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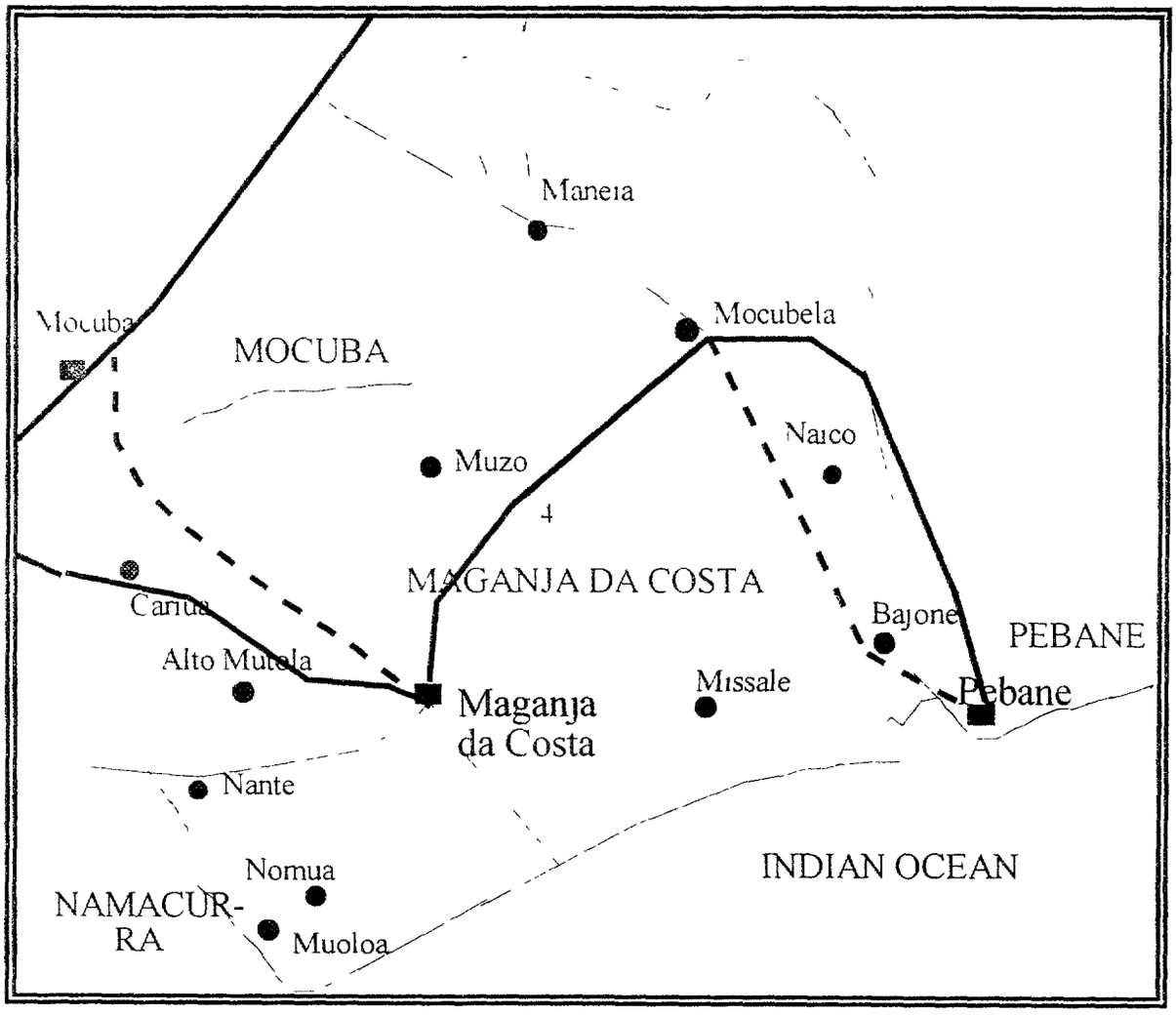
BASELINE SURVEY

ADRA/USAID DEVELOPMENT PROGRAMME

MAGANJA DA COSTA



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LIST OF ABBREVIATIONS

ADRA	Adventist Development and Relief Agency (ADRA)
DDA	District Directorate of Agriculture
DPA	Provincial Directorate of Agriculture
DPS	Provincial Directorate of Health
MSU	Michigan State University
NGO	Non Governmental Agency
ORAM	Association for Mutual Rural Assistance
UNIMOZ	United Nations Peace Keeping force in Mozambique
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

In 1996 the Adventist Development and Relief Agency (ADRA) received funding from USAID for a development programme in Maganja da Costa The programme targets 4000 small holders and the main objective of the programme is to improve food security through sustainable improvement in food availability and food access Activities include cashew reforestation encouraging intercropping between the immature trees development of smallholder associations improving food access and availability through improved crop marketing strategies and increased access to markets through road rehabilitation and the promotion of improved crop storage methods

The baseline survey was conducted in June 1997 Cluster sampling was used to select a random sample of 20 villages from the target area Thereafter approximately 26 households were randomly selected from each village for interviews A total of 528 households were included Even though the baseline survey was carried out successfully with only some minor problems certain adjustments are needed for future surveys Some minor changes will have to be made to the questionnaire and the impact assessment and sampling methodology The most important reason for changes to the latter is the fact that participating and non-participating households were not similar at baseline It is recommended that the basic assessment methods (combination between reflexive and comparison group design) be kept but that impact assessment be limited to a comparison between participants and non-participants with cashew trees Instead of random sampling within a village a random sample of 16 households from participating households and 10 non-participating households with productive cashew trees will be selected from each village for the mid-term and final surveys This will result in a total sample size of 340 households in the experiemental group and 200 in the control group Changes will not only be measured across groups (comparison design) but also over time within each group (reflexive design)

Even though the programme does not yet include a small business development component there are plans to include it in the future The findings suggest that households are engaging in a variety of different economic activities in addition to their agricultural production activities There are some indications that households in Mocubela and Bajone are slightly better off economically than their counterparts in Maganja da Costa and Licungo (more households with high value household possessions) All indications are that these two areas presently have more buying power and more entrepreneurs than the remainder of the district and that efforts to improve marketing and commercial activities will have a greater chance to succeed than elsewhere It may be possible to start with small enterprise development pilot programmes in these two areas during the next financial year In Maganja and Licungo large scale road rehabilitation will still be needed before one may expect any significant changes in communities that will provide the growing medium for sustainable small enterprise development This may take two to three years to accomplish

The programme is aimed at improving food access and food availability for participating households Initially the programme would have included a basic health and nutrition education component, but this was changed during the first programme review in May 1997 The main vehicle for changing food intakes will be increased production of a greater variety of high quality crops Generally the variety of crops available during this time of year have the potential to supply in all the basic nutrient requirements of the inhabitants of the district At present Maganja da Costa and Licungo have the lowest frequency of protein intake of all the surveyed areas The promotion of bean and groundnut cultivation will make a big contribution towards changing the situation

Even though the vast majority of households consume carbohydrate rich foods at least once a day, around 20% did not eat it that often The programme should aim to increase the percentage of households where carbohydrate rich foods are eaten at least twice a day through the introduction of improved varieties and increasing seed availability Fruit and vegetable consumption was generally poor 78% of households did not eat any fruit in the week preceding the survey Vegetable consumption was slightly better but 72% of households still reported not eating vegetables or eating it less frequently than once a day Even with the abundance of cassava leaves only 36% of households in Bajone and 49% of households in Licungo said that the women and children consumed leaves in the week preceding the survey This is an example of where supply exist but a lack of education (perhaps on the preparation of cassava leaves) influence nutrient intakes Even though the nutrition component of the programme has been temporarily suspended serious consideration should be given to obtaining additional funding to start with nutrition education campaigns in the most marginal areas

Sixty one percent of the surveyed households had at least one child with a case of diarrhoea during the two weeks preceding the survey The highest incidence of diarrhoea was reported in Mocubela and Bajone where food production was higher than in other areas The gains in food production/food supplies in terms of health and nutrition will be greatly reduced because of the high incidence of diarrhoea It is therefore recommended that the nutrition component of the programme also include basic concepts related to the prevention and management of diarrhoea

Most households experience food shortages during 4-5 months of the year Food shortages coincide with the cashew harvest season and the time when land preparation is done for most other crops If the cashew harvest is preceded by a below normal harvest of subsistence crops, households are more likely to consume cashew to augment their food supply than they are to sell it (particularly in the absence of good marketing structures and prices)

The most important crops cultivated during the past season were cassava rice groundnuts sweet potatoes and beans Households in Mocubela and Licungo planted the greatest variety of different kinds of crops and were able to market some of their excess produce Given present intercropping practices nutritional needs and the fact that the main vehicle for improving food security will be through intercropping with cashew it may be advisable to focus on promoting sweet potato, beans groundnuts and maize for intercropping with cassava These crops will make a big contribution to food security and nutritional status and most of them have substantial commercial potential

Surprisingly low numbers of households reported owning productive cashew trees Maganja da Costa has the lowest ownership rates of cashew trees - 45% of households said that they have no trees Bajone (59%) and Mocubela (48%) had the most households with productive trees and Mocubela appears to have the most farmers interested in renewing their cashew plantations, with 32% of households reporting having young cashew trees The yields of the past season was particularly poor This is reflected in the commercial sales of cashew which was only 60% of the total for the 1995/1996 season Only 25% of households with productive cashew trees reported selling any of their produce during the past season Mean incomes from sales were 179 447 meticais, whilst the mean yield per tree was approximately 3 69 kg s

The present low levels of cashew production and commercialization in the Maganja da Costa administrative post possibly indicates the need for development assistance with the production of cashew However the present lack of initiate in establishing new young cashew trees may signify that households are not that motivated to change their own situation which by all indications is not the best in the district Efforts to establish sustainable programmes in this part of the district may be met by apathy and a lack of interest in active participation

1 INTRODUCTION

1 1 General

Towards the middle of 1996, USAID/Food for Peace approved a multi-sectoral, multi-year funding proposal submitted by the Adventist Development and Relief Agency (ADRA) for the period 1996-2001 The programme is based in Maganja da Costa, Zambezia Province and targets 6400 small holders The official objective of the programme is improved household income through sustainable improvement in food availability and food access

The main activities of the programme are

* Facilitating cashew reforestation with improved varieties and sustainable agricultural methods This will contribute towards improved household income in the medium to long term

* Encouraging intercropping between the immature trees in order to boost household food production and increase access to food in the short term

* Developing of smallholder associations in collaboration with ORAM (Association for Mutual Rural Assistance)

* Improving food access and availability through improvements in crop marketing strategies This will include training farmers about improved marketing strategies increasing their access to marketing information and increasing their access to markets through the rehabilitation of roads

* Increasing food availability/security through the promotion and construction of improved crop storage methods in conjunction with the DPA (Provincial Directorate of Agriculture)

The initial project proposal included a nutrition/primary health care component but this has been removed from the programme in consultation with USAID/Food For Peace during the project review that took place in May 1997 It was however agreed that ADRA should continue to monitor some key nutrition indicators for possible programme expansion at a later date In the medium term, funds previously designated for nutrition/health will be channeled into the road rehabilitation programme

1 2 Background to this study

ADRA conducted a survey in Maganja da Costa during January 1996 The survey was aimed at gathering general information about the situation in the district These findings were then used for the preparation of the project proposal It was however felt that a baseline survey for monitoring and evaluation purposes should be conducted towards the end of the 1996/1997 season in the target areas selected for programme implementation In addition to measuring the baseline values for the selected indicators, the survey also had to verify the appropriateness of these indicators and setting attainable targets The baseline survey was conducted during June 1997 and the questionnaire was kept as short as possible only including the minimum necessary to measure programme impact ADRA accepted responsibility for the fieldwork whilst Research Consultancy Services designed the sample framework questionnaire and prepared the report

2 METHODOLOGY

2.1 Impact evaluation framework

Considering that the project has a very clearly defined target group (the 6400 participants in cashew reforestation) the most appropriate evaluation design for this project will be a combination of the Comparison Group Design and Reflexive Evaluation Design. With Comparison group design indicator differences between participants and non-participants are measured. Combining this approach with the Reflexive Evaluation Design means that these changes are measured over time - in this case at baseline, mid-term and final evaluation stages.

Approximately 25% of the households interviewed participate in the programme at present. Because the programme started so recently, participation at this stage means that interested farmers have been identified. Most of the participating farmers included in the survey come from Mocubela and Bajone. Their distribution amongst the administrative posts are as follows:
Mocubela : 38%, **Maganja** 29%, **Bajone** 21%, **Licungo** : 12%.

Despite the small number of participants (129 households) it is still possible to do a comparative analysis to identify the most appropriate control group for the mid-term and final evaluation surveys. Table 1 below and Table 0 in the appendix summarise the main findings of the analysis.

Table 1. Comparison between participating and non-participating households

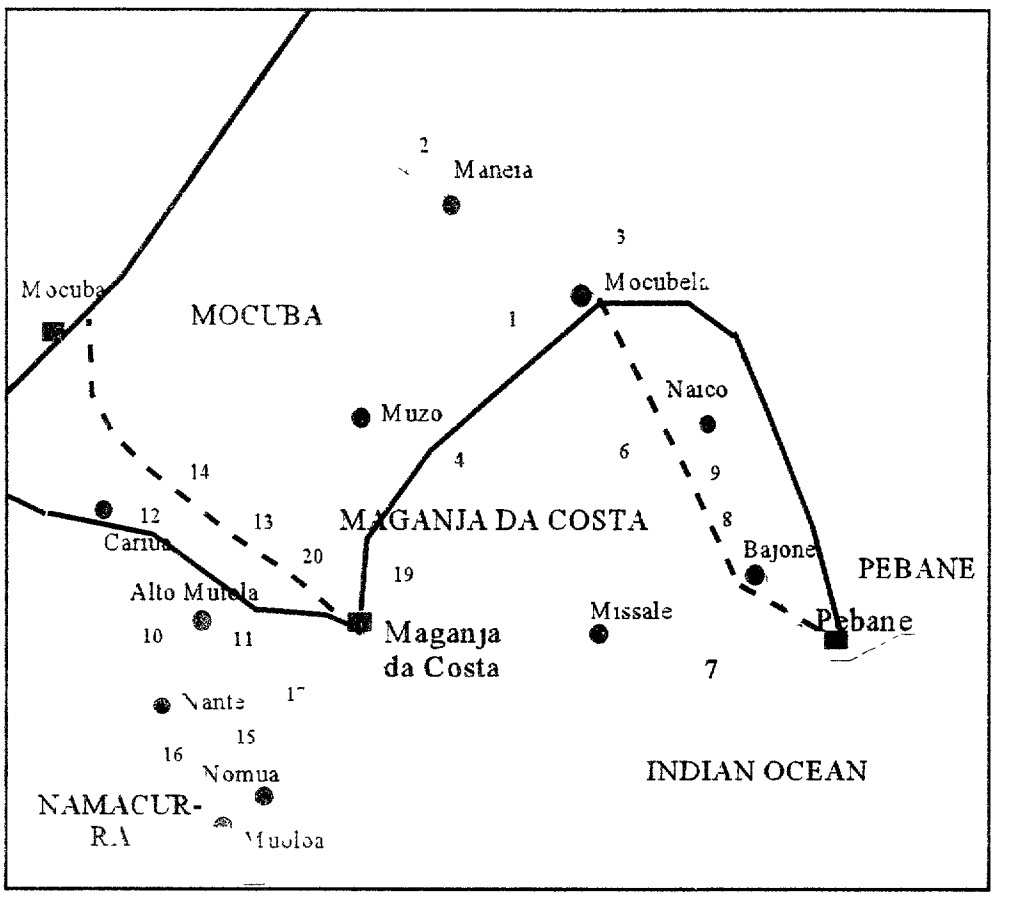
Characteristic	Non-participating households	Non-participating households with cashew trees	Non-participating households with productive cashew trees
Monetary value of household possessions	Statistically significantly more non-participating households are in the 0-250000 mt interval **(P=0.04)**	No significant differences (p=0.24)	Statistically significantly more non-participating households are in the 1000000 interval **(p=0.08)**
Number of months when food shortages are experienced	No significant difference p=0.16	No significant difference p=0.4	No significant difference p=0.97
Main sources of income			
Sold food crops	Significantly more participants reported income from agricultural sales **(p=0.00)**	Significantly more participants reported income from agricultural sales **(p=0.01)**	Significantly more participants reported income from agricultural sales (p=0.35)
Sold cashew	No significant differences (p=0.87)	No significant differences (p=0.56)	Significantly more non-participants sold cashew **(p=0.00)**
Temporary work	Significantly more participants reported income from temporary work **(p=0.05)**	Significantly more participants reported income from temporary work **(p=0.02)**	Significantly more participants reported income from temporary work **(p=0.02)**
Non-agric self-employment	No significant differences (p=0.85)	No significant differences (p=0.85)	No significant difference (p=0.59)
Sale of natural resource	No significant differences (p=0.74)	No significant differences (p=0.97)	No significant differences (p=0.14)
Owns productive cashew trees	Significantly more participants own productive cashews **(p=0.01)**	No significant differences (p=0.78)	Significantly more non-participators own productive cashews **(p=0.00)**
[illegible]	[illegible] own young cashew trees **(p=0.00)**	[illegible] (p=0.49)	(p=0.88)

