would be more comfortable. Indeed the areas of treatment were different for each curandeiro. The path to be a curandeiro is believed to include important dreams and has family linkages.

Some curandeiros revealed they work with TBAs, while some stated specifically they do not. One role of some curandeiros would be to recommend a woman to go to the house of a TBA for the birth.

It was difficult to ascertain numbers, but some curandeiros did indicate they saw from six to eight people every seven days. All groups of the population go to curandeiros, with women the most mentioned client. Payment of the curandeiros varies but is largely in kind. One mother interviewed stated she preferred to go to the hospital because the curandeiro was more expensive (20 kilograms of maize, for example).

2. Common Illnesses: The curandeiros treat both spiritual and physical problems. Each reported not being able to treat certain, different symptoms and diseases. The most reported problem which they treat is diarrhea. Other diseases are scabies and sexually transmitted diseases. The busy season was reported to be the rainy season/summer. One curandeiro reported treating women with conception problems, as well as the fact that his wife assists him with the women who visit for medical treatment. She also assists mothers during childbirth.

Each disease requires different treatment, including particular diet restrictions.

3. Diarrhea: The curandeiros also distinguish between many types of diarrhea. Thus the long list of possible treatments, as discussed above under the section on TBAs. The curandeiros interviewed did not recognize the ORS package.

D. Local Leaders (Regulos)

1. General Characteristics: Three regulos and other local leaders (the local chiefs and administrative police of the regador in Mecupe) were interviewed during the survey. This was done to further advise them of the project and to obtain additional information on the communities.

As with curandeiros, the regulos displayed a large measure of divisiveness; this was particularly evident in a joint meeting involving the regulos of Bassane and Chitobe.

However, they did list their primary concerns as lack of food, lack of water, illnesses, conflicts of land, lack of a hospital, and lack of information, particularly about health.

2. Stated Observations and Needs: Reported illnesses included diarrhea, scabies, tuberculosis, and sexually transmitted diseases.

They reported that the population goes to both the curandeiro, for identifying the cause, and to the health post, when ill.

The regulos requested the action of the government and any non-governmental organization in spreading messages through community education regarding all health and sanitation topics.

E. District Directorates of Health and Education

1. General Characteristics: Health and education staff from Machaze were interviewed also. Health staff indicated that the health unit in Bassane functioned with just an APE, but due to the population influx, a nurse was assigned there. Staff at the health units are as follows:

Machaze - Health Director, one General Medical Technician, five Nurses (two basic, and two elementary, and one SMI), one TBA, and seven Cleaners.

Chipudje - one Elementary Nurse, one Cleaner.

Bassane - One APE and one nurse.

2. Stated Observations and Needs: Health also records high rates of dysentery and diarrhea. The Education Director stated that health and nutrition were not part of the curricula, nor was this seen on observed curricula. He believed it might be difficult to offer some health/nutrition education courses in the schools, due to the fact that the curricula is established in Maputo.

However, the DPE has more information and is open to the possibility of activities involving nutrition and rehydration messages. Many school-age child are left to care for younger

children when their parents are working in the machambas. A walk through a village or bairro in the morning will reveal only these children at home in the majority of houses.

V. Nutrition and Health Education Recommendations

A. Knowledge and Practice Gaps

STANDARD RECOMMENDATIONS	OBSERVED/EXPLAINED PRACTICES
Breast feed for at least 2 years and longer if possible.	Mothers breast feed for at least two years.
Weaning foods introduced at 4-6 months of age.	Many mothers introduced weaning foods at less than 4 months of age.
Children receive variety of carbohydrate and protein-rich foods and vitamin/mineral rich fruits and vegetables.	Particularly at weaning, children may not receive adequate amounts of protein-rich foods and vegetables and fruits.
Children consume 5-6 meals per day.	Children consume only two or three meals per day along with the family.
Children ages 6m-3y weighed every month.	Most children do not go for regular weighing.
Liquids are given during diarrheal episodes for rehydration.	Liquids, particularly water, are limited during diarrheal episodes.
ORS must be properly mixed.	Recognition of the role of ORS is poor, and less know how to prepare it correctly.

