

OCLUVELA

Multi-Year Assistance Program

Baseline Survey Report

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EXECUTIVE SUMMARY

In November 2008, a survey was implemented by World Vision Mozambique OCLUVELA project in eight districts of Zambezia province to collect baseline data for the implementation of the first phase of the USAID-funded MYAP. In four districts of upper Zambezia (Alto Molocue, Gurue, Gile, Namarroi) and four districts in lower Zambezia (Nicoadala, Namacurra, Mopeia and Morrumbala), a total of 1644 heads of households were interviewed and a total of 1698 children assessed through the use of anthropometric measurements. The main objective of OCLUVELA is to reduce the food insecurity of the targeted populations. The survey collected data concerning household's composition, food production, sales of food crops, income sources, access of households to services and inputs, adoption of improved agricultural practices, and food consumption. Furthermore, the survey included questions related to the health and nutrition of children under five, pregnant and lactating mothers and people living with HIV/AIDS. Some of the questions directly focus on issues such as hygiene, vitamin A consumption, and child stunting, weigh or wasting. Finally, the survey used a community questionnaire to assess the community vulnerability and early warning response to most frequent shocks.

In terms of demographic characteristics, the sample is comprised by 1644 households of which 53.2% are male and 46.8% are female. The average age of respondents is 36 years of age with the majority (54%) without the ability to read and write in Portuguese. About 94% of interviewed households are in the range 18 to 59 years. In terms of household characteristics and wellbeing, households in our sample size are poor with many difficulties. About 92% of interviewed households have a house covered by grass and only 8% use conventional material on the roof. In terms of the walls of the houses, about 98% use sticks, grass, or mud bricks. Water and sanitation is deficient in the targeted areas. Almost 70% of households use drinking water from unprotected source and the sanitation was reported poor. As much as 7% of households have open sky defecation in the 2007/2008 season.

Agriculture continues to be the most important activity among the interviewed farmers. Among the crops, maize is the most important. About 80% of households reported producing maize and almost half of the respondents sold maize during the last season. Average yield for most of the

crops are higher in Northern districts when compared to the Southern districts. OCLUVELA aims to introduce new crop varieties such as common beans, sesame, vegetables, hybrid maize, cow pea and pigeon pea. At the interview time about 23% of the households were cultivating new varieties of maize, 17% cultivated butter beans and as much as 15% cultivated sorghum. Among the cultivated crops the survey investigated the levels of production of maize, cassava and sweet potato as per the missions recommended crops. The results showed that on average maize yields ranged from 400 kg per ha to 600 kg per ha, cassava yields were from 200 kg per ha to 500 kg per ha, and potato ranged from 90 to 150 kg per parcel of 100m². In terms of outcome, the surveyed households reported making on average about 800 meticaís (mt) per season by selling crops of maize, cassava and potato.

One of the objectives of OCLUVELA is improved access to agricultural services. The baseline survey found that only 12% of households irrigated their crops, and 15% had contact with an extension agent. Fertilizers, pesticides, and animal traction are less used among the interviewed households. Less than 5% of households used fertilizers or pesticides, and only 1.5% reported using animal traction. About 3% of interviewed households reported adding extra product (acetylic) to protect cereals on the storage. In terms of food security the produced food can last as much as 8 months, meaning that the rest four months the households face food shortage. Of all the lean months, December and January are the most critical.

Another objective of OCLUVELA is to protect and enhance the human health capability. This can be done by improving the nutrition and health of children under 5, with emphasis on children zero to 23 years, improving nutrition and health of pregnant and lactating woman, and improving nutrition and health of people living with HIV/AIDS and the chronically ill. The baseline survey found that 36.3% of children are moderately to severely stunted, 23.7% are moderately to severely underweight and about 8% of children are moderately to severely wasted. The rates for wasting were highest in Mopeia, while Namacurra districts had higher a proportion of stunting and underweight.

The third component of the OCLUVELA project is community resiliency. The baseline found that about 90% of the overall sample reported being affected by a shock that reduces the standard

of living. Among the shocks drought, plagues, and epidemic were reported as having the most deleterious impacts on communities. Floods were reported more frequently in the Southern districts of Mopeia and Morrumbala, while the Northern districts did not report floods as shocks. However, about 73% of northern communities reported cyclones as shocks to their communities. In the South, only 5% reported cyclones as a source of shock.

Communities will be advised to develop an early warning system for the most frequent shocks. At the time of interview, more than 80% of the 61 visited communities did not have an early warning system in place. Regarding the index of the capacity of the community to mobilize resources, organize the stakeholders, and maintain the projects, the results showed that the average community capacity index of the visited sites is 5.19, indicating weakness in these communities. The northern communities were stronger than the southern when comparing the community capacity index.

ABBREVIATIONS

CAP	Agricultural and Livestock Census
CI	Chronically Ill
Cm	Centimeters
CNCS	National Coordinating Body on HIV Aids
CSN	Community Safety Net
DHS	Demographic Health Survey
DR	Development Relief
EW	Early Warning
FA	Farmers Association
FANTA	Food And Nutrition Technical Assistance
GPZ	Office for Planning for Development of Zambeze Valley
ha	Hectare
HAZ	Height for Age Z score
HDDS	Household Dietary Diversity Score
HH	Household Head
IDDS	Infant Dietary Diversity Score
INGC	National Institute for Management of Calamities
IPTT	Indicator Performance Tracking Table
IRD	International Relief Development
Kg	Kilogram
KPC	Knowledge Practice Coverage
MAHFP	Months of Adequate Household Food Provisioning
MCHN	Maternal Child Health and Nutrition
MISAU	Ministry of Health
Mt	Mozambican currency (Meticais)
MYAP	Multi Year Assistance Program
NGO	Non-Government Organization
NRM	Natural Resources Management
OFSP	Orange-Fleshed Sweet Potato
PARPA	Action Plan for Reduction of Absolute Poverty
PEN	Strategic National Plan
PLWHA	People Living With HIV AIDS
PPS	Probability Proportion to Size
RMC	Risk Management Committee
SO	Strategic Objective
US	United States
USAID	United States Agency for International Development
WAZ	Weight for Age Z score
WHO	World Health Organization
WHZ	Weight for Height Z score
WV-Moz	World Vision Mozambique

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1. INTRODUCTION

OCLUVELA is a three-year integrated Multi-Year Assistance Program (MYAP) funded by USAID Food for Peace in eight districts of Zambezia Province, Mozambique. The project began in July 2008 and will run through June 2011. Total life of project funding is estimated at \$15 million. OCLUVELA is implemented by World Vision Mozambique in collaboration with International Relief Development (IRD), and government agencies (provincial/district directorate of agriculture and health). The main goal of the project is to reduce food insecurity in the targeted population of eight districts in Zambezia province through the use of an integrated approach that addresses the multi-sectoral causes of food insecurity. The program addresses the unique nature of food insecurity in the area: chronic food insecurity coupled with vulnerability to external shocks.

The purpose of the baseline survey was to establish baseline values for key identified program indicators. These values will provide a foundation that Word Vision Mozambique will use to establish targets against which it will measure performance and impact of the three-year program. If necessary, World Vision can also use the baseline as an opportunity to revisit and improve upon program design strategies and approaches.

1.1 Background

One of the last countries in Africa to become independent, Mozambique won independence from Portugal in 1975. Immediately following independence, a protracted civil war ensued. The 1992 Rome Accords brought peace, but nearly sixteen years of war left the country in shambles. However, since the end of the war, Mozambique has enjoyed a stable government, opening the door for economic growth and repair of the institutions and systems that suffered due to the civil war. Favourable geographic characteristics, including the longest coastline on the African continent, and a relatively high proportion of arable land have also fostered the development process. The Action Plan for Reduction of Absolute Poverty (PARPA) reports that Mozambique

experienced a 15% reduction in poverty since 1996. In 1996, about 69.4% of the population lived on less than one US dollar per day. By 2004, this percentage had dropped to 54.1% of the population.

The infant mortality rate has improved from 158 per 1,000 live births in 1990 to 96 per 1,000 live births in 2006 (www.unicef.org). Still, 40% of children under five remain chronically malnourished⁴, and access to potable water remains alarmingly low. About 24% of the households in Mozambique have access to piped water while 42% use water from unprotected sources (QUIBB, 2000⁵). There has been tremendous economic growth, but this growth is relative to an extremely low base. Until 1999, despite rapid economic development and expansion, Mozambique remained, officially, the poorest country in the world.

Although the end of the war provided a landscape for improvement in many areas, including increased trade, transport and exchange with neighbouring countries, the negative impact of increased mobility has been a subsequent spike in the HIV/AIDS prevalence, especially along the country's transportation corridors. From 1987 to 2004, the prevalence of HIV/AIDS skyrocketed from 2.0% to 16.2% (CNCS⁶).

Additionally, Mozambique is vulnerable to seasonal natural shocks, most notably drought or flooding, which erase hard-won gains in development and food security in an instant. One historian characterized the repercussions of cyclic external natural shocks in Mozambique in this way:

“The flood itself was an overwhelming external catastrophe, which Mozambicans themselves could not control, and which literally swamped the country's painstaking plans for development.... tentative steps towards greater self-sufficiency were wiped out.”⁷

⁴ Chronically undernourished refers to *stunting* or (height for age z-score <-2).

⁵ QUIBB- Questionnaire on Basic Indicatorws on Wellbeing. Government of Mozambique. National Institute of Statistics 2002.

⁶ CNCS- Conselho Nacional de Combate Nacional a SIDA (national coordinating body on HIV/AIDS).

⁷ Chabal, Patrick. A History of Postcolonial Lusophone Africa. Indiana University Press, 2002.

Zambezia province, aptly named for its location bordering the Zambezi River, is one of several provinces most prone to flooding. This is also the province where World Vision Mozambique is implementing OCLUVELA. During 2008, floods affected about 30,000 households in the Zambezi valley (including the provinces of Manica, Sofala, Tete and Zambezia). Over half of these, or about 16,445 households, were in Zambezia province (INGC Bulletins, 2008⁸).

1.2 Areas Covered by the program

World Vision's Title II MYAP, OCLUVELA, meaning hope in the local language, targets eight food insecure districts in Zambezia province—four districts in the Northern part of the province⁹ and four in the South, separated by an area not included in MYAP activities. Although Zambezia is the most populated of Mozambique's provinces it is isolated and remote. One of the consequences has been relatively poor access to social services, including health, education and agriculture. Target districts for this project are among the most poor and vulnerable in Zambezia, and were selected based on key indicators¹⁰.

There are cultural and demographic differences between the two distinct MYAP target areas. The predominant ethnic group in the Northern districts is the Lomwe people, while in Southern districts the main groups are the Sena and Chuabo. The terrain in Northern Zambezia is hilly, at a higher elevation, and is conducive to farming maize, millet, cowpea, soybean, and sesame. Sesame and maize are the primary crops cultivated for export. The Southern districts are at low elevations and have sandy soils. The main staple crops in the Southern districts are cassava and maize. The principal cash crops are cotton and sesame.

⁸ INGC-National Institute of Management of Calamities. Bulletin 6, 2008. Ministry of Public Administration.

⁹ The districts in the north are Alto Molocue, Gile, Gurue, and Namarroi. The districts in the south are Namacurra, Nicoadala, Mopeia, and Morrumbala.

¹⁰ These include prevalence of stunting, annual household income and level of vulnerability to risk, in addition of current World Vision or IRD presence.