Further analysis of the data showed (see Table A1 in Appendix) that the sub-group that is most comparable to participating households at baseline, is non-participating households with cashew trees. Comparisons of all indicators summarised in Table 1 revealed no statistically significant differences between these two subgroups, except in the earning of income from the sale of agricultural produce and from temporary wages Significantly more participating households received an income from these two sources

2.2 Baseline survey methodology

The cluster sampling method was used for the baseline survey Firstly a proportionate random sample of 20 villages were selected from a list of all the target villages Villages that have fewer than 30 households and are inaccessible at the moment were excluded from the list During the second stage a random sample of 26 households had to be chosen for interviews in each village As can be seen in the table on the next page there were some slight variations in the field Some villages had 27 sampled households instead of 26 and one only had 25 The map below illustrates the geographic distribution of the sampled villages

Map1·Target areas and selected villages



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2.2 Baseline survey methodology

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Map1. Geographic distribution of the sampled villages

The total sample size consisted of 529 households This number is sufficient considering the variations observed during the 1996 survey and the need for a sample size that is large enough to incorporate possible non-participation in the programme The mid-term and final evaluation surveys will be conducted in the same villages selected for the baseline survey The map on the previous page illustrates the distribution of the sampled villages (numbers on map), whilst the table on the next page contains a detailed list of these villages The location of the survey villages (generally not too far from the main roads) to some extent reflect the actual distribution of villages but is also influenced by poor accessibility in a large part of the district as villages that are inaccessible by road were excluded from the survey This further emphasize the importance of the road rehabilitation segment of the programme and may indicate a need to include one presently inaccessible village in each Administrative Post (AP) for the next survey This might provide interesting insight into the changes that take place before and after road access is improved Even if it is only monitored over a two year period

Table 2· Villages selected for the baseline survey

Administrative Post	Locality	Village	Number on map	Sample size
MOCUBELA	Mocubela sede	Aliua	1	27
	Maneia	Matiquina	2	27
	Mocubela sede	Moluchiua	3	27
	Muzo	Muadebo	4	27
	Mocubela sede	Mucuna	5	27
BAJONL	Naico	Nialene	6	27
	Nacuda	Namete	7	27
	Nacuda	Madabo	8	27
	Naico	Alto Mutabide	9	27
BAIXA LICUNGO	Alto Mutola	Racinha	10	26
	Alto Mutola	Mucigombe	11	26
	Nante	Mussaia	15	26
	Nante	Muebene	16	26
MAGANJA SEDE	Cariua	Nacupe	12	26
	Mutange	Marabua	13	26
	Cariua	Nhafhuba	14	26
	Diba	Malaba	17	26
	Puzuzo	Muranga	18	26
	Mecia	Nangamua	19	26
	Nialene	Zona E	20	26

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The only village initially included in the sample, which had to be replaced during the survey, was Namomba in Maganja da Costa The village was busy with certain rituals when the survey team arrived and the chief requested them to rather work elsewhere Namomba was then replaced with Nansamua, a neighboring village with similar socio-economic characteristics The supervisors and field workers used participatory mapping for household selection within sampled villages A map of the village was drawn by key informants whereafter it was divided into segments allocated to each field worker A village guide then accompanied each interviewer to the section where they had to work Households were randomly selected by the interviewer and not the guide

The interviewers worked in groups of two one conducted the interview and the other recorded what was said This method was more costly but certainly contributed towards the reliability of the data and the interviewers were able to create a less stressful and invasive interviewing environment for the farmers They were asked to interview household heads but were also encouraged to ask for the presence of the wife of the household head in the case of male headed households or another adult household member

Approximately two thirds of the main respondents were male The remaining third was more or less evenly divided between female headed households and wives of male household heads In Mocubela and Bajone close to half of the interviews had two respondents A third of the secondary respondents were other adult male household members and approximately half of them were the wives of the household head In Maganja da Costa and Baixa Licungo only 15% of the secondary respondents were assisted by another household member during the interview

2 3 Data capture and analysis

EpiInfo version 6 was used for data capture and analysis This programme was chosen because ADRA used it for their previous survey and many of its employees feel comfortable using the programme Familiarity with the programme will make it easier for the staff to do additional data analysis if needed in the future

3 SOCIO ECONOMIC CONDITIONS

3 1 General

Maganja da Costa was severely affected by the war In addition to heavy fighting in many zones it was also physically isolated by its distance from the capital and poor access roads Whilst some neighboring districts, such as Pebane, had access to Quelimane by sea, Maganja da Costa had to rely on the occasional brave passerby for contact with the outside world In addition to the destruction of infrastructure, the district also lost most of its civil servants as can be seen from the exceptionally low numbers of health professionals in the district (also see the discussion in section 4) Access to health services is poor, particularly in Bajone and Mocubela Only two of the twenty villages included in the study have health centers/health posts Access to education facilities is slightly better - 70% of the communities have at least one primary school

Most households surveyed only have one house These houses are generally constructed (77%) with clay and sticks and a thatched roof The only significant number of alternative building materials can be found in Bajone and Maganja da Costa where a third of households used sun dried clay bricks for their houses

3 2 Household Possession index

Since it is extremely difficult to measure socio-economic status or household income, one of the indicators frequently used is an inventory of household possessions The ownership of livestock, production instruments and household goods is usually regarded as important components of household wealth (see question G in the copy of the questionnaire that can be found in Appendix D) This list of goods reflect the standard list as proposed by MSU for all USAID funded programmes Various approaches can be used for the analysis of this kind of data For the purpose of this study it was decided to attach monetary values (reflecting present values of these goods in rural and urban areas - see Appendix C) to the possessions owned This was then added to arrive at the total value of household possessions at the time of the survey The table below summarizes the findings of this exercise

Table 3 Monetary value of household possessions

Range in meticais of total possessions	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Barra Licungo	TOTAL
% of households with possessions totaling					
0-250000 mt	45	46	56	56	51
250000-500000 mt	3	19	22	21	23
500000-1000000 mt	11	10	9	16	11
1000000+ mt	13	25	13	7	14

The distribution of possessions within Bajone is slightly less skewed than in the other three AP s, with a bigger percentage of households in the 1000000+ bracket Households in Mocubela and Bajone appear to be slightly better off with fewer households in the lowest (0-250000) category Nevertheless most households are extremely poor and own very few possessions

3 3 Household income sources

Unfortunately it is very difficult to get an accurate measure of household income in rural Mozambique The problems with measuring it are related to the characteristics of the rural economy - sales of agricultural produce and even harvesting takes place as income/food is needed Since no large scale buying of agricultural produce is taking place at the moment there is little incentive to harvest a large part of the crop and sell it all at once It is virtually impossible for rural households to remember all the little transactions when asked about sales and even household consumption/harvest In terms of income the measurement challenge is further compounded by the big role that bartering plays in the rural economy of the district This is the reason why it was decided to only measure sources of income and general expenditure

Agricultural production and the sale of produce[1] is the main economic activity of households in the district Generally households also engage in a variety of other activities to make ends meet

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1 There are differences between the percentages of people who reported income from the sale of agricultural produce and the actual sales recorded in the question on agricultural production because
* [illegible] the period of a year whilst the question about agricultural production related to the past season
* The agricultural production question only contained a list of crops of relevance to the programme and did not list all crops

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The most important of these are The sale of food crops (42%) temporary incomes (36%), sale of traditional liquor (35%) and the sale of natural resources such as water wood venison fish honey etc (16%) Mocubela had the highest level of income generating activities that were not directly associated with agricultural production The four most important sources of income for households (expressed as the percentage of households who earned an income from a particular source during the past year) were

Mocubela

* Sale of food crops (56%)
* Temporary income (51%)
* Sale of traditional liquor (27%)
* Sale of water wood venison fish honey etc (21%)

Bajone

* Sale of food crops (47%)
* Sale of caju (25%)
* Non-agricultural self-employment (25%)
* Temporary income (25%)

Maganja da Costa

* Sale of traditional liquor (53%)
* Temporary income (36%)
* Sale of food crops (34%)
* Non-agricultural self-employment (9%)

Baixa Licungo

* Sale of traditional liquor (28%)
* Sale of food crops (29%)
* Temporary income (28%)
* Buying and selling of clothes food, cigarettes etc (9%)

More details about other sources of income can be found in Table A3 in the Appendix The variety of alternative sources of income was generally smaller in Maganja da Costa and Baixa Licungo than in Mocubela and Bajone

3 4 Off-farm income generating activities

There were no significant differences between the four Administrative Posts in terms of the percentages of people involved in off-farm income generating activities, but big differences in the variation of activities Approximately a quarter of people older than 10 years engaged in off-farm self-employment activities These activities ranged from carpenter to traditional healer

Table 4 People involved in off-farm income generating activities

Variable	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
% people older than 10 years old involved in off-farm self-employment activities during the past 12 months	28	26	27	25	27
% of people older than 10 years old who sold their labor to others during the past 12 months	22	13	14	13	16
% of households who received remittances during the past 12 months	25	32	13	20	22

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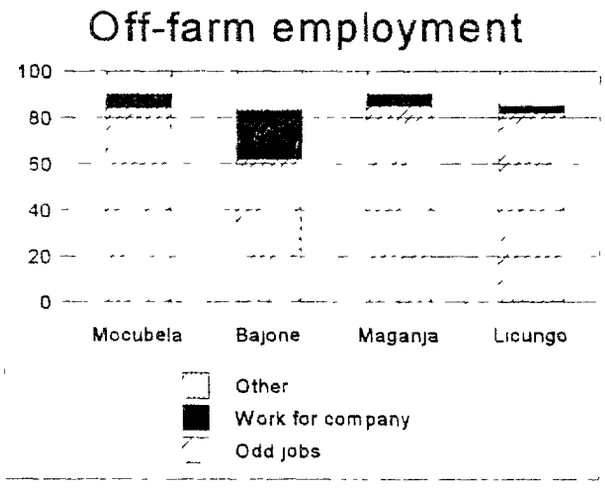
In Mocubela the most important activities were sale of tobacco/cigarettes (15%) sale/manufacturing of liquor (11%) making of grass mats (8%) buying and selling of cassava (7%), sale of fish (6%) and home crafts (5%) The main activities in Bajone were slightly different with 9% tailors, 7% selling fish, 7% sellers of cigarettes/tobacco, 6% fishermen, 5% weaving of grass mats and 5% traveling salesmen

Maganja da Costa and Licungo were very different - even though similar percentages of individuals engaged in off farm income generating activities they generally took part in a smaller variety of different enterprises Activities done by more than 5% of individuals were sale manufacture of traditional liquor (59 7%) sale of various products (9%) and carpentry (6%) Licungo also had a large number of liquor manufacturers/sellers (49 2%) fishermen (14%) sellers of diverse products (8%) sale of fish (6%) and sellers of cigarettes/tobacco (5%)

Slightly more people in Mocubela (22% as opposed to approximately 13% in the other AP s) sold their labor to others in an effort to gain an income As can be seen in the graph below, these activities were largely temporary work (70%) which mostly include working on other's farms for payment in kind or with money Other important activities in all four AP s included work on other people s farms and work for companies In Bajone where there are commercial agricultural producers such as Madal and Companhia de Zambezia and where people have close access to job opportunities in Pebane there was the highest percentage of people who reported working for a company

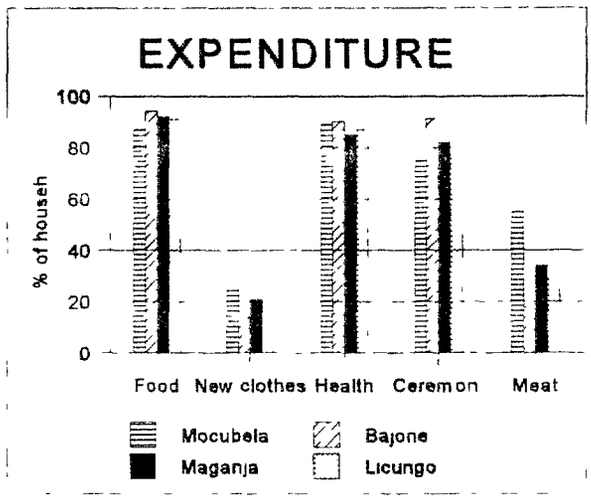
Graph 1 Nature of off-farm employment



3 5 Household expenditure patterns

Within the context of the strong role that bartering plays in the rural economy household expenditure was defined as the expenditure of household resources rather than just money The graph below shows that food second hand clothes capulanas, personal articles, health and feasts and ceremonies were the most important items that households spent money on during the past year New clothes is often used by large companies to barter with copra and cashew Interestingly enough the absence of health posts and centers in Mocubela and Baixa Licungo made no difference to the percentages of people who reported spending money on health as people visited their only alternative - the traditional doctor The expenditure patterns were very similar in the various health posts

Graph 2 Household expenditure patterns during the past year



The percentages of households who spent money on food health and ceremonies showed only slight variations between Administrative Posts Slightly fewer households in Maganja da Costa spent money on food - probably reflecting slightly better harvests during the past season than in the other areas Expenditures on new clothes and meat are often regarded as indicators of household socio economic status There were fewer households in Bajone and Licungo who reported spending money on new clothes and meat The differences in meat consumption may be as much related to socio-economic status as to supply For example in Mocubela there is still a lot of game and reasonably priced meat is available This may have influenced the relatively high percentage of households who said that they spent money on meat

4 HEALTH AND NUTRITION

4 1 Health services network

Maganja da Costa has been at the tail end of health provision in the province The total number of health professionals (14) in the district and the ratio health post workers per health facility (1 4) are the lowest in the province (DPS 1997) There is only one health center and nine health posts in the district The health posts are in Nante, Mocubela, Bajone, Gurai, Tapata Matacuro Vila-Valdez, Mabala Mugaua A Alto Mutola e Naico Action Aid is the only NGO presently assisting the District Directorate of Health with the provision of health services