B. Messages

Below are some suggestions in terms of messages, as related to the particular problems identified above. Most of these recommendations are part of the DPS's health messages, which are published in pamphlets and posters.

2. Breast feeding: Difficulties in the area of breast feeding, as reported by both mothers and TBAs, is a critical factor in the early introduction of solid foods - and infection, among other resulting problems. Many of these recommendations will have to be carefully stated in the context of limited time and resources. However, foods for a healthy diet do exist for most of the year in Machaze District.

- Breastmilk is the best food for a baby and all (s)he needs until four months of age.
- Frequent breast feeding both day and night stimulates the mother's breast to produce more milk.

- Breast feeding should be done in a quiet, relaxed environment.
- Weaning should not begin until after four months of age.
- At least four small meals per day for children.
- Weaning meals can consist of thickened papa, with additions to include protein/vitamin caril.
- All weaning and growing children must eat a variety of foods, and greens and fruits must be included each day.
- Go for/practice growth monitoring monthly.

3. Diarrhea: The high incidence of diarrhea among all members of the population indicates a need to stress rehydration and prevention practices.

- Dehydration is the major danger of diarrhea.
- Liquids must be given as soon as the diarrhea begins to replace lost liquids, and lots should be given.
- Besides ORS or home mixes, water is always good.
- Children must continue to breastfeed or eat papinhas little by little during diarrhea.
- Preparation of ORS.

C. Delivery of Messages

1. Overview: There is general agreement in terms of messages recommended for the discovered problems, although the messages must be further pinpointed to reflect the principal problems, beliefs, and conditioning factors encountered in the district. The most critical aspect for the nutrition education (including messages on rehydration) pilot is the identification of messengers and means of communication.

Two general factors must be considered. One is that the population, particularly women, are predominantly illiterate and speak principally Ndaou. (Literacy was tested during the nutrition survey in early 1994.) The second factor, as discussed above in the profile of beneficiaries, is the limited amount of time mothers have available due to other labor-intensive tasks such as fetching water, preparing massa, and working in the machambas.

It is, therefore, recommended that more means of communication and more communicators of a few common messages will be the most effective approach.

2. Messengers: The principle must be to communicate a common message to as many sources of influence as possible. Primary sources of influence include elders, curandeiros, local leaders, and to some extent TBAs.

The KAP survey revealed more similarities than differences in many beliefs of beneficiaries versus traditional service providers. Particularly notable is the belief in drink and foods restrictions during illness including diarrhea. Yet TBAs seemed more universally knowledgeable about the use and preparation of ORS. Also, it is interesting that the TBAs stated they recommended mothers go to the health post for registration of the newborn, yet the mothers' health cards do not reflect such action. Still, as related by the DPS, the more people aware of health messages, the better the possibility to change the health situation for the better.

There are plans to increase the number of trained TBAs in the district. It will be worthwhile to include nutrition and rehydration messages as part of their training. Also, the TBAs do have a contact, even if limited, with mothers and their children. Finally, the age of the TBAs includes them as elders, who are also providers of advice to mothers.

Curandeiros are not a cohesive group, and only one stated belonging to AMETRAMO. Also, they are for the most part secretive. It is recommended the curandeiros are not primary message deliverers for the pilot. Due to the short pilot period and the differences in the curandeiros roles and practices, it is not felt that they can be incorporated into the project at this time. However, it is recommended that the messages to be conveyed be shared with the curandeiros. This is necessary considering the important role they play in the communities in health care.

Likewise, other leaders of the communities, such as secretaries and regulos should be provided with the messages of the pilot.

The most viable and sustainable linkage to the communities can be through the existing Infant and Maternal Health Services of the DDS - Machaze. The DPS is working to see the DDS-Machaze increase outreach to the communities, as usage of the existing posts is low (although more returnees do utilize the posts) and mobile brigades are not as sustainable nor as effective in changing behavior. The main linkage can be through the DPS's Community Health Worker ("activistas de prevenção) program recently introduced in the district by the DPS.

The CHWs are respected members of the communities, selected by the communities and trained in basic community health. They receive no payments from the DDS.