1.3 Program Objectives

Based on the analysis of food insecurity in Mozambique that recognizes the problem as both chronic in nature as well as vulnerable to shocks, OCLUVELA is guided by a “Development-Relief” (DR) approach. Consistent with DR principles, World Vision’s Integrated Resiliency Continuum Approach addresses both the underlying chronic causes of food insecurity in Mozambique, as well as the acute symptoms of food insecurity. The Integrated Resiliency Continuum Approach targets vulnerable households using linked interventions in the areas of maternal and child health and nutrition (MCHN) and agricultural production/marketing.

1.4 Strategic Objectives (SOs), Intermediate Results (IRs) and Program Participant Targets

Goal	Strategic Objectives	Intermediate Results (IR)
Goal: Reduced Food Insecurity in Target Populations	SO 1: Household livelihood capacity protected and enhanced	IR 1.1: Increased agricultural production and marketing for households and associations
		IR 1.2: Strengthened small-scale enterprise development
		IR 1.3: Improved private sector linkages
	SO 2: Human capabilities protected and enhanced	IR 2.1: Improved nutrition and health practices among children under five years of age, with special focus on 0 to 24 months
		IR 2.2: Improved nutrition and health practices among pregnant and lactating women
		IR 2.3: Improved nutrition and health practices among people living with HIV/AIDS (PLHIV) and chronically ill
	SO 3: Community resilience protected and enhanced	IR 3.1: Facilitate community-based risk management systems

1.1.1 Program Activities

To foster synergies and integration, various activities and target beneficiary groups are not necessarily aligned or organized by strategic objective. Rather; a group involved in activities

under SO2 may also, for example, be targeted for specific interventions falling under SO1 and SO3. Main activities under each strategic objective include:

1.1.2 *Strategic Objective 1:*

- Seed multiplication, especially of new varieties (orange-fleshed sweet potato (OFSP), soybeans, hybrid maize, vegetables)
- Promotion of inputs usage through extension services and farmer field schools
- Introduction of animal traction (20 pairs to be introduced)
- Promotion of irrigation by building small dams (14 planned)
- Promotion of improved storage facilities and marketing.
- Link and support farmers associations (FA) with large and medium scale traders
- Train farmers associations (FA) in literacy and business skills

1.1.3 *Strategic Objective 2:*

- Promote optimal young child feeding practices (exclusive breastfeeding and appropriate complementary feeding, health care, and hygiene practices)
- Through mothers' group volunteers identify and rehabilitate children under five at risk of malnutrition or already malnourished
- Teach caregivers to use home gardens as a means of increasing dietary diversity
- Conduct home visits for people living with HIV/AIDS and the chronically ill to promote appropriate health and nutrition practices

1.1.4 *Strategic Objective 3:*

- Mobilize and collaborate with communities to create Risk Management Committees (RMC), and provide them with trainings on community-based risk management strategies
- Establish surveillance/early warning system in the communities
- Support development of community disaster preparedness plans and facilitate simulation drills
- Support RMC and government authorities in preparation and dissemination of early warnings information and response mechanisms

1.5 Indicators Collected by the Baseline Survey

The indicators in the baseline were selected to fulfill various Program reporting and documentation objectives. First, they present the information necessary to indicate whether or not the outcome and impact indicators targeted by World Vision's MYAP have been met. Second, they fulfill the USAID/DCHA/FFP guidance on indicator selection as per the PL-480 Title II Guidelines as well as ensure alignment with FFP PMP Indicators. Third, they comply with the USAID Mission's own reporting requirements and with the USAID Mission's own Performance Monitoring Plan. Impact and annual monitoring indicators for each strategic objective, along with corresponding baseline and target values are located in the Indicator Performance Tracking Table (IPTT) in annex 6.5, 6.12 and 6.19).

2. SURVEY METHODS

2.1 Description of the Methodology

2.1.1 Selection and Training of Interviewers

This Baseline study was developed applying a type I design study. World Vision Mozambique selected 27 interviewers from those who have performed well in the previous OVATA Title II surveys. From the total number of interviewers, three were WV Mozambique staff and the rest were outsiders. Interviewer training was held for five working days from October 24th to October 28th, 2008. The first three days were allocated to the project overview, project objectives and questionnaire interpretation. On the following day, the interviewers conducted a field test with the questionnaire, this for training purposes and to validate the questionnaire. Two sites: Curungo and Nassorela were selected for the field test. The last day was used for field questionnaire discussion and the sampling procedures.

Two days were allowed for the teams to organize themselves and depart to the sites. Data collection began on November 1, 2008, and finished on November 16th. The three trained WV staff, as well as two of the most skilled interviewers were appointed as field supervisors. The rest of the interviewers did data collection in the households, as well as collected the anthropometric data of children under 5. Each interviewer completed seven questionnaires per day, for sixteen days. Each questionnaire took from 45 minutes to an hour to be completed.

2.1.2 Sampling and Instruments

The total sample of the households was determined using the illustrative sample calculations based on proportions and on the power parameter for the key agriculture and health impact indicators such as underweight, stunting and improved agriculture practices. Therefore, considering that 5 per cent decrease is aimed at the end of the project and based on the initial (final OVATA evaluation) indicators on the same variable, the mathematical programming

estimated that a total 1710 households are the minimum sample size with a total of 61 clusters of 28 interviews in each cluster.

The number of communities sampled in each district was determined using the probability proportional to size (PPS) methodology based on data from the 2007 population census. Thus, more communities were sampled in districts with higher populations. A complete list of all communities can be found in Annex 1. Sixty-one communities were selected randomly. The number of communities surveyed in each district is shown in the Table 2-1 below.

Table 2-1 Number of communities surveyed and the number of households interviewed in each community per district

Zone	District	Total Population (2008 census)	Number of Communities Surveyed	Number of Households interviewed	Proportion of Total sample
Upper Zambezia	Alto Molocue	23,004.00	10	241	14.7
	Gilé	18,200.00	9	252	15.3
	Gurue	20,073.00	10	279	17.0
	Namarroi	15,223.00	8	218	13.3
Lower Zambezia	Mopeia	7,908.00	3	83	5.0
	Morrumbala	17,160.00	9	248	15.1
	Namacurra	24,106.00	6	156	9.5
	Nicoadala	15,456.00	6	167	10.2
Total		141,130	61	1644	100

For the selection of the households, in each community, the interviewer teams randomly selected one household using the full list of members living in that community. At the first house, an interviewer spun a pen and followed the direction the pen pointed to interview a total of 28 houses in each community.

A paper printed semi-structured questionnaire and a pencil was used to fill the questionnaires. The survey questionnaire was comprised by eleven sections (sections A to K). On the First section, the community and respondent were identified. Section B describes the head of the household and his/her spouse. The quantities produced and commercialized of basic crops (maize, cassava, orange-fleshed sweet potato and sweet potato) are presented in Section C. Section D asks questions about the household access to inputs and other agricultural services.

Section E questions the household's participation in the world Vision and Non World Vision projects. Section F deals with animals and well being indicators, while in the next section (G), food security and coping strategy issues are investigated. In section H, access to Vitamin A and infant feeding practices are addressed. In the section I, specific questions for children between 6 to 23 months are asked. Section J, refers to questions for children zero to 59 months. Here, all questions related to children are expected to be answer. In the last section, the anthropometric data of all children 0 to 59 months of sampled household was registered. The survey questionnaire is attached in the annexes section (Appendix 1).

2.1.3 Data Entry and Cleaning

The data entry process took 12 days and was done by three data entry clerks. Each data entry person entered 30 to 40 questionnaires per day. The Monitoring and Evaluation Coordinator ensured data were entered properly and maintained the quality of the data entered. Microsoft office Access 2007 was used to enter data.

During the field work and the data entry process, due to data quality issues and questionnaires with missing information, some data were missing and some questionnaires had to be deleted. Table 2-2 below shows the difference between the data that should have been collected and the data that was entered and analyzed. Finally, 1644 questionnaires were analyzed rather than the previous number of 1708 estimated in the sample size (61 communities by 28 questionnaires). That means a loss of 4% of total sample.

Desegregation per district shows that Gurue district contributed with the highest number of interviewed households (279). The district with the lowest number of households was Mopeia, with 83 households representing 5% of overall sample.

Table 2-2 Differences between the number of questionnaires collected and entered and the number of questionnaires analyzed after data collection and data cleaning

Zone	District	Number of Communities Surveyed	Total questionnaires collected and entered	Total questionnaires analyzed	Proportion of Total sample
Upper	Alto				
Zambezia	Molocue	10	280	241	86.07
	Gilé	9	252	252	100.00
	Gurue	10	280	279	99.64
	Namarroi	8	224	218	97.32
Lower	Mopeia	3	84	83	98.81
Zambezia	Morrumbala	9	252	248	98.41
	Namacurra	6	168	156	92.86
	Nicoadala	6	168	167	99.40
	Total	61	1708	1644	96.25

Excel and SPSS were used to do the data cleaning, and statistical analysis was completed using SPSS version 15 and EpiInfo version 3.14. EpiInfo's EpiNut was used to calculate the z-scores for anthropometric indices using the 2006 WHO growth standards.

2.2 Demographic Characteristics of Respondents

The demographic characteristics of the respondents are presented in the Table 2-3 below. About 1644 survey questionnaires were analyzed for this study. The majority of respondents are in the Northern region (990) while the rest (654) are in the Southern Mozambique. Comparison on gender shows that the survey involved 53.2% of male and 46.8% of female respondents. The differences between female and male respondents are higher in the Northern region where about 56% of households interviewed were male while 44% were female. In the Southern area, about 53% of interviewed households were male and 47% were female.

The survey showed that about 94% of the households were in the age range between 18 to 59 years of age. The average age of the heads of household interviewed during the survey was 36 years of age. About eight household heads (representing 0.5%) were less than 18 years of age. The rest, 5.5% of households, were 60 years of age or older.

When asked about the abilities of the household heads in terms of writing and reading in Portuguese, about 46% of the households reported being able to read and write in Portuguese. Desegregation per region shows that the Northern region has the higher percentage of households with ability to read and write in Portuguese (51%) than the Southern region (38%) (Table 2-3).

Table 2-3 Characteristics of the interviewed households per gender, age, and ability to read and write

Zone	Number household Interviewed	Gender		Age			Ability to read and write in Portuguese
		Male	Female	<18	18 - 59	60+	
North	990	55.8	44.2	0.5	93.9	5.6	51.3
South	654	49.4	50.6	0.5	94.0	5.5	38.1
Total sample	1644	53.2	46.8	0.5	94.0	5.5	46.0

The households were also classified based on their level of literacy. The results show that the majority of Households are either illiterate or have attended just a primary school level. As the level of literacy increases, the number of households completing higher levels decreases. The Table (2-4) below shows that about 44% of respondents do have any form of education and about 44 could not finish a primary school level. Differences between Northern and Southern regions are not significant.

Table 2-4 Interviewed households according to their level of literacy

Region	B2 schooll hh head						
	Illiterate (No formal school)	Primar y school attende d	Primary school complete d	Seconda ry school attended	Secondar y school complete d	Technical school attended	Technical school concluded
North	40.2	43.7	12.0	2.1	1.6	0.1	0.2
South	49.4	43.1	5.7	1.2	0.6	0.00	0.00
Total sample	43.9	43.5	9.5	1.8	1.2	0.1	0.1

Variables such as roofing and wall materials on respondent houses were used as proxy for socioeconomic status. Over 90% of household had houses with roofs made of straw of grass,

and walls made with mud bricks, indicating a very low socioeconomic status, even relative to other regions of Mozambique. Over 98% of households had used mud bricks or sticks as the main building material for the walls of their dwellings (Appendix 6-1 and 6-2).