4 2 Incidence and treatment of diarrhoea

The incidence of diarrhoea amongst children under five gives a good idea of the general health and sanitation situation in communities Diarrhoea is also closely associated with malnutrition as frequent bouts can be as much a cause of malnutrition than dietary adequacy In the two administrative posts with the poorest access to health services Mocubela and Bajone two-thirds of the households with children under five had at least one child with diarrhoea during the two weeks preceding the survey In Maganja da Costa and Baixa Licungo the incidence was slightly lower - approximately 54% of households in these areas experienced problems Its incidence amongst adults was also much lower than in Mocubela and Bajone Nine percent of households had problems with diarrhoea amongst adults as opposed to 39% of households in Mocubela and 26% Bajone (also see Table A5 in the Appendix A) Feeding practices when children under five have diarrhoea varied a lot but households in the Maganja da Costa Administrative post, appear to have slightly better practices Fifty eight percent of the surveyed households believe that a

child should receive less or no food when they have diarrhoea In Mocubela and Bajone between 25 and 30% of households reported giving no food at all during episodes of diarrhoea

Table 5: Diarrhoea amongst children under five

VARIABLE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
% of surveyed households with health posts within a 10km radius	20	25	43	75	40
% of households with children under five with one case or more diarrhoea during the past two weeks	70	67	53	55	61
Feeding practices during the most recent cases of diarrhoea amongst children under five[2]					
Breast milk					
1 % None	11	9	5	0	8
2 % Less than normal	43	49	47	56	47
3 % The same	34	27	26	38	31
4 % More than normal	11	15	21	6	15
Liquids					
1 % None	0	3	0	0	1
2 % Less than normal	27	36	26	45	31
3 % The same	35	28	45	25	35
4 % More than normal	39	33	30	30	34
Food					
1 % None	30	25	11	15	21
2 % Less than normal	25	42	36	55	37
3 % The same	11	28	43	30	36
4 % More than normal	15	6	9	0	6

4 3 Household food supply

One of the best indicators of food security is the duration of the period when households experience food shortages The mean duration of the hunger period is 4 6 months in the district as a whole Mocubela had the shortest mean hunger period with 4 1 months The mean number of months when shortages are most prevalent are

Mocubela - 4 1 (SD- 1 2)
Bajone - 4 6 (SD- 1 3)
Maganja da Costa - 4 9 (SD- 2 0)
Baixa Licungo - 4 8 (SD- 1 4)

[2] The responses only apply to households where there were cases of diarrhoea amongst children under five during the past two weeks Children who have been weaned were excluded from the analysis of practices on breast-feeding and likewise [illegible] children who [illegible] small to eat been excluded from the section on eating habits

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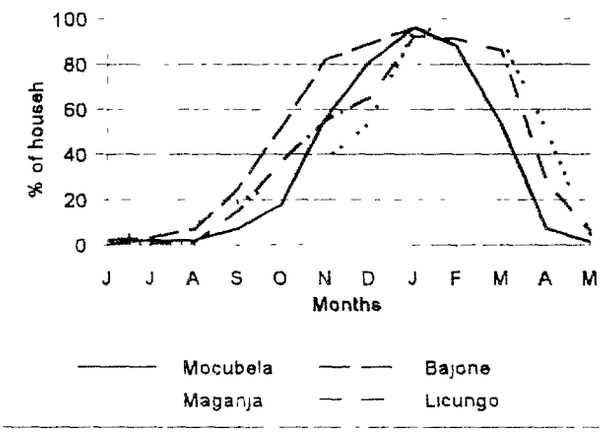
Graph 3 shows that the hunger period generally started and ended earlier for more households in Mocubela and Bajone than in the other two PA s The duration of the hunger period is also slightly shorter for most households in Mocubela The months with the most serious food shortages across the whole district are January and February when more than 80% of households do not have sufficient food to eat

Graph 3 Months when food shortages are experienced



4 4 Household food consumption

The diet consumed by women and children in the 7 days preceding the baseline survey largely reflects agricultural production in the various Administrative Posts Cassava is the staple and was consumed by more than 90% of the households in the week preceding the survey The most widely consumed foods in Mocubela (eaten by more than 40% of the population) are leaves beans groundnuts sweet potato rice and sugar cane Coconut fish, sweet potato rice, sugar cane and beans are important dietary components in Bajone, whilst more than 40% of households in Maganja da Costa ate leaves groundnuts, fish and sugar cane The diets of households in Licungo mainly consisted of rice leaves groundnut, fish sugar cane and coconut (see Table A7 in Appendix A for more details)

The variety of foods included in the diet of more than 40% of the households, show that during the harvest season the available food can satisfy the basic physiological requirements for carbohydrates protein and vitamins Even though different foods are available in the different zones, the different combinations still have the potential to supply the basic nutritional requirements For example, in areas such as Mocubela and Maganja da Costa, where limited amounts of coconuts are available, groundnuts supply the energy, vitamins A and E that the inhabitants of Bajone and Licungo derive from coconuts Likewise is the lower availability of fish in Mocubela, compensated for by greater production/access to protein rich beans groundnuts and sweet potato Despite the apparent access to a reasonable variety of different foods frequency of consumption suggests that there are some problems (even in the season of plenty) The table on the next page shows that the consumption of main staple foods, rich in carbohydrates (cassava rice sweet potato) was very similar in the four Administrative posts and that 80% of households eat it at least once a day Unfortunately it is very difficult, if not impossible, to get accurate estimates of portion sizes in this kind of survey and it is therefore impossible to reach any conclusion about adequacy

were measured The other 80 children were either not at home when the survey team visited their houses or their mothers refused to have them measured This problem is associated with the practice that children are usually only measured after their deaths for the preparation of a coffin Therefore measuring without an accompanying growth monitoring education campaign is a sensitive issue ADRA also decided beforehand that none of the field workers have to insist on measuring a child if the parents do not want it The risk to the rest of the programme would have been too big if a child died after being measured and the parents associated the death with ADRA

Those measured had the following height for age profiles

* 31 7% (20 6 45 1) below the -2 Z-Score
* 40 0% (27 8, 53 5) below the 5th percentile
* 36 7% (24 9, 50 2) below the 3rd percentile

No recent statistics on the incidence of stunting amongst children between 2 and 5 years in Zambezia Province could be found A multiple indicator cluster survey done by The Government and UNICEF (July/August 1995) found 53% of 127 children younger than 5 years to be below the 3rd percentile In the country as a whole 31% of the children under five had a heights for age below the 3rd percentile

Even though ADRA tried to provide some information on stunting during the baseline survey the low compliance rates and large number of invalid cases demonstrate that it is difficult to measure the indicator without the educational support provided by a growth monitoring programme Communities in Maganja da Costa received comparatively little assistance in primary health care from NGO s and the Government during the past decade and awareness levels of the importance of growth monitoring are very low

5 CASHEW PRODUCTION

5 1 General

During the past twenty years there has been a general decline in cashew production in Mozambique Factors that had an influence on the decline are

* Old age of the trees
* Increased effect of pests and diseases
* Neglect and uncontrolled bush fires

The present state of the cashew population in the district is summarized in Table 7 It shows that the Maganja da Costa Administrative Post, has the most households who reported that they do not have cashew trees Most owners (50-60%) of productive trees own five or less The exception is Bajone where there was the highest percentage of households (59%) with productive cashew trees and where the productive cashew population is relatively evenly distributed in terms of number of trees per household A possible explanation for this is the proximity of the district to Pebane which consistently had the highest or second highest production of cashew in Zambezia province during the past seven years (Serviços Provincias do Caju da Zambezia, 1996) During the 1995/1996 season the commercialization of cashew in Pebane was 3 5 times higher than that of Maganja da Costa Even though farmers in Bajone appear to have the most cashew trees, investment in new trees was significantly higher in Mocubela Approximately a third of households reported that they have young cashew trees 70% of households in Bajone and Baixo Licungo said that they have unproductive trees This however does not reflect the whole picture For example in Bajone the situation is balanced by a relative high percentage of households who have productive trees

Table 7 Cashew production

VARIABLE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
% of households with no cashew trees	29	25	45	17	31
% of households with productive cashew trees	48	59	10	33	34
Number of productive cashew trees per family					
% with 1-5 trees	60	33	56	50	48
% with 6-10 trees	15	21	33	15	19
% with 11-20 trees	12	24	6	32	19
% with more than 20 trees	13	22	6	3	14
% of households with unproductive cashew trees	57	70	43	73	42
% of households with young trees					
Number of young cashew trees per family	32	20	13	19	31
% with 1-5 trees	52	43	67	80	59
% with 6-10 trees	26	38	21	15	25
% with 11-20 trees	12	10	4	5	8
% with more than 20 trees	12	10	8	0	7
Cashew cultivation practices of those with productive trees					
% who weed underneath their trees	92	82	72	77	84
% who prune their trees	75	67	72	56	69
Cashew cultivation Practices of those with unproductive trees					
% who weed underneath their trees	81	78	50	61	67
% who prune their trees	62	64	39	47	53
Cashew cultivation Practices of those with young trees					
% who weed underneath their trees	95	91	96	70	90
% who prune their trees	74	71	75	40	67

5 2 Use of cashew

5 2 1 General

Most observers in Maganja da Costa agree that there are considerable seasonal variations in the production of cashe in the province The most recent season was considered to be below average (also see section 5 2 3)

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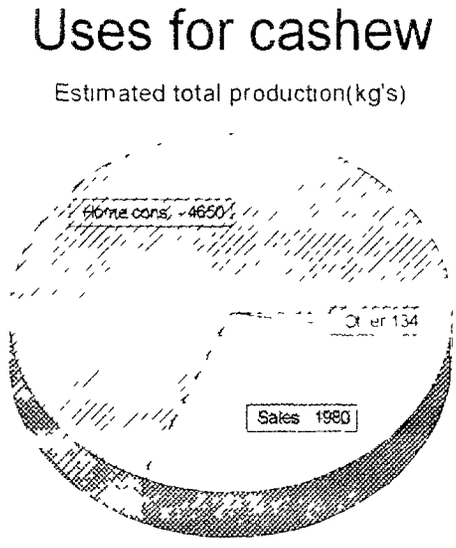
Only a quarter of households (24%) who have productive cashew trees reported selling some during the 1996/1997 season 64% said that they used all their produce for home consumption whilst 13% said that they lost their crop/harvest completely

Graph 4 Proportion of cashew used for home consumption, sales and other uses



Unfortunately it is not known why cashew production was lower this season However one may assume that flooding/heavy rains during the harvest season may have had something to do with this as most of the people who reported losing their crop lived in Baixa Licungo and Maganja da Costa The graph above shows the estimated proportions of total yield[3] that was used for home consumption sales and other uses (may include bartering gifts etc) Approximately 70% of the total 1996/1997 crop produced by the sample population was used for consumption and close to a third for sales/other activities

5 2 2 Commercialization and food security

The low proportion of households with productive cashews who commercialized their produce and the nearly non-existence of commercial sales in Maganja da Costa and Baixa Licungo are a reflection of the lower production figures reported by key observers in the district (see section 5 2 3 below) It also illustrates the close link between food security and the sale of cashews The cashew harvesting season starts in October/November and continues until January/February These months are traditionally regarded as part of the hunger season One would expect that the need for home consumption will be greater during those times if the preceding agricultural season was poor In the case of Baixa Licungo and large parts of Maganja da Costa the 1995/1996 food production season was also affected by flooding Food production and particularly the rice crop was severely affected in low lying areas As can be seen from the graph on the next page the periods when households normally suffer from food shortages coincide well with the cashew

[3] The total yield was calculated using a yield estimate of 2 5 kg per productive tree and 0 5 kg's per unproductive tree It was also assumed that immature trees produced nothing These estimates are based on data provided by the national institute of [illegible]

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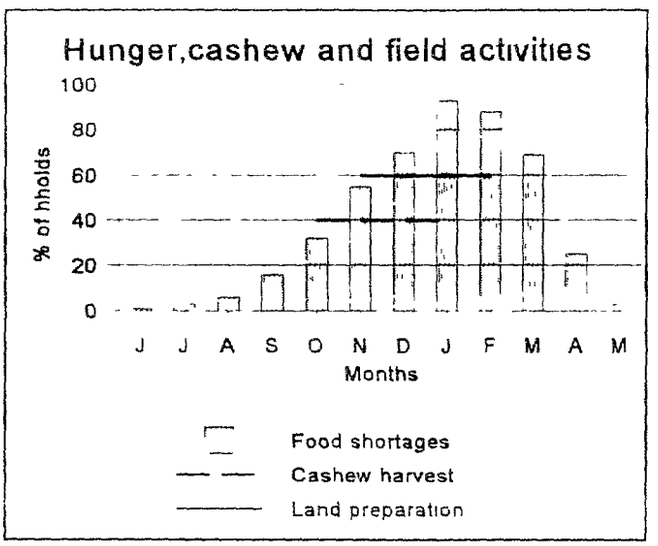
season and the period when land preparation is done for most food crops These times are usually characterized by high activity levels and energy consumption It is likely that the low levels of reported commercialization may have as much to do with household food security than with climatic and other external factors

Graph 5.The relationship between cashew harvest, field activities and the hunger period



5.2.3 Commercialization

The degree of commercialization of cashew in the district by ARPEL[4] gives an indication of the seasonal fluctuations in production that was experienced during the past five years (Graph 6) The main reasons why the ARPEL data gives a good reflection of commercialisation in the district are that the district has no major thoroughfares to other parts of the province and the general condition of the roads is very poor There are therefore relatively few traveling merchants who buy agricultural produce in the district According to the ARPEL representatives there are various factors that contribute to these differences Rains at the wrong time and uncontrolled burning of fields appear to play the most important role The exceptionally low figures for 93/94 reflect an extremely poor harvest, but also the general changes that occurred during that year (elections were held in 1994) An unusually large number of people traveled through the district in preparation for the elections There is no doubt that large scale buying by people other than ARPEL (UNIMOZ soldiers/UN officials) took place and reduced the monopoly of the organization on large scale commercialization The low percentages of households (25%) who said that they sold some of their crop during the 1996/1997 season contrasts sharply with the findings of the 1996 survey that dealt with the previous season According to the 1996 survey more than 80% of households reported selling some cashews (Community Assessment 1996) These differences should be seen within the context of the flooding that took place during the 1995/1996 crop season and the general deterioration of food security As a result of food shortages, households probably chose to consume rather than sell their cashews ARPEL also

[4] ARPEL is the only buyer of cashew in the district that buys cashew on a large scale The organization had a monopoly on cashew buying until recently when the market was liberized However to date no other companies who buy on large scale has started operations in the district

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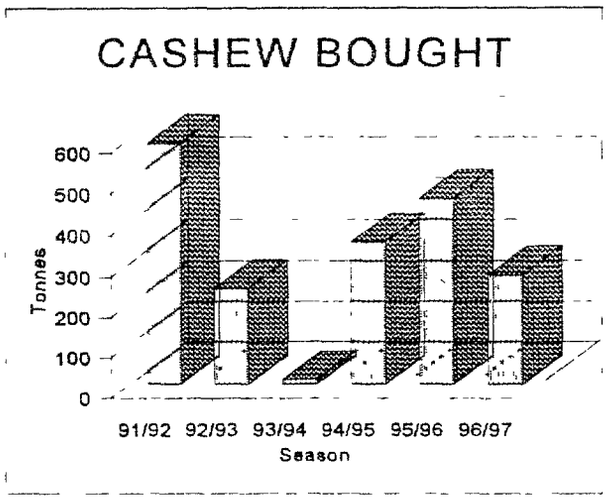
reported being able to buy only 60% of the quantities bought during the 1996 season

Graph 6: Cashew bought by ARPEL



5 2 4 Small scale commercialization of cashew

Only 25% of households with productive cashew trees sold cashew during the past year The total number of kilograms sold by the sampled households was 2 132 kg The income from cashew sales varied between 5000 meticais and 700000 per annum with a mean of 179 447 meticias per household per year Mean prices per kilogram obtained were 3 263 meticais per kilogram with a range of 500 to 5000 meticais per kilogram Mean estimated yields per tree (considering productive and unproductive trees) were 3 69 kg/tree