Most importantly, changing food and child care practices is a

difficult activity. Thus, it is advisable to select communicators who are respected in the communities and who have the support of local leaders. The communities should be consulted in selecting the messengers.

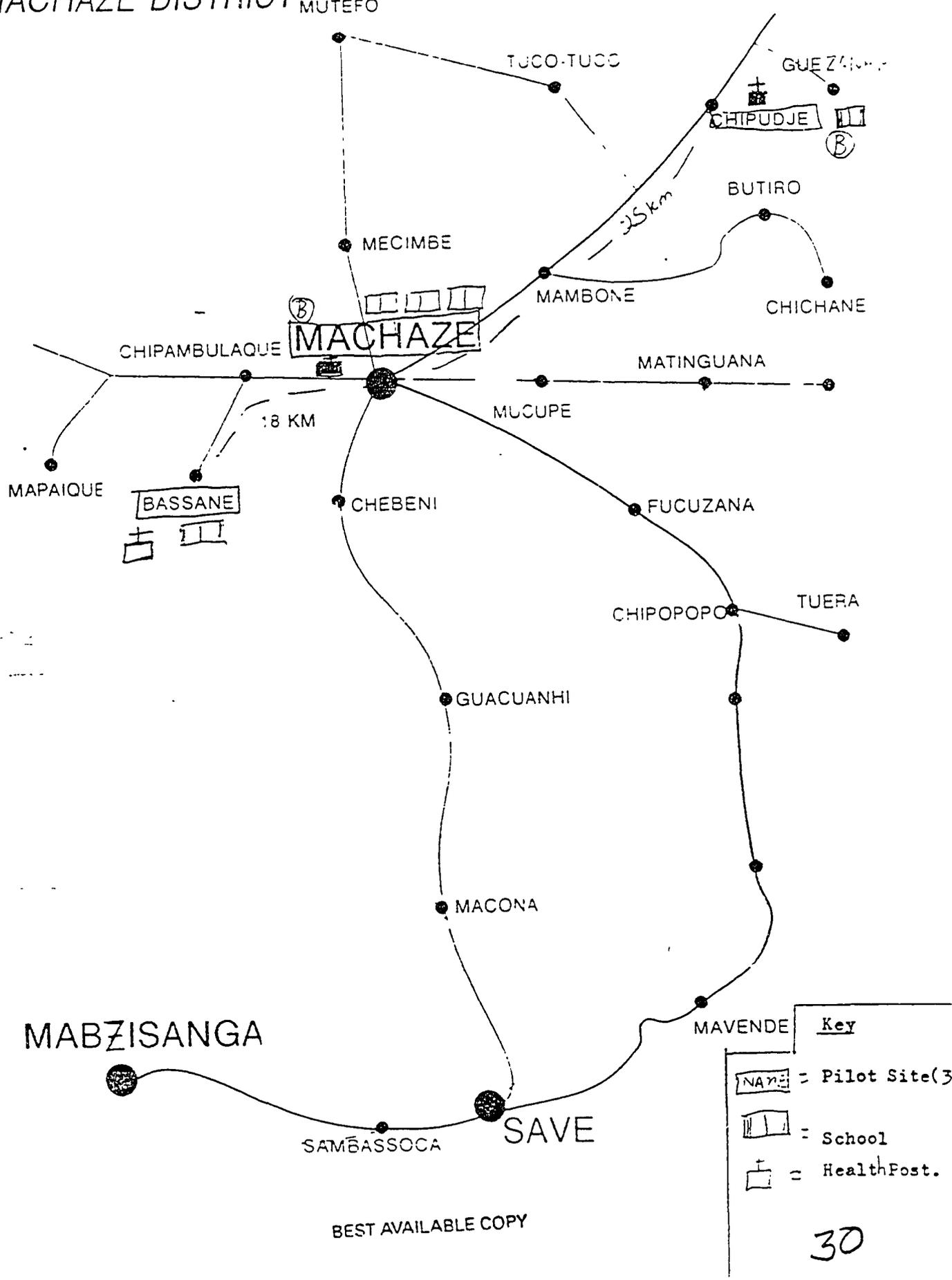
3. Setting for the Delivery of Messages: The members of the women focus groups expressed interest in community meetings in each locality. Contrary to the thought that the mothers may want to meet or hear messages while they are waiting for water, the mothers did not show interest. They said they were more intent on maintaining their place in line while at the pumps. But it is recommended that some means of communication be tested at these common gathering sites.