When asked about the source of drinking water used by the household members, the majority of respondents reported using water from unprotected source or borehole (68% of overall sample). The difference between the percentages of households having access to potable water is higher in the South than in the North. About 78% of respondents in the North do not have potable water. The proportion of households using water from unprotected source is relatively low at 52% (Table 2-5). As the data show, in targeted districts, more than half of respondents do not have access to potable water and drink water from rivers, lakes and open holes. This might be associated with the incidence of cholera, diarrhea and other water and sanitation related diseases in Zambezia.

In terms of hygiene and sanitation, interviewed households were found to be vulnerable to some sicknesses. The majority of households do not have sanitation (Table 6-4 in Appendix 2). About 69% of the households in the total sample do not have access to latrines. The percentage of households without sanitation facilities is higher in the Southern Zambezia (73%) than in those districts on the North (66%) (Table 2-5).

Table 2-5 Household living conditions

Region	% of HH with house roof covered by grass	% of HH with walls made of mud bricks/sticks	% of HH drinking water from unprotected source/borehole and river	% of HH using pit toilet (latrine)	% of HH defecating at open sky (unattended)
North	93.0	98.90	78.40	32.60	65.6
South	89.0	97.50	51.80	21.4	73.4
Total sample	91.42	98.30	67.90	28.2	68.7

In the next section, the agriculture and food security of the interviewed households will be discussed. The section looks at the household's food production, consumption and the access and utilization of improved agricultural services.

3. AGRICULTURE AND FOOD SECURITY

3.1 Food Production

Agriculture production was analyzed in terms of capacity of farmers in providing food security for their households. Three main crops were investigated: maize, cassava and sweet potato. Maize is important for its contribution for the food security of the household, as well as income stabilization (can easily be stored and sold). Cassava is resistant to drought and is important for drought prone areas such as those of lower Zambezia. Sweet potato is also important for food security and nutrition if farmers grow orange-fleshed sweet potato (OFSP) high in vitamin A.

Table 3-1 shows that more than 80% of households produced maize, while about 45% of households sold maize. Throughout the project area maize is the most important crop in terms of food security and sales. The percentage of households producing and selling maize is higher in Northern districts than in the Southern districts.

Cassava was cultivated by almost 80% of the households during the 12 months prior to the survey (Table 3-1). Dried cassava (Magagada) is also sold for income. The proportion of households selling cassava was higher in Northern Zambezia when compared to those living in the South. Only 17% of the households sold cassava in the last 12 months prior to the survey. Cassava is however very important to food security as evidenced by the 69% of respondents in Southern Zambezia who grow it. Most of these respondents cultivate cassava on very sandy soils.

The proportion of households cultivating sweet potato is considerably higher. About 35% of the households cultivated sweet potato during the year prior to the survey. As opposed to other crops, sweet potato was reported to be produced and sold by a significantly higher proportion of households in the South than in the Northern region (14.5% and 5.2% respectively) (Table 3-1). The majority of households in Zambezia cultivated white sweet potato compared to orange-fleshed sweet potato. About 35% of households in Zambezia produced white sweet potato while

only a tenth of households produced OFSP during the season previous to the baseline interview. Across the province there are similar number of households producing and selling OFSP.

Average prices for basic food crops sold by the farmers were investigated during the survey. Table 3-1 shows that average prices per kg of basic crops were quite similar during the 12 months prior to the survey. The average price per kg of maize was 5Mt per kg. Cassava and OFSP was sold at a price roughly 5 Mt per kg, while sweet potato sold more (7 Mt per kg). While the average price of sweet potato coincides with the average price of sweet potato collected monthly by the orange-fleshed sweet potato project of 5.9 Mt per kilogram, the prices for OFSP reported on this baseline are slightly different than those reported on other OFSP surveys. Prices for OFSP form other World Vision Projects are higher (10 Mt per kg).

Table 3-1 Household production and market price, by crop, during the 12 months prior to the survey

Crop	Maize	Cassava	OFSP	Sweet Potato	Average price for maize	Average price for cassava	Average price for OFSP	Average price for Sweet Potato
NORTHERN ZAMBÉZIA								
Produced	88.8	82.4	9.5	22.7				
Sold/Price (Significance)	58.0	34.3	3.6	5.2	4.12*** (0.000)	3.04 (0.017)	3.80 (0.647)	5.37 (0.524)
SOUTHERN ZAMBÉZIA								
Produced	77.1	68.8	11.6	54.1				
Sold (Significance)	24.6	17	4.7	14.8	7.34*** (0.000)	4.77 (0.017)	4.10 (0.647)	7.54 (0.524)
3.1.1.1 ACROSS ZONES								
Produced	84.1	77.0	10.3	35.2				
Sold	44.7	27.4	4.1	9.0	4.92	3.51	3.95	6.86

*** Significant differences at 1 percent level

** Significant differences at 5 percent level

These prices correspond to higher prices observed in 2008 from the “global food crisis”. Apart from the basic food crops, WV Mozambique’s aim is to introduce crops with short maturation period and with higher yields. The results in Annex 3-18 show that the level of adoption of new and improved varieties is low. Only 23.3 cultivated an improved maize variety. There are no

significant differences between the Northern and Southern regions. Butter beans (*phaseolus vulgaris*) are an important source of income, especially for households in Gurue and Alto Molocue (Appendix 6-6).

Roughly 16% of households cultivated butter beans in 2008. The majority of households producing beans are in Northern Zambezia (22%) as opposed to Southern Zamezia (8%). This is due to climate differences, as butter beans like cool weather. Cowpeas were produced by nearly 40% of the interviewed households. There are similar numbers of households cultivating cowpeas in the North and in the South. OFSPs (an improved variety) were more commonly produced by households in Southern Zambezia than those in the North. Improved rice was reported to be cultivated by the majority of the households in the Southern region. The Southern districts of Nicoadala, Namacurra and Mopeia have low lying rice producing areas. About 12% of households in lower Zambezia cultivated improved rice. Only 12% of households in the Northern Zambezia reported cultivating improved rice varieties. Finally about 15% of households cultivated sorghum during the past 12 months prior to the survey. There is a balanced proportion between the households cultivating maize in Southern and Northern Zambezia.

This survey focused on asking questions about the crops that world Vision is promoting. Table below (Table 3-2) shows the proportion of households cultivating new crop varieties on top of their usual crops, per district. The results show that Gurue is a leading district in terms of maize production. The other districts where maize production is high are Morrumbala and Alto Molocue. Curiously, most of households in Nicoadala reported cultivating new maize varieties. One household in five reported cultivating new variety of maize. Beans (*fejao vulgar*) are largely cultivated in Gurue (52% of households) and moderately cultivated in Alto Molocue, Morrumbala and Namarroi (16%, 12% and 11% respectively).

Mopeia, Nicoadala and Namacurra districts, all in Southern Zambezia have the least number of households cultivating common beans. Less than three percent of households that took the interview cultivate this crop in those areas. Morrumbala and Gurue lead the proportion of households cultivating cowpeas. About 20% of households in these districts cultivate cowpeas.

Namarroi district follows these two districts with about 14% of households cultivating cowpea. Alto Molocua and Nicoadala have moderate percentage of households cultivating cowpea. Just one in ten cultivated cowpea in those districts. In Mopeia, only three percent of interviewed households cultivated cowpea.

The orange-fleshed sweet potato has been adopted by farmers in Nicoadala, Gurue and Namacurra. About 25% of households in Nicoadala district cultivated OFSP. In Gurue, about 21% of households cultivated this crop. Surprisingly, few households in Alto Molocue have reported cultivating OFSP, regardless of OVATA being a program operating in that district for more than 5 years. Mopeia is again, a district where the proportion of households cultivating OFSP is the smallest (1%). Rice is the second most important cereal in Mozambique, following maize. The districts of lower Zambezia are those with the highest percentage of households cultivating that crop. About 25% of households in Namacurra reported experimenting new crop varieties on top of their traditional varieties. In Nicoadala, 16% of the interviewed households reported cultivating new rice varieties. Molocue in the upper Zambezia is the district with lowest percentage of households cultivating rice (Table 3-2).

Morrumbala is leading in terms of number of households cultivating sorghum. About 27% of households cultivated sorghum during the last season. Due to the OVATA agriculture program that introduced that crop in that specific district, the results are amazing. Sorghum has the advantage over other crops because it is resistant to drought.

Table 3-2 Proportion of households cultivating new crop varieties in addition to their traditional crops

District	Maize	Butter Beans	Cowpea	OFSP	Rice	Sorghum	Other (Sesame)
Alto Molocue	10.5	15.7	8.9	4.2	2.7	15.4	2.2
Gile	7.4	2.2	16.7	10.9	12.3	14.2	20.4
Gurue	30.3	52.4	19.5	21.4	12.7	22.1	32.8
Mopeia	1.8	1.9	2.3	1.0	5.1	0.8	2.2
Morrumbala	11.3	12.4	19.5	12.5	12.3	27.3	22.6
Namacurra	5.8	1.9	9.5	16.1	15.8	1.2	4.4
Namarroi	11.6	11.2	13.6	9.4	13.7	16.2	8.8
Nicoadala	21.3	2.2	9.9	24.5	25.3	2.8	6.6
All sample	23.1	16.2	37.0	11.7	17.8	15.4	8.4

Households were analyzed in terms of the willingness of a farmer to cultivate these crops on the coming season. The majority of households reported that they would cultivate these crops. Maize is the most preferred crop to be cultivated for the next coming month (Table 3-3).

Table 3-3 Percentage of households planning to cultivate new crop varieties on the coming year

	Maize	Butter Beans	Cowpea	OFSP	Rice	Sorghum	Other (Sesame)
Overall sample	80	63.1	81.4	60.6	57.1	56.9	23.1
Northern Zambezia	81.3	67.0	78.1	56.0	54.8	60.8	31.6
Southern Zambezia	78.0	57.2	86.4	67.6	60.4	50.9	10.2

Farmers were asked to estimate the total amount of crops harvested on their fields (*machambas*) during the farming season prior to the survey. Farmers reported their production in local units such as number of sacks or cans, and this was then converted to kilograms using a conversion chart. Maize had the highest yields (537 kg) per hectare, followed by cassava (390 kg per ha).

Production of local varieties of white sweet potato and orange-fleshed sweet potato was 120 kg per portion and 112 kg per portion respectively. Farmers in Mozambique cultivate potato in small portions, less than a hectare. It is estimated that the average dimensions of a portion devoted to potato is 10m X10m. However, it is important to mention that OFSP has slightly

higher production per hectare than white potato (Table 3-4). Yields per hectare of white potato and OFSP were investigated and experiments run by the OFSP team in Zambezia. Their reports concluded that the average yield for OFSP is 6000 kg per ha while the white potato have much higher yield per ha (15000 to 16000 kg per ha).

There were differences in production between the Northern and Southern districts, most notably for the production of cassava, where household production in the North was over double the amount in the South (202 kg/ha) (Table 3-4). Overall, farmers in the Northern districts produced more for the four crops in question; however, the farmers in the South produced slightly more potatoes (both OFSP and local sweet potato). Although land areas were not mentioned, these results are consistent with past surveys and point to very low productivity. OCLUVELA aims to increase productivity by disseminating best and improved practices and increasing the usage of inputs and agricultural produce. OCLUVELA will also work with farmers to develop the most productive and sustainable seed banks. It is expected that the project will increase the production levels up to 15 to 20 percent from the 2008 base (Appendix 6-5).