Table 8 Small scale marketing of cashew

Variable	Value
Percentage of households with productive cashew trees who reported selling during the 1996/1997 season	25
Total kg s sold by surveyed households	2132
Mean income in meticais per annum (range)	179 447 (5000-70000 mt)
Mean price in meticais per kilogram (range)	3 262 (500-5000 mt/kg)
Mean yield kg/tree considering productive and 'unproductive'[5] trees	3 69 kg/tree

The sellers of cashew mainly sold their produce to traveling merchant with car (45%) shop/market/local people (29%) and traveling merchant without car (18%)

[5] Farmers were asked to list the number of productive and unproductive trees Unproductive however does not signify [illegible] but in most cases very low production

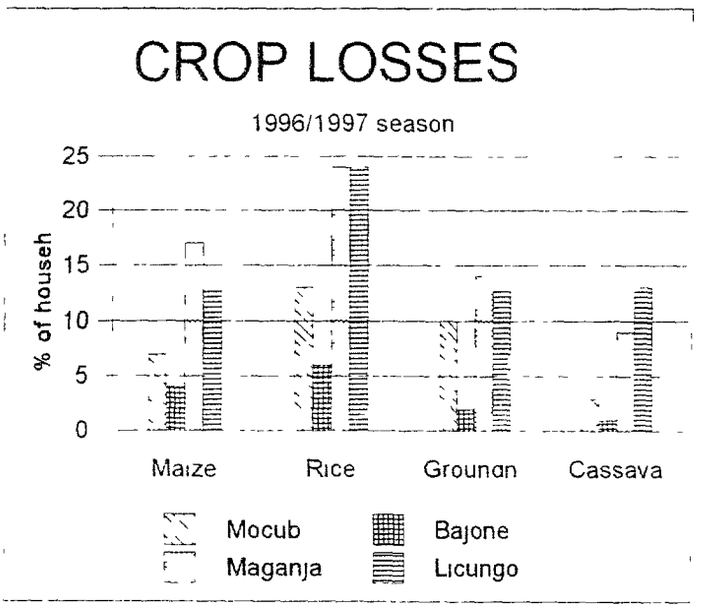
6 CROP AND VEGETABLE PRODUCTION

6.1 Introduction

Production conditions vary considerably in the four Administrative Posts (AP's) In Mocubela the climate and soil support a wide range of crops and fruit trees whilst coconut palms and rice are the most important crops in Licungo and the coastal parts of Bajone

During the 1995/1996 season flooding caused some damage in low lying areas especially in Licungo In the biggest part of the district the harvest ranged from below normal to normal The harvests of 1996/1997 were even poorer than the previous year In the beginning of the present season unusual flooding during January and February damaged a lot of crops Severe flood damage was recorded in the lower lying areas of Licungo Much poorer than normal harvests were observed in Maganja da Costa and Licungo (ADRA staff 1997 DDA 1997) and to a lesser extent Bajone and Mocubela Problems with crop damage due to elephant and hippopotamus were also experienced

Graph 7· Percentage of households reporting complete crop losses



The graph above shows that complete crop losses were consistently more common in Maganja and Licungo The most significant differences in crop losses were recorded for rice and maize Close to 25% of households in Licungo and Maganja reported total losses of their rice crops and around 15% lost all their maize

6 2 General production

The average household cultivate two plots per season and plant between four and five different kinds of crops per season Traditional agricultural practices are predominant in the district Less than 5 % of households used chemical fertilizer improved seeds insecticide and/or herbicide during the past year This is partly due to the fact that this district was very isolated during and after the war and the distribution of improved seeds and other types of emergency support only took place to a limited extent The absence of commercial agricultural enterprises supporting the production of cash crops such as cotton further influences the use of these kinds of inputs

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The most widely cultivated crop providing harvests throughout most of the year is cassava More than 99% of households in all AP s cultivate it Other important crops are groundnut sweet potato, rice and maize As already said most households planted between 4 and 5 different crops per season Households in Mocubela planted a significantly greater variety of crops than households in the other three AP's This is also the only part of the district where more than three quarters of households planted maize

The most important crops planted in the four Administrative Posts since September October 1996 are (also see Table A12 in Appendix A)

Mocubela: Cassava (99%) groundnut (87%) maize (81%) beans (76%) rice (71%) sweetpotatoes (71%)

Bajone: Cassava (100%) rice (73%), groundnut (69%) beans (67%), sweetpotatoes (65%), maize (35%)

Maganja Cassava (100%) rice (68%) groundnut (67%) sweetpotatoes (65%) maize (56%), beans (54%)

Licungo: Cassava (98%) rice (87%) sweetpotatoes (68%) groundnut (57%) maize (45%) beans (43%)

The only vegetable cultivated by significant percentages of households is tomato - approximately 13% of households in Mocubela and Bajone planted it

Households generally have very few production instruments The only instruments owned by significant percentages of households are hoes (98%) machetes (68%) and axe (47%) At a glance there appears to be no shortages of production instruments However, when one looks at comparative data with other provinces the picture looks a bit different For example the mean number of hoes owned per family is 2 1 (SD=1 1) and in Manica the mean number of hoes per household is 4 8 (SD=4 3) (Africare 1997) Very little is also known about the condition of these instruments

6 3 Commercialization of crops

The 1996/1997 season was not a good season for commercialization Baixa Licungo and large parts of Mocubela suffered crop losses as a result of floods and several people reported losing their entire crops of particularly rice and maize This resulted in extremely low levels of commercialization In Mocubela and Bajone maize cassava and groundnut were the most important commercial crops Sweet potato and rice were also sold by significant percentages of households in Bajone

Crops sold by more than 5% of households were

Mocubela: Groundnut (25%), maize (21%), cassava (16%)
Bajone: Groundnut (20%) rice (13%), cassava (12%) maize (11%)
Maganja da Costa: Cassava (9%)
Licungo Cassava (7%) rice (6%)

7 FRUITTREE CULTIVATION

In an effort to improve nutritional status and general food security ADRA will be looking at the possibility of promoting the planting of fruit trees Specific trees that are considered are citrus, mango, papaya and banana trees Of these, mango and papaya trees are the most predominant in all AP s except Bajone In the latter bananas play an important role

Table 9 Cultivation and sale of fruit crops

TYPE OF FRUITTREE	ADMINISTRATIVE POST									
	Mocubela		Bajone		Maganja da Costa		Baixa Licungo		TOTAL	
	Cult	Sold	Cult	Sold	Cult	Sold	Cult	Sold	Cult	Sold
% of households who cultivated/sold the following fruit during the past season										
Pineapple	19	1	19	4	29	1	45	1	28	2
Citrus	28	5	11	1	33	2	28	1	26	2
Mangos	66	2	75	4	54	0	70	0	65	0
Papayas	41	1	26	1	57	1	69	0	49	0
Bananas	39	14	54	24	39	4	42	2	42	11

In Licungo and Maganja insignificant numbers of households sell fruit The most important commercial fruit crop in Bajone and Mocubela is bananas - it was sold by 24% in Bajone and 14% in Mocubela

Approximately 44% of households in Bajone Mocubela and Licungo plant other crops between their fruit trees The practice is the least common in Maganja da Costa where only 30% of households reported using it More than 80% of households in Mocubela Maganja and Licungo intercrop fruit trees with cassava Other crops used by significant percentages of households for intercropping are maize sweetpotatoes and beans (also see Table A14 in Appendix A) Less than 15% of households in Maganja and Licungo plant crops (other than cassava), between their fruit trees The only other crops planted by significant percentages of people were sweetpotatoes (24%) in Mocubela and sweetpotatoes (27%) and beans (29%) in Bajone

8 ACCESS TO MARKETS

Maganja da Costa only has 32 merchants who serve four administrative posts, 14 localities and approximately 200 villages Generally the marketing infrastructure in the surveyed villages is very poor Only two of the 9 villages selected in Bajone and Mocubela had markets/shops selling food and other produce (also see Appendix B) The Maganja villages had none and Baixa Licungo only one Access to transport is limited and no villages received regular visits by traveling merchants At present Mocubela and Bajone are far more influenced by the markets in Pebane than their own district capital The reason for this is that the condition of the road to Pebane is far better than the one to Maganja da Costa

The principal buyers of cashew (mainly in Bajone and Mocubela) were

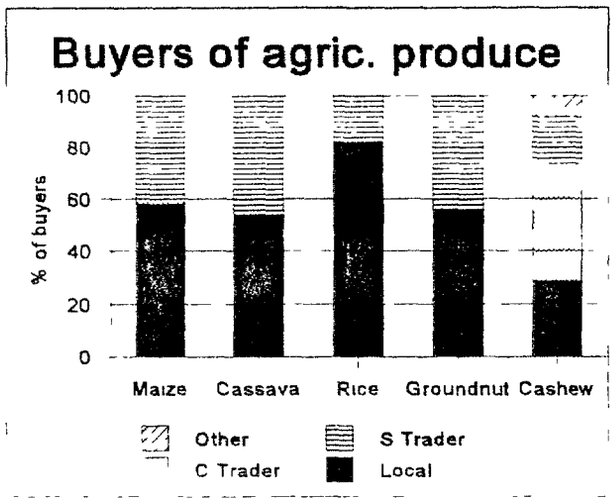
* Traveling merchant with car 45%
* Shop/market/local people 29%
* Traveling merchant without car 18%
* Other 3%

Table 10 Marketing infrastructure

VARIABLE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Barra Licungo	TOTAL
Number of villages surveyed	5	4	7	4	20
Number of villages with market stalls/shops selling food with permanent structures	0	2	0	1	3
Number of villages market stalls/shops selling clothes and other goods with permanent structures	0	1	0	1	2
Number of villages with shops buying agricultural produce	0	1	0	0	1
Number of villages with shops selling agricultural inputs	0	0	0	0	0
Frequency with which traveling merchants visit area					
* Never	1	0	0	0	1
* Sometimes	4	4	7	4	19
* Regularly	0	0	0	0	0
Residents are able to find transport within a 5km radius					
* Various times per day	3	0	1	0	4
* Various times per week	1	0	1	2	4
* Sometime	0	3	2	0	5
* Never	1	1	1	2	5

The most important crops that were commercialized during the past season were maize cassava rice groundnut, sweet potato and beans Unlike cashew most of the above crops were sold at the local shop/market/to local people or to passing small scale traders without their own transport Only a small portion of those who sold sweet potato in Mocubela sold the sweet potato to a trader with a car The graph below shows the distribution of the main buyers of the most important commercial crops (also see Table A10 in Appendix A)

Graph 8. Buyers of the most important commercial crops[6]



9 STORAGE OF AGRICULTURAL PRODUCE

Forty four percent of the households included in the survey said that they stored agricultural produce during the past season The highest percentage of storers were recorded in Mocubela (73%) and Bajone (46%) The storage rates in Maganja and Licungo were much lower at 31% and 28% respectively

Maize 36% of those who planted maize stored it
Storage losses 34% (SD 19)

Cassava: 29% of the cassava planters stored it
Storage losses 35% (SD 19)

Beans 39% of those who planted beans also stored some of it
Storage losses 33% (SD 20)

Rice. 34% of the rice planters stored some
Storage losses 32% (SD 17)

Groundnut·43% of those who planted groundnut, stored it
Storage losses 31% (SD 18)

10 LIVESTOCK KEEPING

The only livestock kept by significant numbers of households are chickens and ducks The table below illustrates the differences in livestock ownership patterns in the four administrative posts

[6] C Trader Trader with a vehicle (commercial) S Trader Trader without a vehicle (small) Local [illegible] Local people

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TABLE 11 Types of livestock owned

LIVESTOCK OWNED	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
% who own chickens	82	64	78	92	79
% who own pigs	4	0	7	1	3
% who own rabbits	0	0	0	0	0
% who own goats	8	1	3	8	5
% who own cattle	0	0	0	0	0
% who own donkeys	0	0	1	0	0
% who own ducks	21	12	16	17	17
% who own guinea pigs	2	0	0	0	1

Chickens are the most important livestock kept in the district The lowest ownership rates were reported in Bajone (64%) and the highest in Baixa Licungo (92%) Between 12 and 21% of households reported owning ducks

11 BASELINE IMPACT INDICATORS

The findings of the survey made it necessary to review the indicator logframe in more detail The proposed changes are contained in Appendix F The table on the next page summarises the indicators that will be measured through the household survey The targets set have to be achieved by the year 2001 and refer to percentage increases decreases above/below the baseline value unless otherwise specified At mid-term and final evaluation phases these baseline values will be compared to a group of 320 participating and 200 non-participating households (with cashew trees) The seperation of the baseline data into participants and non-participants in the introduction of this report was done in order to identify the validity of the control group methodology and to get an idea about the most appropriate control group to use However, since selection is not complete in all villages and no programme activities has been started all the households are combined for the baseline measurements

The baseline values for most indicators are low and even slight improvements are likely to contribute to increased development activities in these communities The target for increases in household possessions have been set low because major benefits to household income is only expected after five years, when the young cashew trees start to mature Appendix F contains more details about the reasons why these indicators and targets were chosen

Table 12: Baseline values for impact indicators measured with the household survey

OBJECTIVE	Indicator	Baseline value June 1997
Sustainable increase in participating household's income	*MSU proxy indicator approach to household income * 10% increase in the percentage of households with household goods with a total value of more than 500,000 mt	Still to be determined 25%
GOALS		
1 Sustainable increase in household Food Access and availabilities	* Increase in the mean number of different crops grown per household to > 5 crops	4.5 (SD=1.8)
2 Improved year round food availability and accessibility	* Decrease in the mean number of months when households report food shortages to 3 months	4.6
3 Enhancement of agricultural production through improved market access	* 13% increase in the percentage of farmers who marketed food crops * 16% increase in the percentage of households who sold more than one different kind of food crop	27% 14%
OUTPUTS		
1 Sustainable increase in household food access and availability		
1.1 Reforestation and rehabilitation of cashew plantations	* 26% increase in households with productive cashew trees selling cashew * 6400 small holders involved in reforestation of cashew*	24% 0
1.2 Intercropping between fruittrees	* 25% increase in percentage of farmers who planted crops between fruittrees * 15% increase in percentage of farmers who intercropped between young cashew trees with at least one of the following groundnut, pineapple, beans, sweetpotatoes or maize	40% 15%
1.3 Cultivation of vegetables and fruit trees	* 21% increase in the percentage of farmers who planted at least one vegetable crop * 18% increase in the percentage of farmers who have pineapple, banana and papaya trees	9% 12%
2 Improved year round food availability and accessibility		
2.1 Promotion of the use of improved storage techniques	* 16% increase in the percentage of farmers who stored agricultural produce	44%
2.2 Promotion of varieties and food crops that provide food during the hunger period	* % increase in the percentage of farmers who planted promoted crops/varieties	still to be defined
3 Enhancement of agricultural production through improved market access		
3.1 Rehabilitation of market infrastructure	* 13% increase in the percentage of farmers [illegible]	27%
3.2 Road rehabilitation	* % increase in the percentage of farmers who sold produce to non-local buyers	12%

* This value is set for the baseline as no real activities started before the baseline survey was conducted

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12 CONCLUSIONS AND RECOMMENDATIONS

12.1 Impact assessment and survey methodology

Even though the baseline survey was carried out successfully with only some minor problems, certain adjustments are needed for future surveys Some minor changes will have to be made to the questionnaire (see Appendix E) and the impact assessment and sampling methodology [illegible] most important reason for changes to the latter is the fact that participating and non-participating households were not similar at baseline

Those who have chosen to participate in the project generally

* Are more interested in cashew production (more of them have productive trees and more have planted young trees)
* They appear to have slightly better socio economic conditions as demonstrated by the larger numbers whose household possessions were valued at between 250000 and 500000 meticais
* Significantly more of them reported selling agricultural produce during the past season - a possible indication (within the context of a year of below average harvests) that they were able to produce more than most other households in their communities