The emphasis must be on sites that are easily and frequently accessed by the target population. This is in order to take into account the many restraints on the mothers' time.

4. Media for the Delivery of Messages: It is recommended the pilot hold an initial workshop to test the acceptability and understanding of various means of communication, including the posters of the DPS, drawings, group discussions, demonstrations, role plays, theater, and songs. The TBAs and CHWs taking part would then solicit ideas from the communities in group meetings, which can be followed by home visits to at-risk households.

Women in the community do sing while conducting various work activities. Also, in activities with the local CARE water animators and initial meetings with TBAs, role plays and field practice proved highly successful and popular.

CARE MACHAZE DISTRICT



BEST AVAILABLE COPY

Appendix B
Individual Interview Questionnaire

1. Presentation

- 1.1 Explanation of CARE activities and the purpose of the study.
- 1.2 Who is the family head? (If it is the husband, ask how many other wives there are.)
- 1.3 Number of children less than five years of age resident with the family of the interviewed person.
- 1.4 Other dependent young children?
- 1.5 Does the mother use the health card? How? Verify its use and importance.
- 1.6 How long have you resided in this house?
- 1.7 The definition of mother at risk.
- 1.8 The definition of an adult.

2. Normal Food Habits Discussion Guide

- 2.1 What are you accustomed to eating each day?
For example, yesterday?
Number of meals per day (for adults and for children)
How did you obtain these foods?
- 2.2 What type of food do you give to your children so they are healthy and strong?
Do you know other foods that you think are better to give to your children?
How do you prepare them?

3. Breast feeding and Weaning Discussion Guide

- 3.1 [The youngest child] is still breast feeding?
- 3.2 At what age (in months) do you begin to give other foods besides breastmilk?
Type:
Preparation:
Storage:
- 3.3 If not (3.1), at what age did you stop breast feeding?
Why did you stop breast feeding?

Note: Repeat the questions for all the children of the

family.

4. Common Illnesses Discussion Guide

4.1 Who has been sick in your household in the last 2 weeks?

Type of sickness:
Children also?:

4.2 If a child was ill

Is s(he) better?
Type of treatment:
Why was that treatment chosen?

4.3 Do you always have this type of sickness?

Time of year:
Children or adults?:

4.4 Other frequent illnesses experienced by the family

Children (0-5 years of age)
Treatment:

5. Diarrhea Discussion Guide

5.1 Diarrhea Incidence

Among children:
In the last two weeks:
In general/frequency:

5.2 Treatment

How is it treated?
Food given:
Liquids given and quantity:

5.3 Types of Diarrhea

Severity:
Treatment and Hygiene:
Age:

5.4 Have you ever prepared a special drink using this (ORS)?

How is it prepared?

5.5 Have you ever prepared other drinks? How?

Appendix C
Observation Sheet

Date: _____

Village/Bairro: _____

Interviewer: _____

- =====
1. Family level: good normal poor
 2. Note the household items: _____
 3. What is the condition of the family's clothing?
 good normal poor
 4. Water storage: _____
 5. Latrine: yes no
 6. Evidence of feces around the house: yes no
 7. Animals/dogs around the house: yes no
 8. How many times do you eat per day?
 9. General state of health of child(ren):
 good normal poor
 10. Are there flies in the household yard? yes no
 11. Where was the health card issued: Mozambique
 Zimbabwe
Other country _____
 12. Date of most recent visit to health unit: _____

Does the card have all important data registered? Ask questions to clarify. Review the card with the observer/recorder.

Observations: _____

Appendix D
Curandeiro Interview Guidelines

1. What type of disease do you treat, do you treat the most?
2. How many people arrive for treatment every month? men? women? children?
What month(s) do you see more clients?
- 3a. Do you work with local TBAs?
- 3b. How many clients have you assisted during the year?
4. How much do you charge for the services provided? money? food?
5. What complaints do you treat the most?
6. Are there any prohibitions (food, drink) for various types of illness?
7. What is your busiest time of year?