Table 3-4 Estimated total production of staple food crops per respondent farmer

Crop	Entire program area kg	Northern Districts kg	Southern Districts kg	Significance (North Vs South)
Maize (kg)	537.32	591.3	443.13	0.002***
Cassava (kg)	390.4	494.1	202.29	0.000***
Sweet potato (100m ²)	120.42	83.58	143.83	0.000***
OFSP (100m ²)	111.63	90.76	137.45	0.110

***Significant at 1% level

3.2 Inputs Usage

Farmers in the interviewed communities were investigated in terms of inputs usage. The main inputs studied were seeds, fertilizer, pesticides, labor force and any others that might be used (chemicals, fungicides, insecticides). The results (Table 3-5) show that about 61% of the households do not use any of the inputs investigated. About 26% use two of the inputs and only 0.5 percent (or 4 out of 1644 households) would use all of the inputs questioned.

Table 3-5 Use of inputs by household

	Frequency	Percentage
None of inputs	997	60.6
Any single	433	26.3
Any of two	157	9.5
Any of three	40	2.4
Any of four	13	.8
All inputs	4	.2
Total	1644	100.0

When analyzing the farmers in terms of usage of different types of inputs, the Table 3-6 shows that seeds and labor are the most important inputs in Zambezia. About a third of the interviewed households reported demanding seeds for purchase. One in ten households would hire outside person to help with the labor activities. Fertilizer and pesticides are not preferred among the sampled households. This might be due to unavailability of these inputs or because farmers do not have money to purchase these expensive inputs. The differences between the Northern and the Southern farmers are not significant for all the analyzed inputs, but seeds. Seeds were purchased more in the South than in the Northern region. About 16.3% of households in the Northern districts purchased seeds during the season before the survey. On the other hand, about 49% of those in the South purchased seeds (Table 3-6). The majority of farmers in the South sought seeds because the soils are poor and the harvests in those areas are often poor at a point that every year, a farmer is found in the position of purchasing seeds because of lack of seeds for the following season.

Table 3-6 Households inputs per region

	Inputs	Seeds	Fertilizer	Pesticide	Labor Force	Other
Overall sample	Yes	29.3	1.3	1	10.8	8.6
	No	70.7	98.7	99	89.2	91.4
Northern Zambezia	Yes	16.3	1.5	0.5	11.2	12.9
	No	83.7	98.5	99.5	88.8	87.1
Southern Zambezia	Yes	48.9	0.9	1.8	10.2	2.0
	No	51.1	99.1	98.2	89.8	98.0

3.2.1 Analysis of Input Usage per Crop

The value spend by the households on each crop was analyzed. Table 3-7 below shows the average value used to purchase the inputs used in the process of cultivation of the basic food crops. The figures show that farmers used most of their resources for maize and other crops (cash crops such as sesame). Farmers reported allocating as much as 327.25 meticaïs for maize production to purchase inputs such as seeds, fertilizers, pesticides, labor or other production inputs. Similarly, farmers also spent sizable amounts for the production of cash crops and vegetables. The survey shows that as much as 275 Mt was used during the process of cultivation of cash crops and vegetables. Orange-fleshed sweet potato and sweet potato were the crops with least investment, but it could be because of the small land area devoted to these crops.

Table 3-7 Average quantity of inputs used by the households producing those particular crops per region

Crop		Average value on inputs	Number of Observations	Significance
Maize	North	393.10	179	0.187
	South	273.42	219	
	Total	327.25	398	
Cassava	North	179.02	56	0.351
	South	239.93	45	
	Total	206.16	101	
OFSP	North	329.14	21	0.287
	South	115.32	31	
	Total	201.67	52	
Sweet Potato	North	84.64	14	0.410
	South	117.31	83	
	Total	112.60	97	
Other crops (sesame, beans)	North	463.11	112	0.011**
	South	155.32	179	
	Total	273.79	291	

** Significant at 5% level

3.2.2 Analysis of Inputs Usage per Item

Households we investigated in terms of quantities of money spent per each single input for specific crops. The results (Table 3-8) show that households spend a great deal on labor and seeds. About 178 households reported using some money on labor. The average amount of money used is 697.70 Mt with the highest amount being used in the South. Nevertheless, there are no significant differences between the expenditures in the South and in the North.

Furthermore, households also reported using money for purchase of seeds. Among 1644 interviewed households, about 481 reported purchasing seeds for the 2009 agricultural season. Average amount of money spent was 158 Mt. Farmers in the South spend higher amounts of money (171.89 Mt) than their counterparts in the North (130.84 Mt). The rest of the farmers relied on seeds from the previous yields (Table 3-8).

Fertilizers were the most expensive inputs used and were used by a minority of the households. About 21 households spent money on fertilizers during the 2007/2008 campaign. This represents just 1 percent of households from overall sample. The average amount of money used was 1268.33 Mt with the households in the North using higher amount (1738.6) and those in the Southern Mozambique using lower amount (92.68) (Table 3-8 below). The fact that World Vision and other NGOs are implementing cash crops, such as sesame and cotton, in these areas make those households rely on inputs for yield increase. When it comes to usage of pesticides, just 17 households reported using pesticides. The average amount spent on pesticides, by farmer, was approximately 147 Mt (Table 3-8).

Table 3-8 Average value spent on inputs (in Meticaïs)¹¹

Region	Seeds	Fertilizer	Pesticides	Labour	Other
Number of observations	481	21	17	178	141
North	130.84	1738.6	299.4	633.24	169.18
South	171.89	92.67	82.67	804.49	108.15
Average for total sample	158.15	1268.33	146.41	697.70	163.55
Significance	0.186	0.03**	0.174	0.360	0.185

** Significant at 5% level

¹¹ 1 USD corresponds to 27 Mozambican meticaïs)

3.3 Marketing

Marketing of crops is important for the household income. The statistical data show that in Mozambique, about 80% of the farmers are small farmers cultivating in areas less than 2 ha (CAP 1999/2000¹²). Maize continues to be the most important crop when compared to cassava and potato. An average of 120 kg was commercialized by household in the targeted districts (Table 3-8). There are slightly higher quantities per household in the Northern districts than in Southern Zambezia. This is correlated with the average production per hectare in these two regions. Cassava is commercialized either fresh or dried. The average quantities of cassava sold was 95 kg with the highest quantities per ha in the North. Farmer households marketed an average of 62 kg of sweet potato and 62 kg of orange-fleshed sweet potato. An important point is the fact that in the South, no farmer reported selling this crop. In all cases, the standard deviation of average quantities is higher in the North than in the South, meaning that differences in terms of quantities sold between the lowest and the highest quantity are bigger in the North (Table 3-9).

Table 3-9 Average quantity of crops sold in kilograms at provincial level and by region

Crops	All sample (Std deviation)	North (Std deviation)	South (Std deviation)	Significance
Maize (kg)	116.69	118.45	100.06	0.616
(Std deviation)	(22.00)	(49.84)	(0.00)	
Cassava (kg)	94.22	94.83	77.56	0.404
(Std deviation)	(28.47)	(28.81)	(2.73)	
OFSP (kg)	62.29	62.29	---	---
(Std deviation)	(35.67)	(35.67)		
White Potato (kg)	62.47	52.49	72.44	0.423
Std deviation)	(19.95)	(28.21)	(0.00)	

The total amount of money earned by households selling crops (maize, cassava, sweet potato and orange-fleshed sweet potato) was investigated. The average amount of money received was 677 meticais. There is a high standard deviation for the average amount of money which means that the average is heavily affected by the households who have commercialized small quantities of produce. Those farmers in the North have a higher average income from crop sales per household than those in Southern Zambezia. Farmers in the North have an average income for

¹² National Institute of Statistics. Agriculture and Animal production Census 1999-2000. Maputo, July 2002

the four crops, of 757 Meticais, while their counterparts in the South have an income of 570 Meticais (Table 3-10). The number of households selling at least one of the food crops (1536) is lower than the total number of interviewed households (1644). This means that there are 108 households who did not sell any of the mentioned crops.

Table 3-10 Average profit in Meticais made from food crops (Maize, cassava, white potato and orange-fleshed sweet potato)

		N	Mean (Mt)	Std. Deviation
Value for all crops	All sample	1536	677.9	1703.1
Value for all crops	North	889	756.5	1552.5
Value for all crops	_ South	647	569.9	1886.5

3.4 Marketing Period

The survey measured the percent of farmers who had stocks to sell during the rainy season, which is the period before the next harvest and when access and availability of food is the lowest. Thus, those farmers who are able to sell their produce during the rainy season enjoy a higher level of food security because they are able to feed their household, and also take advantage of high prices. In general, few farmers sell their crops in the rainy season (Table 3-11). Only four percent reported selling maize during the period from January to March. Three percent sold beans and peanuts, three percent of the interviewed household sold roots and tubers, three percent sold vegetables such as tomato, onion, garlic, eight percent sold fruits and five percent of households reported selling cash crops.

The percentage of households selling fruits is high during January to March because that is a period when mango ripe and households have more fruits available to sell. The period of July to September is the period when the households have harvested some crops. Maize is normally harvested from April to May, with selling commencing in June after further drying. Other crops such as sorghum are harvested in June. About half of the interviewed households reported selling maize or other cereals in the period of July to September. Roots and tubers, especially cassava, sweet potato and orange-fleshed sweet potato were reported to be sold by 48% of the households (Table 3-11). Cash crops such as sesame, soybean, were marketed during the period of April to September. Fruit and vegetables are commonly sold from October to December,

especially mango. Most households in the visited communities reported selling fruits and vegetables (Table 3-11).

Table 3-11 Households selling groups of crops by time period

Crop	Region	Oct-Nov- Dec	Jan-Feb- Mar	Apr-May- Jun	Jul-Aug- Sept
Cereals (Maize, rice, sorghum, millet)	North	30.9	3.1	19.5	46.6
	South	11.8	7.6	47.1	33.5
	Total	26.6	4.1	25.7	43.7
Beans and peanuts	North	39.9	2.4	14.7	43.0
	South	10.4	6.0	55.2	28.4
	Total	36.20	2.9	19.9	41.1
Roots and tubers (cassava, potato)	North	40.7	2.4	8.3	48.7
	South	41.4	1.3	10.5	46.7
	Total	40.9	2.0	9.0	48.1
Vegetables (Tomato, lettuce, Onion)	North	25.8	4.0	38.6	31.7
	South	28.7	1.9	28.7	40.7
	Total	27.30	2.9	33.5	36.4
Fruits	North	45.9	8.8	16.4	28.9
	South	54.0	6.3	11.1	28.6
	Total	48.20	8.1	14.9	28.8
Cash crops	North	17.6	8.2	34.1	40.0
	South	7.0	2.6	41.2	49.1
	Total	11.60	5.0	38.2	45.2

3.5 Access to Inputs and Services

Access and utilization of inputs are needed for improved efficiency and high returns in agriculture. However, limited availability of agricultural inputs continues to constrain the yields in Zambezia. This survey investigated the proportion of people with access to inputs and other agricultural services. The results in Table 3-1 show that only 19% of households have irrigated lands. The proportion of households having irrigated land is higher in Southern Zambezia than in the North. This is probably due the relatively large proportion of farmers living along the Chire and Zambezi rivers in Morrumbala and Mopeia.