These findings indicate that households who thus far showed an interest in partipicating in the programme are not the poorest of the poor They tend to be households who show an interest in cashew production (have young trees) and are slightly better off (in the medium range) in terms of the household possessions that they currently own Since this programme is aimed at sustainable development and not welfare the fact that those interested in cashew production is not the poorest of the poor may not be that important What is perhaps more important at this stage is to develop a core of motivated entrepreneurs and job creators who can drive the economic development of their communities and the region Such a process is more likely to be sustainable if programme participants are truly interested in the project and cashew production

Further investigations showed that if participating households are compared to non-participating households with cashew trees their profiles have the least statistically significant differences Based on these findings it is recommended that the basic assessment methods (combination between reflexive and comparison group design) be kept, but that impact assessment be limited to a comparison between participants and non-participants with cashew trees Instead of random sampling within a village, a random sample of 16 households from participating households and 10 non-participating households with productive cashew trees will be selected from each village for the mid-term and final surveys This will result in a total sample size of 320 households for participating households and 200 non-participating households Changes will not only be measured across groups (comparison design), but also over time within each group (reflexive design)

12 2 Small enterprise development

Even though the programme does not yet include a small business development component, there are plans to include it in the future The findings suggest that households are engaging in a variety of different economic activities in addition to their agricultural production activities [illegible] there are some indications that households in Moc Belavo Bazar are slightly better off economically than their counterparts in Maganja da Costa and Licungo (more households with high value household possessions)

These two areas also have

* Significantly more households who receive remittances
* More households who reported incomes from the sale of agricultural produce
* A greater variety of different off-farm income generating activities
* More households who reported earning money from odd-jobs (Mocubela) and permanent employment (Bajone)

These differences may be related to the proximity of large commercial farms the fish industry in Pebane and relatively good road access to markets There are some indications that these two areas presently have slightly more buying power and more entrepreneurs than the remainder of the district and that efforts to improve marketing and commercial activities will have a greater chance to succeed here (particularly in Bajone) than elsewhere It may be possible to start with small enterprise development pilot programmes in these two areas during the next financial year In Maganja and Licungo other changes will be needed before it will be possible for sustainable small enterprise development to take place This may take two to three years to accomplish

12 2 Food consumption and nutrition

The programme is aimed at improving food access and food availability for participating households Initially the programme would have included a basic health and nutrition education component, but this was changed during the first programme review in May 1997 The main vehicle for changing food intakes will be increased production of a greater variety of high quality crops

Generally the variety of crops available during this time of year have the potential to supply in all the basic nutrient requirements of the inhabitants of the district The major nutritional problems related to quantities of food available and to some extent the optimal use of available resources In some areas such as Maganja da Costa and Licungo, encouraging the production of beans and groundnut as a crop to be intercropped with young cashew trees will make a significant contribution to protein intakes At present these two areas have the lowest frequency of protein intake of all the surveyed areas Since groundnut is also a cash crop increased market demand for groundnut may also enable households to earn some money to buy other types of protein such as fish Even though the vast majority of households consume carbohydrate rich foods at least once a day around 20% did not eat it that often If the nutrition component is again included in the programme the programme should aim to increase the percentage of households that eat carbohydrate rich foods at least twice a day Increased rice, maize and sweetpotato production with improved varieties will contribute towards household food supplies of the basic staple foods

Fruit and vegetable consumption was generally poor 78% of households did not eat any fruit in the week preceding the survey Vegetable consumption was slightly better but 72% of households reported not eating vegetables or eating it less frequently than once a day The consumption of leaves was particularly worrying Even with the abundance of cassava leaves, only 36% of households in Bajone and 49% of households in Licungo said that the women and children consumed leaves in the week preceding the survey This is an example of where supply exist, but a lack of education (perhaps on the preparation of cassava leaves) influence nutrient intakes Even though the nutrition component of the programme has been temporarily suspended, serious consideration should be given to obtaining additional funding to start with nutrition education campaigns in the [illegible] marginal areas General [illegible] will benefit from the promotion of the planting of improved varieties of papaya, banana, citrus and mango trees Papaya and banana are particularly attractive as it can supply a crop throughout the year (also during the periods of food shortages)

The potential strides that can be made in dietary intakes with agricultural production and nutrition education are substantial However, its effect, particularly amongst children under five, will be greatly diminished by the present high incidence of diarrhoea and the lack of knowledge amongst mothers about the proper feeding habits during this illness 61% of the surveyed households had at least one child with a case of diarrhoea during the two weeks preceding the survey The highest incidence was reported in Mocubela and Bajone where food production was higher than in other areas The gains in food production/food supplies in terms of health and nutrition will be greatly reduced because of the high incidence of diarrhoea It is therefore recommended that the possible future nutrition component of the programme also include basic concepts related to the prevention and management of diarrhoea

12 3 Food security, food production and commercialization

Most households experience food shortages during 4-5 months of the year Food shortages coincide with the cashew harvest season and the time when land preparation is done for most other crops Ironically the time when most energy is spent, access to food is also at its lowest The findings suggest that this has some implications for the commercialization of cashew If the cashew harvest is preceded by a below normal harvest of subsistence crops, households are more likely to consume cashew to augment their food supply than they are to sell it (particularly in the absence of good marketing structures and prices) Priority should be given to identify crops and farming methods that will increase food supply from November to February

The most important crops cultivated during the past season were cassava rice groundnuts, sweet potatoes and beans Households in Mocubela and Licungo planted the greatest variety of different kinds of crops and were able to market some of their excess produce Even during the previous season, the duration of their hunger period was slightly shorter than that of other parts of the district Considering that the aim is to increase food production through intercropping with cashew the options for improving crop production is limited to crops that will intercrop well with fruit trees and those that will make a significant contribution towards household nutrition and food security

Presently around 40% of the households practise intercropping with fruit trees The most frequently used crop is cassava However sweet potatoes and beans are also planted by about a quarter of the intercroppers in Mocubela and Bajone Since protein intakes are lower than desirable and cassava is already cropped by such large percentages of households, it may be advisable to focus on promoting sweetpotato, beans groundnuts and maize for intercropping with cassava These crops will make a bigger contribution to food security and nutritional status and all of them, particularly groundnut have substantial commercial potential

12 4 Cashew rehabilitation and reforestation

Surprisingly low numbers of households reported owning productive cashew trees Maganja da Costa has the lowest ownership rates of cashew trees - 45% of households said that they have no trees Bajone (59%) and Mocubela (48%) had the most households with productive trees and Mocubela appears to have the most farmers interested in renewing their cashew plantations, with 32% of households reporting having young cashew trees

The yields of the past season was particularly poor This is reflected in the commercial sales of cashew which was only 60% of the total for the 1995/1996 season There is also evidence to suggest that households compensated for the poor food harvests of the previous season, by consuming more cashews than they sold Only 25% of households with productive cashew trees

reported selling any of their produce during the past season Most of those who sold live in Mocubela and Bajone Mean income from sales were 179 447 meticais whilst the mean yield per tree was approximately 3 69 kg's Merchants traveling with their own vehicles were the majority of buyers, whilst local marketing and sales to merchants without their own transport played a lesser role The biggest constraint to marketing is a lack of buyers

The present low levels of cashew production and commercialization in the Maganja da Costa administrative post possibly indicates the need for development assistance with the production of cashew However, the present lack of initiave in establishing new young cashew trees in comparison with neighbouring Administrative Posts may signify that households are not that motivated to change their own situation (which by all indications is not the best in the district) Efforts to establish sustainable programmes in this part of the district may be met by apathy and a lack of interest in active participation In contrast to this the potential for growth and development of the industry in Mocubela and Bajone is much greater than elsewhere The chances of development investment translating into substantial and long-term benefits for those communities and the district as a whole also appears to be bigger

13 LIST OF REFERENCES

a) ADRA staff 1997 Discussion with the four ADRA supervisors Maganja da Costa, July August 1997

b) AFRICARE 1997 Agricultural Baseline Survey September 1997 Chimoio Africare

c) ARPEL 1997 Discussion with Mr Rashid and Oliveira the representatives of ARPEL in Quelimane and Maganja da Costa respectively

d) DDA 1997 Discussion with the District Director of Agriculture Maganja da Costa

e) DPS 1997 Statistics supplied by the Provincial Directorate of health of Zambezia Province July 1997

f) Community Assessment 1996 General socio-economic survey conducted by ADRA in Maganja da Costa January 1996 Maputo ADRA

g) GOM/UNICEF 1995 Multiple Indicator Cluster Survey Mozambique 1995 Ministry of Planning and Finance, Department of Statistics (DNE) and Section of Planning, Monitoring and Evaluation (PME)

h) Serviços Provincias do Caju da Zambezia, 1996 As quoted in the Appendix of the ADRA project proposal

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APPENDIX A

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TABLE A1. Comparison of the key characteristics of participating and non-participating households

Variable	% of Participating households	% of Non-participating households	% of Non-partici-pating households with cashew trees	% of Non-participating households with productive cashew trees
Number of months/year when food shortages are experienced.				
Less than 4	32	27	29	32
4-5 months	50	48	47	49
More than 5 months	18	26	24	19
% who have productive cashew trees	44	31	46	100
% who have young cashew trees	30	17	26	30
Sources of income during past year				
% sold food crops	54	37	40	48
% sold cashew during past year	11	10	13	28
% who had temporary income	43	35	31	29
% with non-agric Self-employment	13	14	13	16
% who sold natural resources	17	16	17	25

TABLE A2: General household characteristics

VARIABLE	ADMINISTRATIVEPOST				
	Mocubela	Bajone	Maganja da costa	Baixa Licungo	TOTAL
Main respondent					
Male household head	62	79	65	66	67
Female household head	16	9	18	22	17
Wife of the househ head	20	9	15	10	14
Other female adult	2	1	0	1	1
Other male adult	1	1	1	1	1
Secondary respondent					
Male household head	0	0	4	39	4
Female household head	2	2	29	31	9
Wife of the househ head	49	54	64	31	52
Other female adult	9	4	0	0	5
Other male adult	32	35	0	0	25
Child	9	6	4	0	6
% of households who are participating in the programme[1]	36	25	20	15	25
Mean number of houses per household	1 2(0 4)	1 3 9(0 5)	1 1(0 3)	1 2(0 4)	1 2(0 4)
Roof construction					
Grass	100	98	91	95	96
Corrugated iron	0	0	1	0	0
Other	0	2	8	5	4
Construction material of the main house					
Clay and sticks	86	67	69	90	77
Clay bricks (unbaked)	14	32	31	10	23
Cement or burnt bricks	0	0	1	0	0
Other	0	2	0	0	0
% of households with wooden doors	43	31	62	43	47

[1] The actual implementation of the programme only started two months before the baseline survey Within this context [illegible] means that farmer selection has taken place Very little other activities were done with the farmers before the [illegible]

TABLE A3 Income sources during the past year

INCOME SOURCE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
Sale of food crops	56	47	34	29	42
Sale of caju	15	25	0	9	11
Sale of other cash crops	4	8	0	0	3
Sale of animals	23	7	7	8	11
Sale of home made food	9	6	3	2	5
Sale of traditional liquor	27	9	53	38	35
Non-agricultural self-employment	16	25	9	8	14
Buying and selling of clothes food cigarrettes etc	19	17	7	9	12
Sale of water and wood [illegible] fish honey etc	21	23	6	21	16
Sale of donated goods	1	0	0	1	1
Regular salary	6	14	3	5	6
Temporary income	51	25	36	28	36
Social security/pension etc	3	3	2	1	2
Other	7	7	7	7	7

TABLE A4 Household expenditure

EXPENDITURES	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
Food	87	94	92	91	91
Meat	55	19	34	29	35
Drinks	31	9	51	43	36
New clothes	26	14	21	16	20
Second hand clothes, capulanas & personal articles	93	87	90	81	88
Health	89	90	85	87	87
Education	47	29	51	40	44
House(household goods etc.)	16	26	24	25	23
Farm operations home industry	2[illegible]	44	17	23	27
Payment of debts	70	71	71	75	72
Transport	62	63	64	68	64
Feasts/ceremonies	75	91	82	78	81
Other (specify)	20	19	7	15	14

TABLE A5 Incidence and treatment of diarrhoea

VARIABLE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
% of surveyed households with health posts within a 10km radius	20	25	43	75	40
% of households with children under five	54	50	49	39	48
% of households with children under five with one case or more diarrhoea during the past two weeks	70	67	53	55	61
% of households with at least one case of diarrhoea amongst adults during the past two weeks	39	26	9	9	20
Feeding practices during the most recent cases of diarrhoea amongst children under five[2]					
Breast milk					
1 None	11	9	5	0	8
2 Less than normal	43	49	47	56	47
3 The same	34	27	26	38	31
4 More than normal	11	15	21	6	15
Liquids					
1 None	0	3	0	0	1
2 Less than normal	27	36	26	45	31
3 The same	35	28	45	25	35
4 More than normal	39	33	30	30	34
Food					
1 None	30	25	11	15	21
2 Less than normal	25	42	36	55	37
3 The same	11	28	43	30	36
4 More than normal	15	6	9	0	6

[2] The responses only apply to households where there were cases of diarrhoea amongst children under five during the past two weeks. Children who have been weaned were excluded from the analysis of practices on breastfeeding and likewise [illegible] children still too small to be weaned were excluded from the [illegible] on [illegible] habits.

TABLE A6. Household food shortages and consumption

MONTH	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
Months with food supply shortages					
January	96	87	95	92	93
February	88	69	96	91	88
March	53	37	91	86	69
April	7	5	50	28	25
May	1	2	4	6	3
June	1	2	1	0	1
July	2	3	7	1	3
August	2	7	9	1	6
September	7	25	19	15	16
October	18	52	28	37	32
November	56	82	38	55	55
December	81	89	54	65	70

TABLE A7 Kinds of foods eaten during the week preceding the survey

FOODS EATEN	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
% of households of which the women and children ate the following foods during the week preceding the survey.					
Maize	29	19	18	14	20
Cassava	98	97	97	93	96
Sweetpotato/Macuti	47	45	36	35	41
Sorghum/millet	2	4	0	0	1
Bread	1	1	1	0	1
Rice	44	42	39	73	53
Leaves	76	36	65	49	58
Tomatoes onions and other vegetables	17	9	4	9	9
Banana papaya and other fruits	22	31	17	23	22
Beans	61	56	31	28	43
Groundnuts/caju	83	70	45	42	57
Fish (dry/fresh/tin)	40	93	52	78	62
Birds (ducks/chicken)	6	6	7	5	6
Meat/venison	3	2	1	3	2
Sugar/sugar cane	46	42	46	48	55
Oil fats	0	2	3	0	1
Coconut	38	84	36	61	55
Salt	98	99	99	100	99

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TABLE A8: **Cashew production**

VARIABLE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
% of households with no cashew trees	29	25	45	17	31
% of households with productive cashew trees	48	59	10	33	34
Number of productive cashew trees per family					
1-5	60	33	56	50	48
6-10	15	21	33	15	19
11-20	12	24	6	32	19
20+	13	22	6	3	14
% of households with unproductive cashew trees	57	70	43	73	42
% of households with young trees	32	20	13	19	31
Number of young cashew trees per family					
1-5	52	43	67	80	59
6-10	26	38	21	15	25
11-20	12	10	4	5	8
20+	12	10	8	0	7
Cashew cultivation practices of those with productive trees					
% who weed underneath their trees	92	82	72	77	84
% who prune their trees	75	67	72	56	69
Cashew cultivation Practices of those with unproductive trees					
% who weed underneath their trees	81	78	50	61	67
% who prune their trees	62	64	39	47	53
Cashew cultivation Practices of those with young trees					
% who weed underneath their trees	95	91	96	70	90
% who prune their trees	74	71	75	40	67
% of farmers who plant crops between fruittrees	44	44	30	45	39
Most important types of crops planted by those who intercropped					
% who planted cassava	85	65	96	94	85
% who planted maize	15	13	4	6	10
% who planted sweetpotatoes	24	27	2	13	16
% who planted beans	17	29	9	4	15