Appendix E
TBA Interview Guidelines

1. What area do you cover?
2. How do you work?: Initial contact, birth, postpartum
 - 2.1 How many women do you see weekly, monthly, annually?
 - 2.2 Do you keep a list?
3. How many other people have you seen this month with problems related to pregnancy or not?
4. How do you proceed before the birth, at birth, after?
5. How much do you charge? money? food?
6. What complaints do you treat the most?
7. Are there any prohibitions (food, drink) for various types of illness?
- 8a. What is your busiest time of year?
- 8b. When do you see your clients?
9. Where do you assist births? Home of the client/your home?

Appendix F
KAP Survey Schedule

- Nov. 15-19: Training for all team members.
- Nov. 21: Individual Interview: At-risk mothers - Machaze
Debriefing
- Nov. 22: Individual Interview: At-risk mothers - Bassane
Debriefing
- Nov. 23: Individual Interview: At-risk and non-risk mothers -
Chipudje Debriefing
- Nov. 24: Individual Interviews: Non-risk mothers - Machaze
Key Informant Interview: Curandeiro - Machaze
Key Informant Interview: Curandeiro - Bassane
Individual Interviews: Non-risk mothers - Bassane
Debriefing
- Nov. 25: Preparation for TBAs Focus Group
Key Informant Interview: Curandeiro - Chipudje
Debriefing
- Nov. 28: 8:00am: Training for focus groups
2:00pm: Key Informant Interview: Curandeira - Machaze
4:30pm: Debriefing. All
- Nov. 29: 8:00am: Focus group: TBAs of Machaze, Chipudje,
and Bassane
10:00am: Key Informant Interview: Health/Education
4:30pm: Debriefing. All
- Nov. 30: 8:00am: Focus Group: Non-risk mothers - Bassane
8:00am: Key Informant Interview: Local leaders -
Chipudje
11:00am: Key Informant Interview: Local leaders -
Machaze and Bassane
4:30pm: Debriefing. All
- Dec. 1: Focus Group: Non-risk mothers - Machaze.
- Dec. 2 - 14: Analysis and reporting

Appendix G
Glossary

Agua Doce	- Sweet, or non-salty water
Aldeia	- Village
Bairro	- Administrative division of a village
Bomdeiro	- Sausage tree
Cacana	- A local plant whose leaves and unripe fruit are consumed
Caril	- Complementary food eaten with staple cereal
Cerelac	- A fortified infant cereal
Curandeiro/a	- Traditional healer
Hacua	- Massala tree whose fruits and seeds are eaten, also known as monkey fruit.
Localidade	- Administrative ward of several villages
Machamba	- Term for farm or field
Massa	- Meal made of cereal (maize, sorghum, millet)
Matapa	- Cassava, whose leaves are used for Caril
Maweu	- A liquid blend of water and flour with sugar
Mbiamuana	- Local term for a TBA
Muerere	- Sausage tree in Ndau
Munga	- Bulrush millet
Ndau	- Ethnic sub-group of Shona and their language
Nhamukuta	- Local term for a TBA ("Grandmother")
Nipa	- Alcoholic drink
Papa	- Watered down gruel made of various cereals, usually a weaning food, or used other times when "light" food is required.
Parteira	- Traditional Birth Attendant (TBA)
Quintal	- Household yard, plot
Regador	- Local chief of an area
Regulo	- Traditional chief or headman, reports to an area regador

**Appendix H
References**

1. CARE-Mozambique, Machaze District Food Security and Infrastructure Rehabilitation Proposal, 1993.
2. Anderson, N., CARE Nutrition Baseline Survey, March 1994.
3. Wesson, Richard, "A Water Resources Study of Northern Machaze District", March 1994.
4. Bannerman, J.H. and M. Schmitt, "IRDSP-Part IIC", November 1993.
5. Greene, J., "The Snake in the Stomach: Child Diarrhoea in Central Mozambique", Medical Anthropology Quarterly, 1994.
6. Greene, J., "Sexually Transmitted Diseases, AIDS and Traditional Healers in Mozambique", Medical Anthropology Quarterly, 1993.