Less than a third of interviewed farmers had contact with an extension agent. About 10% of farmers in the North reported being visited by an extension agent in the past 12 months prior to the survey. The number of farmers being visited by extension agent was double in the South.

About 23% of farmers were visited during the same period. This is probably due to the emergency programs along the Chire and Zambezia rivers and more NGOs are working in those areas benefiting the localization close to capital.

Few households use fertilizers and pesticides in Zambezia. The data show that only three percent and four percent reported using mineral fertilizer and pesticides on their fields respectively. Most of the fertilizer used goes to tobacco, onions, and other vegetable production

In order to achieve food security, storing food crops is important. The OVATA project has widely succeeded in advising farmers to store their produce for the minimum consumption requirements needed by the household. About 80% of households reported storing their produce for a period longer than 6 months (Table 3-11). The number of households storing their produce is higher in the North. This is because the North is characterized by high yields for the majority of crops (maize, beans, cassava). About five percent of interviewed farmers have stored their cereals on an improved storage facility such as grain silo, metal tanks, or have used acetylic to conserve cereals. Few households use improved shelling methods in Zambezia, especially for maize. Farmers still rely on traditional methods such as beating crops with sticks or using their thumbs to separate the cob with a kernel. During the survey, farmers were interviewed about the method used to shell maize. The answers suggest that only 2% shell using an improved method. There are no significant differences between the North and the South (Table 3-12). This project will emphasize the use of improved maize shelling methods. The project expects to increase the percentage of farmers using improved shelling methods from less than one percent to a target of 10 percent of the households (Appendix 6-7).

Table 3-12 Household access to services during the 12 months prior to the survey

Service/input	Total Program	Northern	Southern
	Area %	Districts %	Districts %
HH irrigating crops	12.3	8.0	19.0
HH with contact with an extension agent	15.4	10.5	22.8
HH using fertilizers	3.0	3.9	1.5
HH using pesticides	3.9	5.1	2.1
HH using animal traction to plow land	1.5	1.4	1.7
HH using improved mode of transport	23.3	22.2	24.9
HH storing food crops for a period longer than 6 months	78.9	85.7	68.7
HH using improved storage facility (silo, metal tanks, acetylic)	5.3	10.0	5.1
HH using improved shelling methods	2.10	1.1	3.5
HH using acetylic to protect cereals	3.0	3.3	2.4

3.6 Mode of Transport of Basic Crops

In the Table 3-13 the main type of transport used by the farmers was investigated. The majority of households (77%) transport their produce on their head. There are no significant differences between the number of households using a mode of transport in lower Zambezia and in higher Zambezia. The other mode of transport widely used is bicycle. About 23% of the households in the overall sample used this mode to transport crops. Again, there are no significant differences between the households in the North and their counterparts in the South. All other modes of transport were used by less than one percent of households. The figures show that farmers in Zambezia do not have transport available to move large quantities of produce necessary in a commercial economy.

Table 3-13 Household mode of transport for crops

Mode of Transport	All sample	Northern Zambezia	Southern Zambezia
1. Head carrying	76.7	77.8	75.1
2. Push cart	.1	.1	0
3. Wheelbarrow	.1	.1	.2
4. Vehicle	.3	.4	.2
5. bicycle	22.5	21.3	24.3
6. Tractor	.2	.2	.2
7. Use of animal (pack//drawn/carts)	.1	.1	.2
7. Other	0	0	0
8. Total	100.0	100.0	100.0

Regarding the storage, about 80% of households have reported storing their produce for a period longer than 6 months, which is long enough for the harvested crops to start becoming scarce with corresponding increase in prices (Appendix 6-9). There are significant differences between households storing food crops between the Northern and the Southern region. While only 14% of households reported not storing food crops in the Northern Zambezia, as much as the double of that percentage of households did not store for a period longer than six months in Southern Zambezia. This emphasizes the fact that lower Zambezia is a food insecure region.

When asked what the type of storage was used by the household, the results show that households in Zambezia used traditional non reliable storage facilities. About 36% of the households reported storing their surplus on a small separate house of the main shelter (Table 3-13). The proportion of households storing food crops in a small store house with traditional roof was higher in Northern Zambezia than in Southern Zambezia. About 48% of households reported having small store houses in the North, while only one in ten would do the same in the South. Nevertheless, the most frequent storage facility in Southern Zambezia is small frame (like a bed) inside the main house. About 86% of the households reported using a small frame in the South. About 34% of households in upper Zambezia reported using the small bed facility to store crops.

Improved storage facilities are common in Northern Zambezia. About nine percent of the interviewed households reported using improved storage facilities such as brick storage, ‘gorongosa’ model storage or any other well built storage. However, only 0.2 percent of households in the Southern Zambezia had used the same storage facility (Table 3-14).

Table 3-14 Type of storage used by households to store cereals and beans

Type of storage	All sample	Northern Zambezia	Southern Zambezia
small store house with roof	35.5	48.2	11.4
small store house without roof	4.2	5.5	1.8
silo grain	.1	.1	0
improved storage facilities	6.1	9.2	.2
modern warehouse of brick and cement	.8	1.3	
small frame inside the house	52.3	34.3	86.2
Metallic Tank	.1	.1	
other (specify)	.9	1.2	.4
Total	100.0	100.0	100.0

Table 3-15 below summarizes the percentage of households using various techniques to reduce product losses. The results show that the most common method used to reduce losses of grain is smoke. About 40% of overall sample reported smoking the produce to reduce losses (Table 3-15). The percentage of households smoking the crops as prevention of insect infestation was higher in the Southern Zambezia (48.6%) than in the Northern (33%). Improved storage techniques such as use of silo grain or acetylic are used by a small proportion of households interviewed.

Table 3-15 Technique used by households to reduce loss of produce

Technique	All sample	Northern Zambezia	Southern Zambezia
Silo	2.3	2.7	1.5
Smoke	39.2	33	48.6
Dust	6.1	5.8	6.7
Chili	2.2	3.1	0.7
Acetylic	3.0	3.3	2.4
Other (dry, cover)	2.7	3.6	1.2

*especially grain

The method used by the sampled farmers to shell their crops was investigated. The respondents answered that the most common method use for shelling their crops is manually. About 67% of households reported separating the shells with the grain of the products using fingers or manually (Table 3-16). The majority of households that separate the shells with the grains using fingers are in the Northern region. About 79% of the households in Northern Zambezia used fingers or hand to do the shelling operation. Roughly half of that proportion used the same method for the

households in Southern Zambezia. Another common method used during the shelling process was beating crops with sticks. About 27% of households reported using sticks to beat the crops to separate the grains. More households in the South use the beating method than in the North. In the North, just one in five households used the beating method. In Southern Zambezia on the other hand, this percentage of households was almost 40% (Table 3-16). World Vision will work to increase the number of farmers using alternative and more efficient methods of shelling.

Table 3-16 Maize shelling methods used by households

Method/Instrument	All sample	Northern Zambezia	Southern Zambezia
hand/fingers/manually	67.2	79.3	48.8
free standing manually held shellers	.4	.4	.3
beat with sticks	27.5	19.6	39.4
use of feet	3.3	0	8.3
Other	1.7	.7	3.2
Total	100.0	100	100.0

3.7 Natural Resource Management

Out of seven possible resource management and conservation practices, farmers in the surveyed area reported adapting on average 2.49 practices. Farmers in the North reported using a higher number of NRM (approximately three) than those living in the South (approximately two). Conservation practices were most prevalent in the Northern districts, with the exception of erosion control methods such as planting in lines and minimal weeding, which was more common on the South. Curiously, erosion control was not mentioned as much in the North as it was mentioned in the South, regardless of the Northern region being the more hilly and mountainous. The practices mentioned most by farmers were avoiding burning (77.3%), followed by crop rotation with legumes (73.8%). The least used were dams to control water on fields and planting of vetiver or other grasses to control erosion (8.2%) (Table 3-17).

Table 3-17 Households who reported use of key conservation and natural resource management practices

Farming Practice	Total Program Area%	Northern Districts%	Southern Districts%
Crop rotation with legumes	73.8	77.1	68.8
Vetiver or other grass to control erosion	8.2	10.3	4.9
Allow land to fallow	45.7	53.9	33.2
Tree planting (>2 trees)	16.8	21.9	9.0
Other erosion control methods (line planting, minimal weeding)	24.9	19.3	33.3
Use dams to control water	2.5	2.9	1.8
Avoid burning fields	77.3	78	76.1
Number of NRM practices adopted	2.49	2.63	2.27

3.8 Household Food Security and Copping Strategies

3.8.1 Source of Income

Households were interviewed in terms of the main source of income. Income diversification is an indicator of more resilience to food shortage while those households with few sources of income are vulnerable to food shortage. Three main sources were investigated: the main source of income, the second most important source of income and the third most important source of income. Twenty-two income sources were investigated. The main categories are: production and selling of agricultural produce, production and selling of non agricultural produce, formal job, remittances, animal breeding, fishing, small informal business, brewing and selling of sticks or fire woods.

The results (Table 3-18) show that the production and selling of basic food crops, informal temporary job opportunities (ganho-ganho) and brewing of traditional drinks are the most important sources of income. About 44.95% of households in the North rely on production and selling of basic crops as a first source of income. Eleven percent also relies on cash crops such as cashew nuts, sesame, soybean and others (cotton).

In the South, production and selling of food crops and cash crops are the main important sources of income. However, collecting and selling of firewood has a weight into the household's economy. About 8% of the households reported this as a main source of income. The second most important sources of income are part-time jobs and production and selling of basic food crops. When it comes to a third source of income, the majority of the interviewed households both in the South and in the North reported having no third source of income. About 78% of households in the North reported not having a third source of income while in the South, as much as 63% gave the same answer.

Table 3-18 Household's source of income per region

	Source of Income 1		Source of Income 2		Source of Income 3	
	North	South	North	South	North	South
1. Production/selling of basic food crops	44.95	24.31	12.12	11.01	1.41	2.29
2. Production/selling of cash crops	11.01	6.88	5.76	7.95	0.61	2.91
3. Production/selling of vegetables	0.51	3.98	2.83	4.43	1.01	3.82
4. Production/selling of fruits	0.10	0.61	1.92	1.22	1.52	1.83
5. Collection/selling of grass	1.82	2.45	2.63	3.98	0.91	1.38
6. Part time job/ganho-ganho	8.59	19.57	13.33	17.74	3.94	5.81
7. Fishing/selling of fish	3.03	7.34	1.31	5.35	0.10	1.99
8. Livestock/livestock derivatives production and selling	1.72	2.45	3.43	5.50	2.02	2.91
9. Informal trade	3.74	2.45	3.74	3.06	1.31	0.61
10. Remittances	0.20	0.76	0.51	1.53	0.00	0.31
11. Collecting/Selling of firewood/vegetal coal/sticks	2.83	8.41	2.53	5.05	1.01	2.75
12. Brewing of traditional drinks	6.57	5.50	7.78	5.35	3.54	2.29
13. Transport business	0.20	0.15	0.20	0.31	0.10	0.00
14. Formal job	3.33	3.36	0.71	0.46	0.10	0.00
15. Selling of Building materials	1.11	0.76	0.40	0.46	0.00	0.15
16. Rental of animal traction	0.00	0.00	0.00	0.00	0.00	0.00
17. Pension	0.10	0.00	0.00	0.00	0.00	0.00
18. Informal small business	2.22	5.05	1.92	5.81	0.71	1.99
19. Formal small business	0.51	1.07	0.20	0.76	0.10	0.15
20. Art	0.81	1.83	0.61	1.99	0.20	0.76
21. Gifts	0.61	0.15	2.73	1.22	2.12	0.31
22. Others	4.65	2.75	5.56	1.38	1.52	5.05
23. No income	1.41	0.15	29.80	15.44	77.78	62.69
Total	100.00	100.00	100.00	100.00	100.00	100.00