TABLE A9 Marketing Infrastructure

VARIABLE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
Number of villages surveyed	5	4	7	4	20
Number of villages with market stalls shops selling food with permanent structures	0	2	0	1	3
Number of villages market stalls/shops selling clothes and other goods with permanent structures	0	1	0	1	2
Number of villages with shops buying agricultural produce	0	1	0	0	1
Number of villages with shops selling agricultural inputs	0	0	0	0	0
Frequency with which travelling merchants visit area					
* Never	1	0	0	0	1
* Sometimes	4	4	7	4	19
* Regularly	0	0	0	0	0
Residents are able to find transport within a 5km radius:					
* Various times per day	3	0	1	0	4
* Various times per week	1	0	1	2	4
* Sometime	0	3	2	0	5
* Never	1	1	1	2	5

TABLE A10. Buyers of agricultural produce

VARIABLE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Barxa Licungo	TOTAL
Buyers of agricultural produce					
Maize					
1 Shop/market local people	48	91	43	67	58
2 Trader with car	3	0	0	0	2
3 Trader without car	48	9	57	33	40
Cassava					
1 Shop/market local people	48	85	43	40	54
2 Trader without car	52	15	57	60	46
Rice					
1 Shop/market local people	86	86	100	33	82
2 Trader without car	14	14	0	67	18
Groundnut					
1 Shop/market local people	65	60	0	33	56
2 Trader without car	35	40	100	67	44
Sweetpotato					
1 Shop/market local people	33	100	0	50	71
2 Trader with car	33	0	0	0	7
3 Trader without car	33	0	100	50	21
Beans					
1 Shop/market local people	75	100	0	0	36
2 Trader without car	25	0	100	100	64

TABLE A11 General agricultural practices

VARIABLE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Barra Lucungo	TOTAL
Mean number of plots per household (SD)	1.97(0.8)	2.0(1.1)	2.4(1.2)	2.7(1.4)	2.2(1.2)
% of households who used chemical fertilizer during the past year	0	1	0	0	0
% of households who used other inputs (improved seeds insecticide herbicide) during the past year	4	4	1	2	2
% of households who received support for cash crop production	8	3	0	0	3
Ownership of production implements					
% with hoes	98	99	98	100	98
% with machetes	75	79	68	51	69
% with axe	56	50	46	41	48
% with spade	3	4	2	2	3
% with rakes	0	2	1	1	1
% with sickles	14	2	8	15	10
% with files	4	6	1	2	3
% with plough	0	0	1	0	0

TABLE A12 Types of crops planted

VARIABLE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Baixa Licungo	TOTAL
Mean number of the listed crops planted	5.2(1.8)	4.3(1.8)	4.1(2.8)	4.2(1.8)	4.5(1.8)
% of households who planted the following crops during the past season					
Maize	81	35	56	45	56
Sorghum/Millet	10	12	3	0	6
Cassava	99	100	100	98	99
Rice	71	73	68	87	74
Groundnut	87	69	67	57	71
Sweetpotato	71	65	65	68	67
Potato	0	0	0	0	0
Beans	76	67	54	43	60
Sunflower sesame	4	0	1	0	1
Cotton	4	0	0	0	1
Tomato	14	12	2	5	8
Onions	4	3	0	1	2
Garlic	2	3	0	2	1
Cabbage/kale	1	0	0	0	1
Other	2	1	0	2	1

TABLE A13 Sale of crops

VARIABLE	ADMINISTRATIVE POST				
	Mocubela	Bajone	Maganja da Costa	Barra Licungo	[illegible]
% of households who sold crops during the past season					
Maize	21	11	5	3	10
Sorghum/Millet	0	0	0	0	0
Cassava	16	12	9	7	11
Rice	5	13	3	6	6
Groundnut	25	20	3	5	13
Sweetpotato	2	8	1	2	3
Potato	0	0	0	0	0
Beans	6	4	2	9	5
Sunflower/sesame	0	0	0	0	0
Cotton	1	0	0	0	0
Tomato	3	2	0	0	1
Onions	0	1	0	0	0
Garlic	0	1	0	0	0
Cabbage	0	1	0	0	0
Other	0	0	0	0	0

TABLE A14 Fruitcrops cultivated and sold

VARIABLE	ADMINISTRATIVE POST									
	Mocubela		Bajone		Maganja da Costa		Baixa Licungo		TOTAL	
	Cult	Sold	Cult	Sold	Cult	Sold	Cult	Sold	Cult	Sold
% of households who cultivated/sold the following fruit during the past season										
Pineapple	19	1	19	4	29	1	45	1	28	2
Citrus	28	5	11	1	33	2	28	1	26	2
Mangos	66	2	75	4	54	0	70	0	65	0
Papajas	41	1	26	1	57	1	69	0	49	0
Bananas	39	14	54	24	39	4	42	2	42	11
Intercropping with fruittrees % of households who intercropped	44		44		30		45		40	
Most important types of crops planted by those who intercropped	85		65		96		94		85	
% who planted cassava	15		13		4		6		10	
% who planted maize	24		27		2		13		16	
% who planted sweetpotatoes	17		29		9		4		15	
% who planted beans										

Table 15: Conservation and sale of seeds

VARIABLE	ADMINISTRATIVE POST									
	Mocubela		Bajone		Maganja da Costa		Buxa Licungo		TOTAL	
	% who conserved seed	% who sold or exchanged selected seeds	% who conserved seed	who sold or exchanged selected seeds	% who conserved seed	who sold or exchanged selected seeds	% who conserved seed	who sold or exchanged selected seeds	% who conserved seed	% who sold or exchanged selected seeds
Maize	80	12	28	3	20	6	18	0	37	6
Sorghum/Millet	10	0	10	0	1	0	0	0	5	0
Cassava	70	-	59	-	27	-	28	-	45	-
Rice	65	9	63	7	23	5	37	6	45	6
Groundnut	82	10	59	11	33	9	33	10	51	[illegible]
Sweetpotato	53	-	35	-	17	-	20	-	30	-
Potato	0	-	0	-	1	-	0	-	0	-
Beans	67	8	56	6	25	7	26	9	42	7
Sunflower/ sesame	4	0	0	0	0	0	0	0	1	0
Cotton	1	1	0	0	0	0	0	0	0	0
Tomato	13	-	11	-	1	-	3	-	6	-
Onions	3	-	3	-	0	-	0	-	1	-
Garlic	1	-	3	-	0	-	1	-	1	-
Cabbage	1	-	0	-	0	-	0	-	0	-
Other	1	-	1	-	0	-	0	-	0	-

APPENDIX B

SOCIO-ECONOMIC PROFILES

ADRA: FICHA DE INFORMAÇÃO NO NIVEL DAS ALDEIAS
POSTO ADMINISTRATIVO: BAJONE

DADOS	ALDEIAS			
	A. MUTABIDE	NIALENE	NAMETE	MADABOS
Quantos Postos de Saude/centros de Saude a funcionar	0	0	0	0
Quantos Postos de Saude/centros de Saude abandonados	0	0	0	0
Acesso ao um posto de saude dentro um raio de 10 km	0	0	1	0
Como pode descrever a situação de segurança alimentar & nutrição * Poucos problemas 1 * Mais ou menos 2 * Muitos problemas 3	3	3	3	3
Quantas escolas primarias a funcionar	1	0	3	1
Quantas escolas primarias abandonadas	0	0	0	0
Quantas escolas secundarias a funcionar	0	0	0	0
Quantos mercados/lojas de alimentos com estruturas permanentes (pode ser pau/capim ou blocos)	1	0	2	0
Quantos mercados/lojas de roupas/outras mercadorias com estruturas permanentes (pode ser pau/capim ou blocos)	0	0	6	0
Ambulantes compram produção agricola na zona? * Nunca 1 * As vezes 2 * Regularmente 3	2	2	2	2
Quantas lojas compram produção	1	0	0	0
Quantas lojas vendem insumos agricolas	0	0	0	0
Quantas moagems a funcionar	0	0	0	0
Os residentes pode apanhar transporte dentro um raio de 5 km * Varios vezes por dia 1 * Alguns vezes por semana 2 * As vezes 3 * Nunca 4	3	4	3	3

ADRA-FICHA DE INFORMAÇÃO NO NIVEL DAS ALDEIAS
POSTO ADMINISTRATIVO: MAGANJA DA COSTA - BALA

DADOS	ALDEIAS						
	MARA-BUA	MALABA	MURANGA	NANGA-MUA	ZONA E	NACUPE	NHA-LUBA
Quantos Postos de Saude centros de Saude a funcionar	0	0	0	0	0	0	0
Quantos Postos de Saude/centros de Saude abandonados	0	0	0	0	0	0	0
Acesso ao um posto de Saude dentro um raio de 10 km	0	0	1	1	1	0	0
Como pode descrever a situação de segurança alimentar & nutrição * Poucos problemas 1 * Mais ou menos 2 * Muitos problemas 3	3	2	2	3	3	3	3
Quantas escolas primarias a funcionar	1	2	1	2	1	0	1
Quantas escolas primarias abandonadas	0	0	0	0	0	1	0
Quantas escolas secundarias a funcionar	0	0	0	0	0	0	0
Quantos mercados/lojas de alimentos com estruturas permanentes (pode ser pau/capim ou blocos)	0	0	0	0	0	0	0
Quantos mercados/lojas de roupas outras mercadorias com estruturas permanentes (pode ser pau/capim ou blocos)	0	0	0	0	0	0	0
Ambulantes compram produção agricola na zona? * Nunca 1 * As vezes 2 * Regularmente 3	2	2	2	2	2	1	1
Quantas lojas compram produção	0	0	0	0	0	0	0
Quantas lojas vendem insumos agricolas	0	0	0	0	0	0	0
Quantas moagens a funcionar	0	0	0	0	0	0	0
Os residentes pode apanhar transporte dentro um raio de 5 km * Varios vezes por dia 1 * Alguns vezes por semana 2 * As vezes 3 * Nunca 4	3	4	1	2	3	1	3

ADRA:FICHA DE INFORMAÇÃO NO NIVEL DAS ALDEIAS
POSTO ADMINISTRATIVO: MOCUBELA

DADOS	ALDEIAS				
	MUCUNA	MEIA	MATIQUINA	MUIDEBO	MULOCHIUA
Quantos Postos de Saude/centros de Saude a funcionar	0	0	0	0	0
Quantos Postos de Saude/centros de Saude abandonados	0	0	0	0	0
Acesso ao um posto de Saude dentro um raio de 10 km	0	0	0	0	1
Como pode descrever a situação de segurança alimentar & nutrição * Poucos problemas 1 * Mais ou menos 2 * Muitos problemas 3	3	3	1	2	1
Quantas escolas primarias a funcionar	1	1	1	0	0
Quantas escolas primarias abandonadas	0	0	1	0	0
Quantas escolas secundarias a funcionar	0	0	0	0	0
Quantos mercados/lojas de alimentos com estruturas permanentes (pode ser pau/capim ou blocos)	0	0	0	0	0
Quantos mercados/lojas de roupas/outras mercadorias com estruturas permanentes (pode ser pau/capim ou blocos)	0	0	0	0	0
Ambulantes compram produção agricola na zona? * Nunca 1 * As vezes 2 * Regularmente 3	2	2	1	2	2
Quantas lojas compram produção	0	0	0	0	0
Quantas lojas vendem insumos agricolas	0	0	0	0	0
Quantas moagems a funcionar	0	0	1	0	0
Os residentes pode apanhar transporte dentro um raio de 5 km * Varios vezes por dia 1 Alguns vezes por semana 2 * As vezes 3 * Nunca 4	2	1	4	1	1

ADRA:FICHA DE INFORMAÇÃO NO NIVEL DAS ALDEIAS
POSTO ADMINISTRATIVO BAIXA LICUNGO

DADOS	ALDEIAS			
	RACINHO	MUCIGOMBE	MUSSALA	MUEBENE
Quantos Postos de Saude/centros de Saude a funcionar	1	0	0	1
Quantos Postos de Saude/centros de Saude abandonados	0	0	0	0
Acesso ao um posto de saude dentro um raio de 10 km	1	0	1	1
Como pode descrever a situação de seguranca alimentar & nutrição * Poucos problemas 1 * Mais ou menos 2 * Muitos problemas 3	3	3	2	2
Quantas escolas primarias a funcionar	2	0	0	2
Quantas escolas primarias abandonadas	0	0	1	0
Quantas escolas secundarias a funcionar	0	0	0	1
Quantos mercados/lojas de alimentos com estruturas permanentes (pode ser pau/capim ou blocos)	0	0	0	3
Quantos mercados/lojas de roupas/outras mercadorias com estruturas permanentes (pode ser pau capim ou blocos)	0	0	0	3
Ambulantes compram produção agricola na zona? * Nunca 1 * As vezes 2 * Regularmente 3	2	2	2	2
Quantas lojas compram produção	0	0	0	0
Quantas lojas vendem insumos agricolas	0	0	0	0
Quantas moagens a funcionar	0	0	0	0
Os residentes pode apanhar transporte dentro um raio de 5 km * Varios vezes por dia 1 * Alguns vezes por semana 2 * As vezes 3 * Nunca 4	4	4	2	2

APPENDIX C

MARKET PRICE INFORMATION

Table C 1 Market price Information June 1997

	MAGANJA DA COSTA SEDE		PEBANE	
	Campo	Villa	Campo	Villa
Chicken	15000	25000	17000	22500
Pig	N/A	N/A	N/A	N/A
Rabbit	N/A	N/A	25000	N/A
Goat	N/A	N/A	250000	300000
Cattle	N/A	N/A	N/A	N/A
Donkeys	N/A	N/A	N/A	N/A
Ducks	25000	30000	20000	25000
Guinea pig	N/A	N/A	5000	5000
Dog	40000	N/A	10000	N/A
Hoe	N/A	30000	17000	20000
Panga	N/A	10000	11000	11000
Axe	N/A	15000	22000	22000
Spade	N/A	N/A	N/A	N/A
Rakes	N/A	N/A	N/A	N/A
Sickles	N/A	N/A	N/A	N/A
Files	N/A	N/A	20000	20000
Plough	N/A	N/A	N/A	N/A
Sewing machines	N/A	N/A	N/A	N/A
Wooden tables	150000	200000	200000	200000
Wooden bed	140000	160000	175000	175000
Bicycle	N/A	1200000	1150000	1150000
Motorcycle	N/A	N/A	N/A	N/A
Radio	N/A	N/A	150000	250000
Mattress (Bag & straw)	N/A	N/A	60000	60000
Aluminum pots (medium)	N/A	30000 (local)	75000	110000

APPENDIX D

QUESTIONNAIRE

ADRA Inquérito da linha de base 1997

Faca os cumprimentos e peça para falar com o/a chefe da familia

Srs Estamos aqui para pedir a sua colaboração na realização dum inquerito promovido pelo ADRA e a Administração O inquerito se destina a estudar as condições Socio-economicas nesta aldeia A vossa colaboraçao no preenchimento deste inquerito seria muito util, e nos ficariamos muito gratos, entanto não e obrigatorio mas a sua participação claro que sera dada como confidencial Podemos começar?