3.8.2 *The Household Dietary Diversity Score (HDDS)*

The household dietary diversity score is part of the food access impact indicators required by FFP for the Title II programs. Household dietary diversity measures the number of different food groups consumed over a given reference period, and is a good proxy indicator because a more diversified diet is an important outcome on its own, and is also associated with other improved outcomes such as birth weight and anthropometric status. While individual dietary diversity is a proxy measure of the nutritional quality of an individual's diet, the HDDS is used as a proxy measure of the socio-economic level of the household.¹³ To better reflect the quality of the diet, the number of different *food groups* consumed is calculated, rather than the number of different *foods* consumed. Knowing that households consume, for example, an average of four different food groups implies that their diets offer some diversity in both macro- and micronutrients. This is a more meaningful indicator than knowing that households consume four different foods, which might all be cereals. The following set of 12 food groups was developed by FANTA team and is used to calculate the HDDS:

- A. Cereals
- B. Roots and Tubers
- C. Vegetables
- D. Fruits
- E. Meat, poultry, offal
- F. Eggs
- G. Fish and Seafood
- H. Pulses/legumes/nuts
- I. Milk and milk products
- J. Oils/fats
- K. Sugar/honey
- L. Miscellaneous

Total number of food groups consumed by members of the Household will be estimated using the following arithmetical formula ($HDDS = A + B + C + D + E + F + G + H + I + J + K + L$). Values for A through L will be either "0" or "1".

The household dietary diversity score was 4.68 over the entire sample population (n=1644) (Table 3-21). Diversity was greatest in Morrumbala and Nicoadala. The average number of

¹³ Swindale, Anne and Paula Bilinsky. *Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide (v.2)*. Washington, D.C.; Food and Nutrition Technical Assistance Project, Academy for Educational Development, 2006.

food groups eaten by the households in Nicoadala during the last two days prior to the survey was 5.19 while, households in Morrumbala ate an average of 5.10 food groups. Households in the districts of Gile and Mopeia ate 4.11 and 4.33 food groups respectively (Figure 3-1). The table generated for the calculation of the household dietary diversity score can be found in Appendix 6-7. The overall goal of OCLUVELA is to increase by an average of 15% the average HDDS of the targeted households, meaning that each household member will be accessing at least 6 food items after the promotion of food diversification (Appendix 6-5).

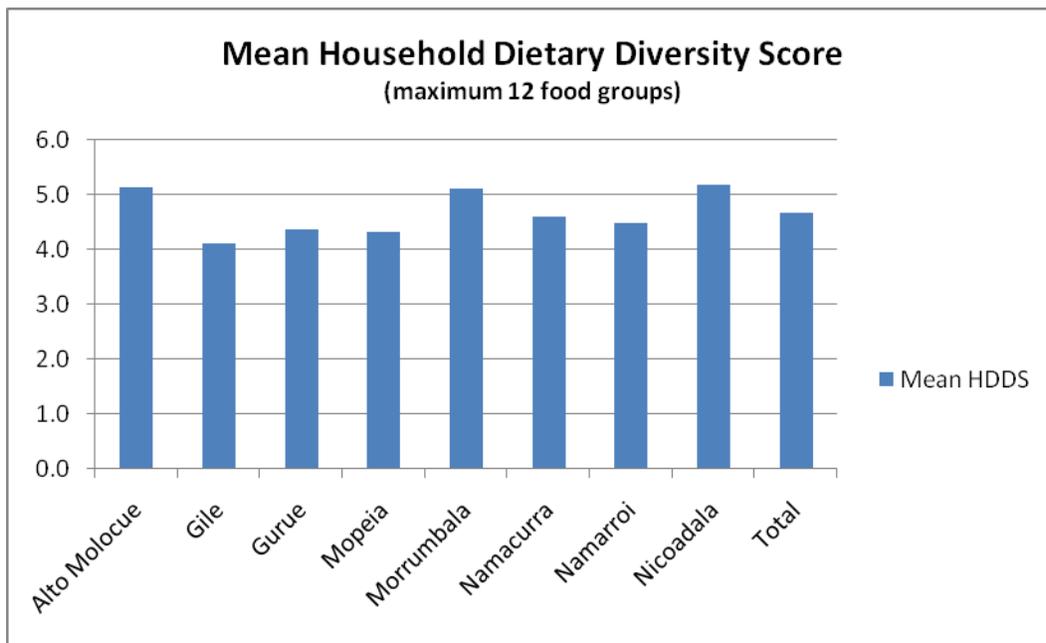


Figure 3-1 Average dietary diversity score by district on the surveyed areas

3.8.3 Months of Adequate Household Food Provisioning (MAHFP)

While the HDDS reflects the economic capacity of a household to obtain a diversified diet, the MAHFP shows gaps in access to food at the household level and is another impact indicator required by FFP for Title II programs. According to Bilinsky and Swindale (2006), MAFP can, over time, capture change in the household's ability to address vulnerability in such a way as to ensure that food is available above a minimum level the year round. Therefore, measuring the MAHFP has the advantage of capturing the combined effects of a range of interventions and strategies, such as improved agricultural production, storage and interventions that increase the household's purchasing power. The tabulation of the responses is a simple tally of total months that can be done by hand or with the aid of computer software such as a database or spreadsheet.

The MAHFP variable is calculated for each household by subtracting the number of months of the year (12) minus the total number of months out of the previous 12 months that the household was unable to meet their food needs.

The mathematical expression of MAHFP is as follows: $MAHFP = (12) - \text{Sum}(A + B + C + D + E + F + G + H + I + J + K + L)$. Values for A through L will be either “0” or “1”.

The data for both indicators were collected from the main food preparer in the household. The average number of months that respondents reported adequate food supplies at the household level was 8 months. By district, adequate household food provisioning was greatest in Gurue (9 months) and least in Mopeia (close to 7 months). Mopeia appears to be the most insecure district which agrees with staff observations (Table 3-19).

Table 3-19 Number of months with adequate and inadequate household food provisioning by district

District	Average MAHFP	Average MIHFP	N	Std. Deviation
Alto Molocue	8.7612***	3.2388	201	1.33517
Gile	8.9231***	3.0769	104	1.56225
Gurue	9.2645***	2.7355	242	1.33742
Mopeia	6.8193***	5.1807	83	1.10591
Morrumbala	7.1345***	4.8655	238	1.58540
Namacurra	7.3310***	4.6690	145	1.72826
Namarroi	8.9030***	3.0970	165	1.39347
Nicoadala	7.5395***	4.4605	152	1.81926
Total	8.1752***	3.8248	1330	1.74787

*** Statistically differences between the districts at 1% (Sig=0.000)

Analyses by region show that households in the Northern region have longer periods of food availability (9 months) than their counterparts in the South (7 months). On the other hand, about 28% of the households in Northern Zambezia reported going all the year without facing hunger while in Southern Zambezia, only six percent or 36 households have reported facing no hunger (Table 3-20).

Table 3-20 Months of adequate household food provisioning by region

Region	Average MAFP (# of HHs)	Mode of MAHFP	% of HH without hunger (# of HHs)	Significance
Northern Zambezia	8.9*** (712)	9.0	28 (278)	0.000
Southern Zambezia	7.2**** (618)	7.0	6 (36)	0.000

*** Statistically differences between the district at 1% (Sig=0.000)

Consistent with the transitory and seasonal nature of food insecurity in the area, there was wide variation in household access to food by month. During the rainy season (November, December and January), when food stocks are at their lowest, respondents reported the least access to food—less than 30% of households reported they had enough food during these months. The rainy season also showed the greatest disparity between the Northern and Southern districts. During November and December, less than one in ten households in the four districts in the Southern region said they had access to enough food, in contrast to 55% and 40%, respectively, in the North (Figure 3-2). The data used to draw the chart is in appendix 3, Table 6-8. This could be a reflection of the North’s enhanced capacity to produce more, but also to store and sell more produce as a means of generating income to purchase food during these months, when household stocks of certain products may be depleted. In general, it appears as though the Northern districts are better able to mitigate the cyclical nature of food insecurity than their Southern counterparts.

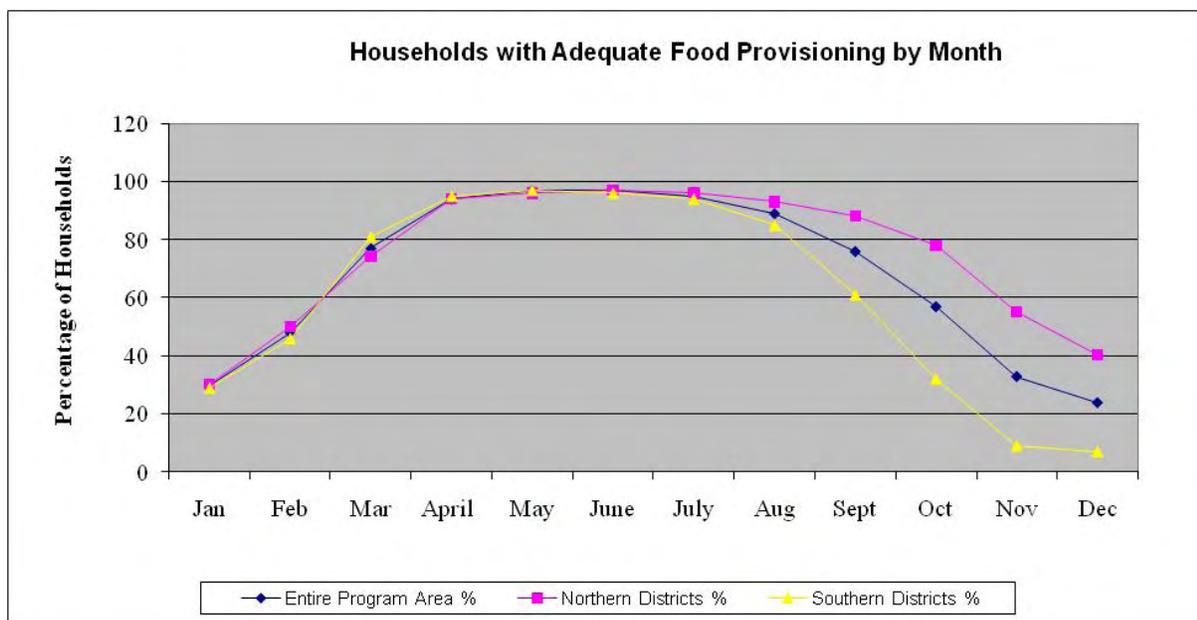


Figure 3-2 Percentage of households with adequate food provisioning by month and by region in Zambezia

The type of food that is most often consumed is cereals. About 82% of the households reported consuming cereals on the 24 hours prior to the survey. About 54% of households consumed vegetables and 56% of households reported eating fish. Almost all the interviewed community members reported eating the fruits rich in vitamin A. The reason is because the survey took place on November, a period which mango was available. So, about 96% reported eating mango during the past day prior to the survey (Appendix 6-10).

3.9 Household Livestock Ownership

Households were analyzed in terms of livestock ownership. Livestock is recognized in many areas in Mozambique as a source of income as well as a source of meat. Many households use sell livestock in order to respond to day to day needs, especially those of small livestock such as chickens, ducks, sheep or goats.

Cattle are used for multiple purposes in Zambezia. Some farmers use cattle for animal traction on their fields while others use cattle for meat production and multiplication. The figures in Table 3-19 show that cattle ownership is not common in Zambezia. Just 0.5 percent or 9

households reported owing cattle in surveyed areas. Morrumbala is the district with the highest number of households having cattle. When it comes to sheep or goat ownership, Morrumbala and Gile lead the number of households breeding these animals. In Morrumbala, about 34.7% of households reported breeding goats while in Gile, 24.6% owned goats. Nicoadala and Gurue are the districts with the lowest numbers of households having these livestock. Pork is common among the households in Gurue and Alto Molocue. In Gurue, about 29% of households reported owning pork. And in Alto Molocue, about 27% of households breed pork. Nicoadala district is the one with the lowest percentage of households owing pork at 10% of households in the district. Chickens are the livestock most commonly owned by the households in the surveyed areas. Overall, about 65% of the overall sample own chickens. Among the districts, Gurue and Alto Molocue are the districts with the highest number of households owning chickens (82.4 and 72.6 respectively). Pork has importance on household economy only in Morrumbala. Almost a third of households in Morrumbala own Cattle in Morrumbala (Figure 3-3). The table used to draw the chart is attached in Appendix 6-11.

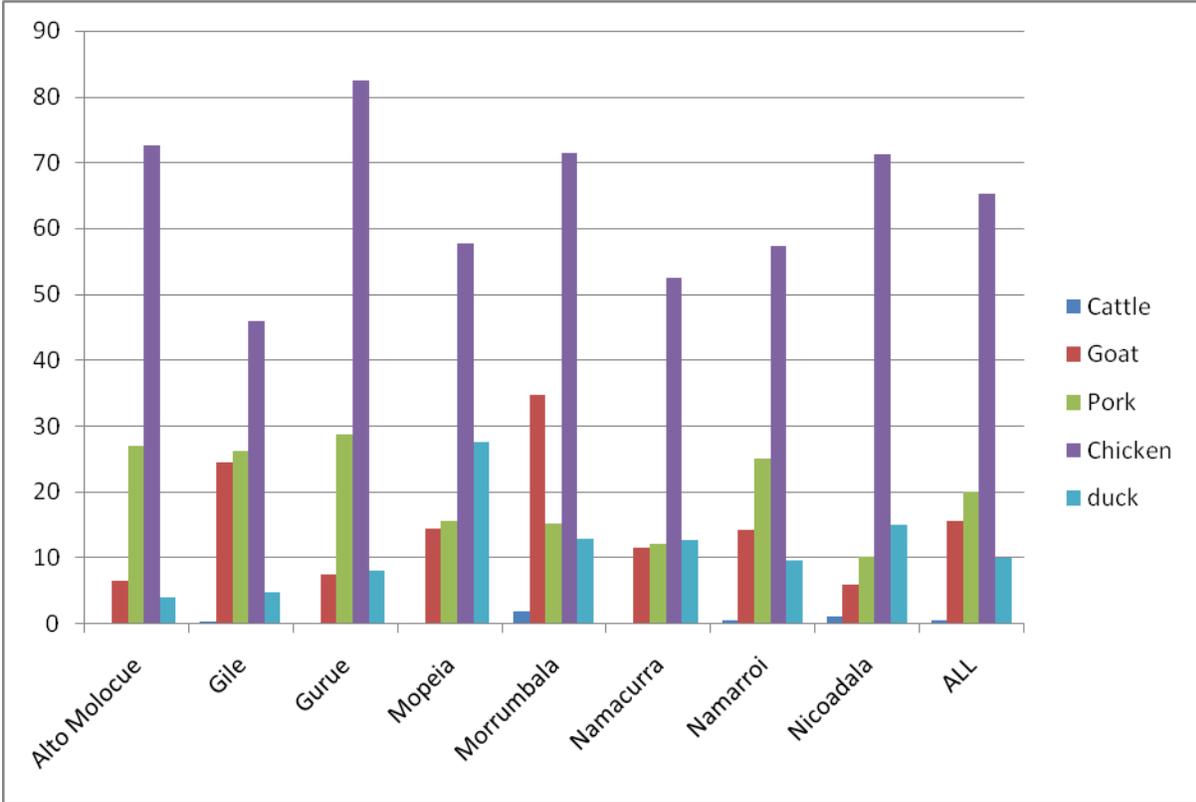


Figure 3-3: Proportion of households owning livestock per district

In terms of average number of livestock, the average number of cattle in the households in Zambezia is 3.44. However, only 4 districts have households with cattle. The average number of goat owned is 5 with Morrumbala having the highest average number per household (8) and the districts of Gile and Mopeia have the lowest average number of cattle per household (around 3). Each household in Zambezia have on average 3 pork heads with the highest average number in Morrumbala (5). Chickens are the livestock owned in the highest numbers in the targeted areas. On average, each household in targeted areas have 6 chickens. Gurue and Morrumbala have the highest average number of chickens (8 and 7 chickens per household). When it comes to ducks, the average number of ducks is 4 within the districts of Morrumbala and Namarroi registering the highest average numbers (5 ducks per household) (Table 3-21).

Table 3-21 Households with three types of animals

Dist_Cod		Cattle	Goat	Pork	Chicken	Duck
Alto Molocue	Mean		4.81	2.77	6.24	2.10
	N		16	65	175	10
	Std. Deviation		3.311	2.936	7.038	1.287
Gile	Mean	1.00	2.94	2.07	4.40	3.75
	N	1	62	41	116	12
	Std. Deviation	.	2.111	1.603	3.652	2.137
Gurue	Mean		5.00	2.19	7.53	2.61
	N		21	80	230	23
	Std. Deviation		8.118	2.268	6.664	2.148
Moopia	Mean		2.58	3.46	4.56	3.43
	N		12	13	48	23
	Std. Deviation		2.429	2.332	2.974	2.711
Morrumbala	Mean	3.00	7.93	4.89	6.62	4.59
	N	5	86	38	177	32
	Std. Deviation	2.121	17.165	4.507	6.894	3.546
Namacurra	Mean		3.06	3.11	5.36	3.25
	N		18	19	81	20
	Std. Deviation		2.100	2.258	4.998	1.832
Namarroi	Mean	10.00	2.97	2.44	5.32	4.67
	N	1	31	55	125	21
	Std. Deviation	.	3.049	2.053	6.344	4.317
Nicoadala	Mean	2.50	5.00	3.82	7.18	3.80
	N	2	10	17	119	25
	Std. Deviation	.707	8.857	3.909	6.849	2.677
Total	Mean	3.44	4.98	2.83	6.24	3.67
	N	9	256	328	1071	166
	Std. Deviation	2.963	10.699	2.869	6.328	2.944

4. HEALTH AND NUTRITION

4.1 Adult Hygiene and Vitamin A consumption

According to the Baseline study, in general, households wash their hands after defecating or before preparing a meal in the surveyed communities. Interestingly, those in the North tend not to wash their hands as much when compared to their counterparts in the South. Roughly 16% to 22% of households in the Northern districts do not wash their hands after using the toilet. In Alto Molocue, about 21% do not wash their hands after defecating, in Gurue, 20% do not do so. The percentage of households, about 19%, reported not washing hands after defecating in Namarroi. The Southern region shows a different scenario. The proportion of households not washing their hands after defecating is less than 10%, with the highest percentage found in Mopeia where about eight percent reported not washing hands after defecating. In other districts of Nicoadala, Namacurra and Morrumbala, the percentage of households not washing hands was 7.2%, 3.2% and 4.8% respectively. The main product used for washing hands is water either with ash or soap (Table 4-1).

In terms of hygiene before preparing the meals, the baseline survey found that most of the households reported washing their hands before preparing their foods. Besides Gurue, where about 15% of households reported not washing their food items; all other districts have a lower proportion of households not following the proper hygiene behavior (Table 4-3). When asked about what is used to wash their hands, all households answered that simple water was the product (Appendix 6-14).

Table 4-1 Households following the proper hand washing behavior

Dist_Cod	DID NOT Wash hands after defecating		DID NOT Wash hands before preparing the meal		WASHED HANDS AFTER DEFECATING AND BEFORE MEALS
	Frequency	Percent	Frequency	Percent	Percent
Alto Molocue	39	16.2	5	2.1	82.2
Gile	53	21.0	1	0.4	79.0
Gurue	56	20.1	41	14.7	75.3
Mopeia	7	8.4	5	6.0	86.7
Morrumbala	12	4.8	13	5.2	91.1
Namacurra	5	3.2	9	5.8	91.0
Namarroi	41	18.8	8	3.7	79.8
Nicoadala	12	7.2	10	6.0	89.2
ALL Sample	225	13.7	92	5.6	83.3

Vitamin A deficiency among both women and children is pervasive in Mozambique. Lack of vitamin A can lead to ocular/visual problems, heightened susceptibility to illness, and negative birth outcomes in pregnant women, including low birth weight and premature birth. To combat vitamin A deficiency, World Vision’s program has been promoting consumption of vitamin A rich foods. It is still not known, however, if consumption of foods rich in beta-carotene, which are plant-based, can elevate vitamin A stores enough in order to lift most people in developing nations out of vitamin A deficiency. This section focused solely on knowledge of the importance of vitamin A—in contrast to actually measures of serum retinol. Interviewers asked heads of the household whether or not they had ever heard of vitamin A and where they had heard of it. Ninety-one percent of caregivers had heard of vitamin A (Table 4-2).

Table 4-2 Households who had received information on vitamin A

	Frequency	Percentage	Confidence Limits (95%)
No	144	8.8	
Yes	1500	91.2	0.90-0.93
Total	1644	100.0	

The most commonly named sources for information on vitamin A were health personnel (52%), followed by World Vision (24%), radio (18%). Interestingly, the importance of Vitamin A is not

much discussed at family level. Only two percent of households reported hearing Vitamin A with a family member (Table 4-3).

Table 4-3 Household source of information on vitamin A rich products

	Frequency	Percentage
Radio	270	18.00
NGO	10	0.67
World Vision	362	24.13
Health staff	779	51.93
Family	25	1.67
Other	45	3.00
Do not know	9	0.60
Total	1500	100.00

4.2 PLWHA/CI Health

The only question related to HIV/AIDS asked to respondents was whether anyone in their household between 15-49 years of age was suffering from HIV/AIDS or a chronic illness. A chronically ill person is defined as an individual who is sick for a long duration (more than three months) and slow progression (source WHO, 2009 in http://www.who.int/topics/chronic_disease/en/). About 7% of people interviewed stated that one of their family members had either condition. Reported cases of HIV/AIDS were higher in the Southern districts than in the Northern. About 53% of all 116 people that reported having at least one member chronically ill were in the South. The differences are not statistically significant (Table 4-4).

Table 4-4 Households with at least one member chronically ill, by region

	Frequency	Percent	Percentage in the Northern Districts	Percentage in the Southern Districts
No	1528	92.9	61.0	39.0
Yes	116	7.1	47.0	53.0
Total	1644	100.0	60	40

Reported cases HIV/AIDS or CI were highest in Nicoadala (15.0%) and Namacurra (16.7%) and lowest in Gurue (2.9%) and Morrumbala (3.2%) (Table 4-5). Comparisons by region show that

the districts in lower Zambezia have higher percentage of chronically ill persons than those of higher Zambezia. The overall sample (5.5%) of households in the North reported having at least one person ill and in the South, almost 10% of households have a member ill for more than three months (Appendix 6-15).