Nomes dos Inquindores/equipa _____ Data da entrevista _____

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A IDENTIFICAÇÃO

1	**Número** do questionario	A0101
2	**Nome da** Localidade	A0201
3	**Nome da** Communidade	A0301
4	**Quem respondeu o questionario** 1 **Chefe** (homem) 2 Chefe (mulher) 3 Esposa do chefe 4 **Outro** adulto (feminino) 5 Outro adulto (masculino) 6 Criança	A0401 A0402
5	**A familia** participa nos actividades the programma de Caju de ADRA 1 Sim 2 Não	A0501

B· MATERIAIS DE CONSTRUÇÃO DA CASA

6	**A famila** tem quantas casas?	B0601
7	**O teto** da casa principal e de que material? 1 **Capim** ou outro material natural 2 Zinco 3 Outro (especificar)	B0701
8	**Qual e a construção da casa principal?** 1 **Pau** a pique 2 Bloco de matope 3 Bloco de cimento ou tijolo(matope queimado 4 Outro (especificar)	B0801
9	**A porta** da casa principal e de que material? 1 Madeira 2 Outro material (especificar)	B0901

C ACTIVIDADES ECONOMICAS FORA DA MACHAMBA

10	A familia recebeu remessas durante os ultimos 12 meses? (1-Sim 2- Não)	D1001

MEMBRO RESIDENTE (Qualquer pessoa que costuma comer nesta casa (Coloque o NOME)	RELAÇAO AO CHEFE DO AGREGADO 1 Chefe 2 Esposa(o) 3 Filho (a) 4 Pai/mãe 5 Outro Familiar 6 Outro (esp)	SEXO 1 Masculino 2 Feminino	IDADE 0 60 Crianças com menos de 5 anos fornece os meses 70 5 a 10 anos 71 Entre 10 e 55 72 Mais de 55	ALTURA DAS CRIANÇAS DE 2 A 5 ANOS (0 - Quando a criança não esta presente)	Durante os ultimos 12 meses esta pessoa tem contribuido para a renda familiar fazendo alguma actividade economica a conta propria (Exemplo venda de bebida, carvão, cestos, esteiras, carpintaria etc) Codigo		Durante os ultimos 12 meses esta pessoa tem contribuido para renda familiar vendendo a sua mao de obra fora da machamba (Exemplo Trabalhando na machamba do vizinho, ou da companhia ou na fabrica, etc) Codigo	
C1002	C1003	C1004	C1005	C1006	C1007		C1008	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
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20								
21								
22								
23								

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D SAUDE

11	**Quantos** casos de diarreia nas crianças de **0 a 5** anos e outras pessoas tiveram nas ultimas 2 semanas	0 a 5 Anos 6+ Anos	D1101 D1102
12	**Quando** uma criança com menos 5 anos anos tem diarreia, o quantidade que da a beber ou comer e 1 **Nada** Menos de normal 3 A mesma 4 Mais de que normalmente	Leite materno Outros liquidos Alimentos	D1201 D1202 D1203

E. CONSUMO DE ALIMENTOS

13	**Existe** tempos quando todos os membros do agregado familiar não comem sufficiente? **Se sim, em que meses têm maiores problemas com a alimentação ? 1 - sim / 2 - não**	Janeiro E1901 Fevereiro E1902 Março E1903 Abril E1904 Maio E1905 Junho E1906	Julho E1907 Agosto E1908 Setembro E1909 Outobro E1910 Novembro E1911 Dezembro E1912

14 Grupos de alimentos	Quantas vezes durante semana passada as mulheres e crianças desta familia consomeram produtos destes grupos alimentares? 1- Nunca 3-Uma vez por semana 4- Varias vezes por semana 5- Uma vez por dia 6- Varias vezes por dia	Grupos de alimentos	Quantas vezes durante a semana passada as mulheres e crianças desta familia consomeram produtos destes grupos alimentares? 1- Nunca 2- As vezes 3- Uma vez por semana 4- Varias vezes semana 5- Uma vez por dia 6-Varias vezes por dia
1 Milho	E1401	10 Feijões	E1402
2 Mandioca	E1403	11 Amendoim/ castanha	E1404
3 Batata doce/Macuti	E1405	12 Peixe (seco/fresco/lata)	E1406
4 Mapira/mexoeira	E1407	13 Aves (pato/galinha/ ovos)	E1408
5 Pão	E1409	14 Carne/Carne de caça	E1410
6 Arroz	E1411	15 Cana / Açucar	E1412
7 Folhas	E1413	16 Oleo/gorduras	E1414
8 Tomate, cebola, repolho ou outras hortaliças	E1415	17 Sal	E1416
9 Banana, papaia ou outras frutas	E141		E1418

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F ARMAZENAMENTO

15	**Armazenou** produtos agricolas no ano passado? (1-Sim 2-Nao)	F1501
16	**No caso** de milho mapira e feijão nhemba, qual e a proporção que voces normalmente perdem durante o armazenamento? **Utilize feijões** para mostrar a proporção 99 se nao armazenou	F1601 ___ ___ Mandioca F1602 ___ ___ Feijoes F1603 ___ Amendoim

G: ANIMAIS, INSTRUMENTOS DE PRODUÇÃO E OUTROS BENS QUE A FAMILIA POSSUI

ANIMAIS		Instrumentos de producao		Bens da casa e outros	
Animal	Numero	Instrumento	Numero	Ben	Numero
1 Galinha	[illegible]	1 Enxadas	G1702	1 Maquinas de costura	G1703
2 Porcino	[illegible]	2 Catanas	G1705	2 Mesas de madeira	G1706
3 Coelho	[illegible]	3 Machados	G1708	3 Camas de madeira	G1709
4 Cabrito	[illegible]	4 Pas	G1711	4 Bicicletas	G1712
5 Boi	[illegible]	5 Ancinhos	G1714	5 Motorizadas	G1715
6 Burro	[illegible]	6 Foices	G1717	6 Radios	G1718
7 Pato	[illegible]	7 Limas	G1720	7 Colchões	G1721
8 Porquinho da India	[illegible]	8 Charruas de tracçao	G1723	8 Relogio de pulso ou de parede	G1724
				9 Panelas de aluminio	[illegible]

H FONTES DE RENDIMENTOS

		1- SIM 2-NAO
18	**Como e** que a familia ganhou dinheiro durante o ultimo ano?	
	1 **Venda** de culturas alimentares (milho mapira, tomate arroz, feijao etc)	H1801
	2 **Venda** de agu	H1802
	3 **Venda** de outras culturas de rendimento (exemplo algodão girassol)	H1803
	4 **Venda** de gado animais	H1804
	5 **Venda** de alimentos feitos em casa (exemplo pão pasteis, doce de amendoim etc)	H1805
	6 **Venda** de bebidas tradicionais (nipa, sura)	H1806
	7 **Auto-emp**[illegible]go não agricola (exemplo reparações de relogios, carpintaria alfataria etc)	H1807
	8 **Compra e** venda de roupas comida cigarros, fosforos, etc	H1808
	9 **Venda** de agua areia, lenha carne de caça, peixe mel etc	H1809
	10 **Venda** de produtos doados	H1810
	11 **Salarios** regulares	H1811
	12 **Salarios** temporarios (Ganho-ganho)	H1812
	13 **Aposentados** outros dinheiros do governo	H1813
	14 **Outro**(especificar)	H1814

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I DESPESAS

19	**Como gastou dinheiro durante o ultimo ano?**	1- SIM 2-NÃO
	1 **Comida** (não incluir carne)	I1902
	2 **Carne**	I1904
	3 **Bebida**	I1906
	4 **Roupas** novas	I1908
	5 **Roupas** de segunda mao capulanas e artigos pessoais	I1910
	6 **Saúde**	I1912
	7 **Educação**	I1914
	8 **Casa** (incluindo bêns domesticos, rendas, manutenção)	I1916
	9 **Operações** da machamba ou da empresa domestica (compra de utensilios)	I1918
	10 **Pagamento** de dividas	I1920
	11 **Transporte**	I1922
	12 **Festas** e ceremonias	I1924
	13 **Outro** (especificar)	I1926

J: AGRICULTURA

20	**Quantas** machambas a familia cultivou durante esta campanha?		J2001
21	**Utilizou** adubo quimico em alguma machamba durante este ano? (1-Sim 2-Não)		J2101
22	**Utilizou** outro insumo (semente melhorada, insecticida, herbicida) em alguma machamba este ano? (1-Sim 2-Não)		J2201
23	**A familia** recebeu fomento de alguma empresa durante este ano para a produção de uma cultura de rendimento? (1-Sim 2-Não) Se sim especificar a cultura		J2301
			J2302
24	**A empresa** garante a compra desta cultura de rendimento (pergunta 23)? (1- Sim, 2- Não, 3- Não aplicavel)		J2401
25	**Quantos** cajueiros tem	Numero dos cajueiros produtivas	J2501
		Numero dos cajueiros improdutivas	J2502
		Numero dos cajueiros novas	J2503
26	**No último** ano usou uma das seguintes tecnicas na produção de caju? (1-Sim 2-Não)	Sachas por baixo das vossas arvores	J2601
		Podas às arvores	J2602
27	**Utilize** culturas em consorciação com fruteiras? Se sim que tipos		J2701
			J2702
			J2703

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K PRODUÇÃO AGRICOLA

28 Cultura	Quantas vezes plantou este cultura desde Outobro 1996	Conservou sementes na campanha passado	Vendeu/trocou sementes selecionadas aos outros pessoas	Qual foi o destino dos produtos da sua machamba? Indica utilizando feijões a proporçã que a sua familia alocou proporcional ao cada destino			Se vendeu produtos, quanto vendeu e a que preço?				A quem vendeu a maior parte?
	0- Não 1- Uma vez 2- Duas vezes etc	1 Sim 2- Não	1- Sim 2- Não	Se ja colheu - põe numero de Feijões Se ainda não colheu - põe 98 Se plantou mas perdeu todos - põe 99			Estado da maioria do produto vendida (codigos em baixo)	Unidade (codigos em baixo)	Quantidade	Preço por unidade	1 Loja/mer cado/pessoaslocais 2 Comerc ambulante com carro 3 Comerc ambulante sem carro 4 ONG 5 Agricom 6 Outros
				CONSUMO	VENDA	OUTRO (ex Semente)					
1 Milho	K0101	K0102	k0103	K0104	K0105	K0106	K0107	K0108	K0109	K0110	K0111
2 Mapira/mexoeira	K0201	K0202	k0203	K0204	K0205	K0206	K0207	K0208	K0209	K0210	K0211
3 Mandioca	K0301	K0302		K0304	K0305	K0306	K0307	K0308	K0309	K0310	K0311
5.Arroz	K0401	K0402	k0403	K0404	K0405	K0406	K0407	K0408	K0409	K0410	K0411
6 Amendoim	K0501	K0502	k0503	K0504	K0505	K0506	K0507	K0508	K0509	K0510	K0511
7 Batata Doce	K0601	K0602		K0604	K0605	K0606	K0607	K0608	K0609	K0610	K0611
8 Batata Reno	K0701	K0702		K0704	K0705	K0706	K0707	K0708	K0709	K0710	K0711
9 Feijões	K0801	K0802	k0803	K0804	K0805	K0806	K0807	K0808	K0809	K0810	K0811
11 Girassol/Gergelim	K0901	K0902	k0903	K0904	K0905	K0906	K0907	K0908	K0909	K0910	K0911
12 Algodão	K1001	K1002	k1003	K1004	K1005	K1006	K1007	K1008	K1009	K1010	K1011
13 Tomate	K1101	K1102		K1104	K1105	K1106	K1107	K1108	K1109	K1110	K1111
14 Cebola	K1201	K1202		K1204	K1205	K1206	K1207	K1208	K1209	K1210	K1211
15 Alho	K1301	K1302		K1304	K1305	K1306	K1307	K1308	K1309	K1310	K1311
16 Cueve	K1401	K1402		K1404	K1405	K1406	K1407	K1408	K1409	K1410	K1411
17 Outros hortaliças	K1501	K1502		K1504	K1505	K1506	K1507	K1508	K1509	K1510	K1511

Estados 1- Espiga **2- Grau** 3-Grao com casca 4- Grao sem casca 5-Maçaroca 6-Pe 7-Fresco 8-Seco 9 Semente 10-Vagem
Unidades Sacos 1(100kg) **2(90kg),** 3(60kg) 4 (50kg) 5 (25kg) Latas 11(25litro) 12(20litro) 13(5litro) 14(2litro) 15(1litro) Kilogramas codigo 10 Litros codigo 20

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28 Cultura	Quantas arvores tem	Qual foi o destino dos produtos da sua machamba? Indique utilizando feijões a proporçã que a sua familia alocou proporcional ao cada destino						A quem vendeu a maior parte?
		Se ja colheu - poe numero de Feijoes Se ainda não colheu - põe 98 Se plantou mas perdeu todos - poe 99			Unidade	Quantidade	Preço por unidade	1 Loja/mercado/pes-soaslocais 2 Comerc ambulante com carro 3 Comerc ambulante sem carro 4 ONG 5 Agricom 6 Outros
		CONSUMO	VENDA	OUTRO (ex Semente)				
1 Caju	K0101	K0102	K0103	K0104	K0105	K0106	K0107	K0108
2 Ananas	K0201	K0202	K0203	K0204	K0205	K0206	K0207	K0208
3 Citronos	K0301	K0302	K0303	K0304	K0305	K0306	K0307	K0308
4 Mangeiras	K0401	K0402	K0403	K0404	K0405	K0406	K0407	K0408
5 Papaeiras	K0501	K0502	K0503	K0504	K0505	K0506	K0607	K0508
6 Bananeiras	K0601	K0602	K0603	K0604	K0605	K0606	K0607	K0608
7 Outras fruitas	K0701	K0702	K0703	K0704	K0705	K0706	K0707	K0708

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APPENDIX E

REVISED QUESTIONNAIRE

FOR MID-TERM SURVEY

ADRA Inquérito da linha de base 1997

Faca os cumprimentos e peça para falar com o/a chefe da familia

Srs Estamos aqui para pedir a sua colaboração na realização dum inquerito promovido pelo ADRA e a Administração O inquérito se destina a estudar as condições Socio-economicas nesta aldeia A vossa colaboração no preenchimento deste inquerito seria muito util, e nos ficariamos muito gratos, entanto não e obrigatorio mas a sua participação claro que sera dada como confidencial Podemos começar?

Nomes dos Inquirdores/equipa _____ Data da entrevista _____

Controlado pelo _____

A: IDENTIFICAÇÃO

1	**Número** do questionario	A0101
2	**Nome da** Localidade	A0201
3.	**Nome da** Communidade	A0301
4.	**Quem respondeu o questionario** 1 **Chefe** (homem) 2 Chefe (mulher) 3 Esposa do chefe 4 **Outro** adulto (feminino) 5 Outro adulto (masculino) 6 Criança	A0401 A0402
5	**A familia** participa nos actividades the programma de Caju de ADRA 1 Sim 2 Não	A0501

B: MATERIAIS DE CONSTRUÇÃO DA CASA

6	**A famila** tem quantas casas?	B0601
7	**O teto da** casa principal e de que material? 1 **Capim** ou outro material natural 2 Zinco 3 Outro (especificar)	B0701
8	**Qual e a** construção da casa principal? 1 **Pau a** pique 2 Bloco de matope 3 Bloco de cimento ou tijolo(matope queimado 4 Outro (especificar)	B0801
9	**A porta** da casa principal e de que material? 1 **Madeira** 2 Outro material (especificar)	B0901

C ACTIVIDADES ECONOMICAS FORA DA MACHAMBA

10	**A familia** recebeu remessas durante os ultimos 12 meses? (1-Sim 2- Nao)	D1001

MEMBRO RESIDENTE (Qualquer pessoa que costuma comer nesta casa (Coloque o NOME)	RELAÇÃO AO CHEFE DO AGREGADO 1 Chefe 2 Esposa(o) 3 Filho (a) 4 Pai mãe 5 Outro Familiar 6 Outro (esp)	SEXO 1 Masculino 2 Feminino	Durante os ultimos 12 meses, quantos meses estava nesta casa?	IDADE 0 60 Crianças com menos de 5 anos fornece os meses 70 5 a 10 anos 71 Entre 10 e 55 72 Mais de 55	ALTURA DAS CRIANÇAS DE 2 A 5 ANOS (0 - Quando a criança não esta presente)	Durante os ultimos 12 meses esta pessoa tem contribuido para a renda familiar fazendo alguma actividade economica a conta propria (Exemplo venda de bebida, carvão cestos, esteiras, carpintaria etc) Codigo		Durante os ultimos 12 meses esta pessoa tem contribuido para renda familiar vendendo a sua mao de obra fora da machamba (Exemplo Trabalhando na machamba do vizinho, ou da companhia, ou na fabrica etc) Codigo	
C1002	C1003	C1004	C1005	C1006	C1007		C1008		C1009
1									
2									
3									
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D.SAUDE

11	**Quantos** casos de diarreia nas crianças de 0 a 5 anos e outras pessoas tiveram nas ultimas 2 semanas	0 a 5 Anos 6+ Anos	D1101 D1102
12	Durante o ultimo 2 semanas quando uma criança com menos 5 anos anos teve diarreia, o quantidade que da a beber ou comer e 1 Nada 2 Menos de normal 3 A mesma 4 Mais de que normalmente 99 Uma criança que não mama (D1201) ou uma craiança que so mama e ainda come alimentos (D1203)	Leite materno Outros liquidos Alimentos	D1201 D1202 D1203

E: CONSUMO DE ALIMENTOS

13	**Existe tempos quando todos os membros do agregado familiar não comem sufficiente? Se sim, em que meses têm maiores problemas com a alimentação ? 1 - sim / 2 - não**	Janeiro E1901____ Fevereiro E1902____ Março E1903____ Abril E1904____ Maio E1905____ Junho E1906	Julho E1907____ Agosto E1908____ Setembro E1909____ Outobro E1910____ Novembro E1911____ Dezembro E1912

14 Grupos de alimentos	Quantas vezes durante semana passada as mulheres e crianças desta familia consomeram produtos destes grupos alimentares? 1- Nunca 3-Uma vez por semana 4- Varias vezes por semana 5- Uma vez por dia 6- Varias vezes por dia	Grupos de alimentos	Quantas vezes durante a semana passada as mulheres e crianças desta familia consomeram produtos destes grupos alimentares? 1- Nunca 2- Ás vezes 3- Uma vez por semana 4- Varias vezes semana 5- Uma vez por dia 6-Varias vezes por dia
1 Milho	E1401	10 Feijões	E1402
2 Mandioca	E1403	11 Amendoim/ castanha	E1404
3 Batata doce/Macuti	E1405	12 Peixe (seco/fresco/lata)	E1406
4 Mapira/mexoeira	E1407	13 Aves (pato/galinha/ ovos)	E1408
5 Pão	E1409	14 Carne/Carne de caça	E1410
6 Arroz	E1411	15 Cana / Açucar	E1412
7 Folhas	E1413	16 Oleo/gorduras	E1414
8 Tomate cebola, repolho u outras hortaliças	E1415	17 Sal	E1416
9 Banana, papaia ou outra frutas	E141	18 Côcos	E1418

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L PRODUÇÃO AGRICOLA

37 Cultura	Quantas vezes plantou este cultura desde Outobro 1996	Conservou sementes na campanha passado	Vendeu/troco u sementes selecionadas aos outros pessoas	Vendeu/troco ou uma parte da sua produçao?		A quem vendeu a maior parte?
	0- Nao 1- Uma vez 2- Duas vezes etc	1 Sim 2- Não	1- Sim 2- Não	VENDA	TROCA	1 Loja/mercado/pessoaslocais 2 Comerc ambulante com carro 3 Comerc ambulante sem carro 4 ONG 5 Agricom 6 Outros
1 Milho	L0101	L0102	L0103	L0105	L0106	L0107
2 Mapira/mexoeira	L0201	L0202	L0203	L0205	L0206	L0207
3 Mandioca	L0301			L0305	L0306	L0307
4 Arroz	L0401	L0402	L0403	L0405	L0406	L0407
5 Amendoim	L0501	L0502	L0503	L0505	L0506	L0507
6 Batata Doce	L0601			L0605	L0606	L0607
7 Batata Reno	L0701			L0705	L0706	L0707
8 Feijões	L0801	L0802	L0803	L0805	L0806	L0807
9 Girassol/Gergelim	L0901	L0902	L0903	L0905	L0906	L0907
10 Algodão	L100	L1002	L1003	L1005	L1006	L1007
HORTALIÇAS						
11 Tomate	L1101			L1105	L1106	L1107
12 Cebola	L1201			L1205	L1206	L1207
13 Alho	L1301			L1305	L1306	L1307
14 Cueve	L1401			L1405	L1406	L1407
15 Outros hortaliças	L1501			L1505	L1506	L1507
FRUTEIRAS						
	Quantas arvores/ plantas tem?	Quantas arvores/ plantas produtivas tem?	Qauntas arvores/ plantas nova tem?	Vendeu uma parte da produção? 1- Sim 2- Nao	Trocou uma parte da produção? 1 Sim 2 Não	
16 Ananas	L16	L16	L1603	L1604		
17 Bananeiras	L1	L1	L1703	L1		
18 Papaeiras	L1	L18	L1803	L1804		

F ARMAZENAMENTO

15	**Armazenou** produtos agricolas no ano passado? (1-Sim 2-Não)	F1501
16	**No caso** de milho mapira e feijão nhemba, qual e a proporção que voces normalmente perdem durante o armazenamento? Utilize **feijões** para mostrar a proporção 98- Se plantou mas não armazenou 99- Se não plantou/plantou mas não colheu	F1600_____ Arroz F1601 _____ Mandioca F1602 _____ Feijões F1603_____ Amendoim F1604 Milho

G. ANIMAIS, INSTRUMENTOS DE PRODUÇÃO E OUTROS BENS QUE A FAMILIA POSSUI

ANIMAIS		Instrumentos de producao		Bens da casa e outros	
Animal	Numero	Instrumento	Numero	Ben	Numero
1 Galinha	G1701	1 Enxadas	G1702	1 Maquinas de costura	G1703
2 Porcino	G1704	2 Catanas	G1705	2 Mesas de madeira	G1706
3 Coelho	G1707	3 Machados	G1708	3 Camas de madeira	G1709
4 Cabrito	G1710	4 Pas	G1711	4 Bicicletas	G1712
5 Boi	G1713	5 Ancinhos	G1714	5 Motorizadas	G1715
6 Burro	G1716	6 Foices	G1717	6 Radios	G1718
7 Pato	G1719	7 Limas	G1720	7 Colchões	G1721
8 Porquinho da India	G1722	8 Charruas de tracção	G1723	8 Relogio de pulso ou de parede	G1724
				9 Panelas de aluminio	G1725

H. FONTES DE RENDIMENTOS

18	**Como e** que a familia ganhou dinheiro/bens durante o ultimo ano?	1- SIM 2-NÃO
	1 **Venda** de culturas alimentares (milho, mapira, tomate arroz, feijao, etc)	H1801
	2 **Venda** de caju	H1802
	3 **Venda** de outras culturas de rendimento (exemplo algodão, girassol)	H1803
	4 **Venda** de gado aminais	H1804
	5 **Venda** de alimentos feitos em casa (exemplo pão pasteis doce de amendoim etc)	H1805
	6 **Venda** de bebidas tradicionais (nipa, sura)	H1806
	7 **Auto-emprego** não agricola (exemplo reparações de relogios, carpintaria alfataria etc)	H1807
	8 **Compra** e venda de roupas comida, cigarros, fosforos etc	H1808
	9 **Venda** de agua areia lenha carne de caça, peixe, mel etc	H1809
	10 **Troca** dos produtos agricolas para outros alimentos	H1810
	11 **Troca** dos produtos agricolas para roupas e outros bems	H1811
	12 **Salários** regulares	H1812
	13 **Salários** temporarios (Ganho-ganho)	H1813
	14 **Aposentad** outros dinheiros do governo	H1814
	15 **Outro**(especifique)	H1815

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I DESPESAS

19	Como gastou dinheiro durante o ultimo ano?	1 SIM 2 NAO
	1 Comida (não incluir carne)	I1901
	2 Carne	I1902
	3 Bebida	I1903
	4 Roupas de segunda mao , roupas de calamidade, capulanas e artigos pessoais	I1904
	5 Roupas novas	I1905
	6 Saúde	I1906
	7 Educação	I1907
	8 Casa (incluindo bêns domesticos, rendas, manutenção)	I1908
	9 Operações da machamba ou da empresa domestica (compra de utensilios)	I1909
	10 Pagamento de dividas	I1910
	11 Transporte	I1911
	12 Festas e ceremonias	I1912
	13 Outro (especificar)	I1913

J AGRICULTURA

20	**Quantas** machambas a familia cultivou durante esta campanha?	J2001
21	**Utilizou** adubo quimico em alguma machamba durante este ano? (1-Sim 2-Não)	J2101
22	**Utilizou** outro insumo (semente melhorada, insecticida, herbicida) em alguma machamba este ano? (1-Sim 2-Não)	J2201
23	**A familia** recebeu fomento de alguma empresa durante este ano para a produção de uma cultura de rendimento? (1-Sim 2-Não) Se sim especificar a cultura	J2301 J2302
24	**A empresa** garante a compra desta cultura de rendimento (pergunta 23)? (1- Sim, 2- Não, 3- Não aplicavel)	J2401

K FRUTEIRAS

25	**Quantos** cajueiros tem	Numero dos cajueiros produtivas	K2501
		Numero dos cajueiros improdutivas	K2502
		Numero dos cajueiros novas	K2503
26	**No ultimo** ano usou uma das seguintes tecnicas na produção de caju? (1-Sim 2-Não)	Sachas por baixo das vossas arvores	K2601
		Podas as arvores	K2602

27	**Utilize** culturas em consorciação com fruteiras? Se sim que tipos	K2701
		K2702
		K2703
28	**Vendeu** castanhas de caju durante o ultimo campanha?	K2801
29	**Se vendeu** castanhas, quantas vendeu? Quantas _____	K2901
	Unidade _____	K2902
30.	**A quem** vendeu a maior parte? 1 Loja/mercado/pessoaslocais 2 Comerciante ambulante com carro 3 Comerciante ambulante sem carro 4 ONG 5 Agricom 6 Outros _____	K3001
31	**Trocou** castanhas de caju durante o ultimo campanha?	K3101
32	**Se trocou** castanhas, quantas trocou? Quantas _____	K3201
	Unidade _____	K3202
33	**Com quem** trocou a maior parte? 1.Loja/mercado/pessoaslocais 2 Comerciante ambulante com carro 3 Comerciante ambulante sem carro 4. ONG 5 Agricom 6 Outros	K3301
34	**O que era** o produto/produtos que os compradores utilizaram para trocar com castanhas? _____	K3401
	_____	K3402
		K3403
35	**Indique** que proporção das castanhas utilizaram para consume/venda/troca/outros usos? **Vendeu**	K3501
	Consumeu	K3502
	Trocou	K3503
	Outros	K3504
36	**Em comparação** dos anos anteriores, alguma coisa relaçionado da produção e commercialicação da castanha de caju era differente **na ultima** campanha? Se sim explica Produção_____	K3601
	Commercialização_____	K3602

APPENDIX F

LOGFRAME

The original project proposal contained a logframe, but very few of the indicators had targets, as it was still necessary to conduct the baseline survey The present revision of the original logframe was necessary because

1) The findings of the baseline survey supported the appropriateness of some indicators whilst questioning others In practice it was found that some indicators were difficult to measure accurately through a household survey Other alternatives would have been either too expensive or impractical

2) Since the original logframe was developed the nutrition component of the programme was taken out This affected some indicators, such as the dietary intakes of certain kinds of foods Without the nutrition component the agricultural progamme is unlikely to make a significant contribution to the original indicators/targets related to dietary intakes and nutritional status

Even though the revised logframe is more complete in terms of defined targets there are still some grav areas These relate to the road and market rehabilitation components where the output/activity indicators will have to be refined once the road rehabilitation specialist has been appointed

OBJECTIVE	Old indicator	New indicator	Means of verification
Sustainable increase in participating household's income	* 20% increase in average real income derived from agricultural production among rural households * Increase in the number of small holders involved in agroforestry	Household Possession Index MSE' wealth index % of households with household possessions totalling 500000 mt or more	Household survey
GOALS			
1 Sustainable increase in household Food Access and availability	* 75% of the participants will grow agricultural produce\rich in at least one of the following vitamins proteins carbohydrates	% increase in the mean number of different crops grown per household	Household survey
2 Improved year round food availability and accessibility	* % of small holders and participants who report sufficient food to satisfy all family members year round	% decrease in the mean number of months when households report food shortages	Household survey
3 Enhancement of agricultural production through improved market access	* % increase of food crops and cash crops marketed by farmers in the district * % increase in income gained through sales of cash/food crops in accessible markets	* % increase in the number of farmers who marketed crops * % increase in the number of crops marketed/grown for commercialization	Household survey Household survey
OUTPUTS			
1 Sustainable increase in household food access and availability			
1 1 Reforestation and rehabilitation of cashew plantations	-	6400 small holders involved in reforestation of cashew	Extension records
1 2 Intercropping in new cashew plantations	-	* % increase in # of farmers who plant crops between their young cashews * % increase in # of farmers who planted sweet potato, beans or maize between young cashews	Household survey Household survey
1 3 Cultivation of vegetables and fruit trees	-	* % increase in # of farmers who planted at least one vegetable crop * % increase in # of farmers who have banana, papaya, citrus and mango trees	Household survey Household survey
2. Improved year round food availability and accessibility			
2 1 Promotion of the use of improved storage techniques	-	* % increase in # of farmers who store agricultural produce	Household survey
2 2 Promotion of varieties and food crops that provide food [illegible] target period	-	* % increase in # of farmers who planted promoted crops/varieties	Household survey
3. Enhancement of agricultural production through improved market access			

3 1 Rehabilitation of market infra-structure	* % increase of food crops and cash crops marketed by farmers in the district	* % increase in the number of farmers who sold crops	Household survey
3 2 Road rehabilitation	* % increase in km of accessible roads to market areas	-	Road rehabilitation records

Output/activity	Indicator	Means of verification
1.1 Reforestation and rehabilitation of cashew plantation		
1 1 1 Nursery and tree distribution activities	# of seedlings prepared in nursery # of seedlings that survived after transplantation	Extension and distribution records
1 1 2 Increasing tree productivity through grafting	# of mature trees treated by means of grafting	Extension records
1 1 3 Training in cashew cultivation practices	# of farmers involved in cleaning and control of burning campaigns	Extension records
1 2 Intercropping between cashew and food crops		
1 2 1 Training in intercropping	# of farmers trained to use intercropping techniques # of hectares with intercropping correctly applied	Extension records
1 2 2 Training in nature conservation techniques	# of farmers trained in the use of natural pesticides and soil conservation	Extension records
1.3 Cultivation of vegetables and fruit trees		
1 3 1 Promotion of vegetable cultivation	# number of vegetable demonstration plots	Extension records
1 3 2 Fruitree distribution	# of fruittrees distributed	Distribution records
2 1 Promotion of the use of improved storage techniques		
2 1 1 Farmer training in the use of improved storage techniques	# of farmers trained in improved storage techniques # of farmers who constructed/adopted improved storage techniques	Extension records Extension records
2 2 Promotion of varieties and food crops that provide food during the hunger period		
2 2 1 Distribution of improved seed varieties	# of beneficiaries of the seeds of improved seed varieties	Distribution records
3 1 Rehabilitation of market infrastructure		
Still to be defined		
Still to be defined		
3 2 Rehabilitation of road infrastructure		
3 2 1 Reconstruction of roads	Increase in the km access roads made operational	EA s report /inspection

3 2 2 Reconstruction of bridges	# of bridges reconstructed/constructed	EA`s report /inspection
3 2 3 Reconstruction of culverts	# of culverts constructed/reconstructed	EA`s report /inspection

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