Table 4-5 Households with at least a member chronically ill, by district

District Code	Frequency	Percent
Alto Molocue	14	5.8
Gile	16	6.3
Gurue	8	2.9
Mopeia	3	3.6
Morrumbala	8	3.2
Namacurra	26	16.7
Namarroi	16	7.3
Nicoadala	25	15.0
Total	116	100

4.3 Child Health

During OCLUVELA baseline study 1644 households were interviewed overall. Of the interviewed households, 1,269 representing 77% have at least one child 0 to 59 months in the household (Table 4-6). Furthermore, the OCLUVELA baseline survey measured the anthropometric indicators of children zero to 59 months. During the exercise, all children zero to 59 months were measured or weighed: weight (kg), height (cm) or length (cm) according to their age range.

Table 4-6 Basic indicators of child characteristics in the surveyed areas

	Number
Number of HH interviewed	1644
Number of HH having at least a child 0-59 months	1269
Number of children zero to 59 months in the households	1698
Average number of children (zero-59 months) per household	1.30
Average age of children (0-59 months)	24.39
Percentage of female children measured	50%
Average weight of measured children	10.12 Kg
Average height of measured children	81.91 cm

4.3.1 Breastfeeding

Good breastfeeding practice is one of the most important tenets of adequate infant feeding and good nutrition status. Previous World Vision studies (such as the OVATA Nutrition) have shown that nearly all women breastfeed children from birth to 18/24 months of age. However, many women do not practice exclusive breastfeeding during the first six months of life of the infant. The introduction of water or watery gruel can have serious negative consequences for the young infant. The introduction of water (tea or infusions) or other food items can reduce the in-take of breast milk as the child does not feel hungry and this will reduce the milk production in the mother. As water and/or other food items do not provide the same nutrients and protection to the baby as breast milk, this can cause the early onset of malnutrition and increased risk of infectious diseases. This survey confirms the results of the previous studies in terms of infant breastfeeding practices. About 99.8% of interviewed households who had a child 0 to 5 had reported that their child had been breastfed. Only two caregivers reported not providing a child with breast milk after birth (Table 4-7).

Table 4-7 Households in which a child was breastfed

	Frequency	Percentage
Did not breastfeed	2	.2
Had breastfeed a child	1267	99.8
Total	1269	100.0

Caregivers were investigated in terms of what was the right time according to their knowledge to begin complimentary feeding. The responses show that only seven out of a hundred would provide a child with complimentary food rather than breast milk at four months or less. The majority of interviewed caretakers reported providing complementary foods at four to six months. About 81% of the households reported giving extra food to their child at that age. It is important to mention that previous World Vision and government programs were advising mothers to exclusive breast milk up to the age of four (OVATA baseline, 1997-2001). Only 11.3% of caregivers have reported exclusively breastfeeding children up to the age of six (Appendix 6-14).

Table 4-8 Households understanding of the right time to begin complementary feeding

	Frequency	Percentage
Less than 4 months	90	7.1
From 4 to 6 months	1036	81.6
From 6 to 12 months	95	7.5
After 12 months	48	3.8
Total	1269	100.0

For those children who were provided extra food, their caretaker reported giving them water, porridge, other liquids such as juice refrigerated, and other food types such as fruits, 'xima' (strong porridge), rice, biscuits, other snacks. The results show that the majority of the households start to give plain water to their child at the age of 0 to 5 months of age. More than 60% of households who had a child during the period of the survey reported giving their children plain water and porridge. Only 22% reported providing their children with extra foods such as fruits or nuts and about 40% reported giving a child zero to five months other liquids. From 6 months over, the caregivers provide most of the food items questioned (Table 4-9). The proportion of households providing extra liquids to their child is considerably small when compared to other food items. This is because other liquids such as juice requires money with is mostly unavailable.

Table 4-9 Foods given to children 24 hours before the survey, by age group

Food type	0-5 months*¹⁴ %	6-8 months %	9-11 months %	12-23 months %	23-59 months %	ALL
Water	64.8	80.8	74.8	73.6	77.4	75.3
Porridge	62	85.8	78.4	70.5	59.6	68.6
Other liquids	39.4	56.7	55.9	64.3	69.2	62.7
Other foods	22.5	60	82	82.5	92.3	79.6

* Includes only those children that were not exclusively breastfed.

4.3.2 Dietary Diversity for Children 6-59 Months

Diet diversity was relatively high in the population surveyed. Most children who were breastfed (87.4%) received the minimum number of food groups according to age; this rate drops to 49.3% for non-breastfed children between 7-23 months. Fruits, vegetables, and foods rich in vitamin A

¹⁴ Only includes children who were not exclusively breastfed.

are not introduced early enough; as the tables below shows, consumption increases with age. The progression of introduction of foods by age validates the above finding that cereals and other starches are introduced too early, remain the sole component of the diet between 6-8 months, and probably are not ‘complemented’ often enough by other foods, especially fats and proteins. Low consumption of fats and proteins in children is most likely related to socioeconomic status, and consumption does not increase through behavior change and education activities alone.

As children grow, they consume less milk. The percentage of children consuming milk and milk products dropped from 93% at the age of 6 months to less than 10% for those of 24 to 59 months (Table 4-10). Most of milk recorded as consumed by children from 6 to 8 months was breast milk. Because of that, the decrease in number children breastfeeding directly correlates with the reduction in the number of children consuming milk. Less than half of the interviewed caregivers reported providing their infants with meat. Surprisingly eggs are consumed frequently in the communities. OVATA Nutrition and other programs pioneered the implementation of enriched porridges with eggs, and worked to eliminate the stigma that ‘*children are not allowed to eat eggs because they will turn into thieves*’ as well as ‘*pregnant woman cannot eat eggs, otherwise her child will born hairless*’.

Table 4-10 Introduction of specific food groups by age group

<i>Food Group</i>	<i>6-8 months%</i>	<i>9-11 months%</i>	<i>12-23 months%</i>	<i>24-59 months%</i>	<i>Total%</i>
Cereals, roots, tubers	90.0	84.7	85.6	85.1	85.7
Foods rich in vitamin A	10.0	18.0	23.3	24.4	21.9
Other fruits and vegetables	67.8	82.0	93.0	96.7	91.0
Meat (including fish, poultry and red meat)	35.6	35.1	42.7	45.8	42.4
Eggs (all types)	5.6	14.4	17.0	16.2	15.4
Beans and other pulses	21.1	26.1	34.3	31.6	31.2
Milk or milk products (includes breastmilk)	93.3	92.8	69.1	9.0	50.6
Foods with oil or other fats	30.0	27.0	36.7	42.9	37.4

The infant dietary diversity score (IDDS) was estimated for each child. The Knowledge, Practice and Coverage survey (KPC 200+) contains a module for estimating the Infant and Young

Children Dietary Diversity Score (IDDS). The estimation of IDDS includes the following eight food categories:

- A- Grains, roots or tubers
- B- Vitamin A-rich plant foods
- C- Other fruits or vegetables
- D- Meat, poultry, fish, seafood
- E- Eggs
- F- Pulses/legumes/nuts
- G- Milk and milk products
- H- Foods cooked in oil/fat

The average infant dietary diversity score for the interviewed children in Zambezia is 3.76, meaning that on average children in Zambezia ate about 4 food categories out of eight that they should have access to (Table 4-11). Comparisons per district show that five districts (Gile, Gurue, Mopeia, Namacurra and Mopeia) have a lower average IDDS, than the provincial average. Nioadala is the district with the highest average IDDS while Namarroi is the district with lowest average IDDS score (Appendix 6-16).

Table 4-11 Average infant dietary diversity score of households per district

	N	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
					Lower	Upper
IDDS	1007	3.7607	1.23699	.03898	3.6842	3.8372

* Maximum IDDS=8

The infant dietary diversity score is correlated with the number of meals consumed. The average number of meals per child in Zambezia is 3.52, meaning that, on average, the children consume more than three meals a day. The number of meals children consume per day is higher in Morrumbala and lower in Namarroi. This is in line with the IDDS score estimated for these districts (Table 4-12). In general, about 40% of the households consume three meals per day and 26% of the households consume five meals per day. An alarming figure is that some children (counting 15) in our surveyed communities have only one meal per day. About one in ten consume only two meals per day (Figure 4-1).

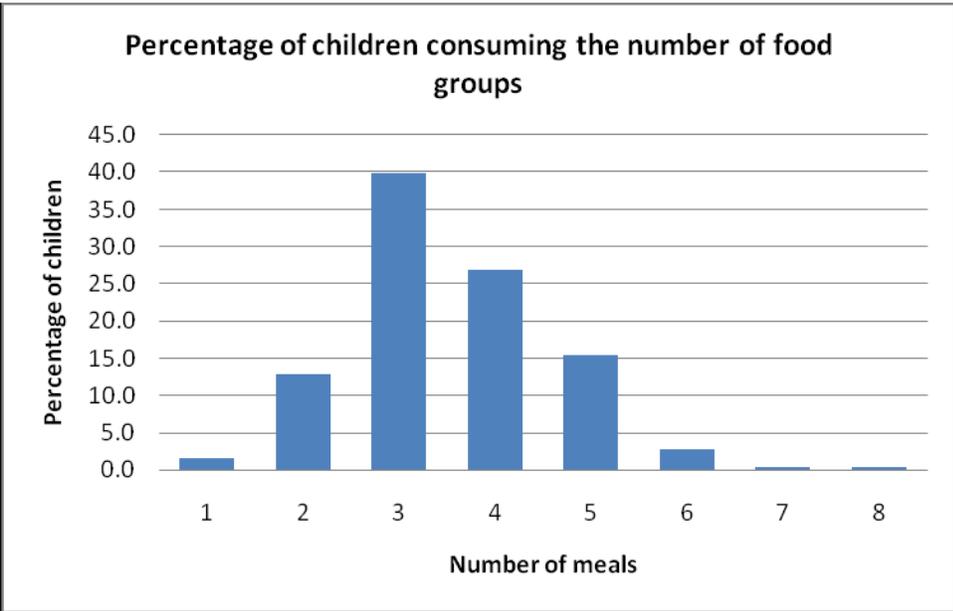


Figure 4-1 Number of food groups consumed per age group

Comparison between age groups does not show significant differences. However, they provide evidence to conclude that as the age of a child increases, the number of meals given to them increase as well. While children 6 to 8 months received on average 3.3 meals, those of 24 to 59 months received about 3.6 meals per day (Table 4-12).

Table 4-12 Average number of meals consumed per age group

Age group	N meals
6-8 months	3.3
9-11 months	3.4
12-23 months	3.6
24-59 months	3.6
All sample	3.5

Out of a total of 8meals.

4.3.3 Diarrhea and Health Care Practices

Diarrhea is one of the five leading causes of death and malnutrition in children under five in developing countries. Reducing diarrhea prevalence and treating diarrhea effectively are critical to improving nutritional status. However, preventing diarrhea transmission depends on

improving hygiene and sanitation, which are complex tasks largely dependent on increasing resources and changing behaviors.

Among children ages of 0-59 months, 42.3% had suffered a case of diarrhea during the two weeks prior to the survey (Table 4-13). OCLUVELA aims to reduce the proportion of children suffering diarrhea from 42% to 37% (Appendix 6-14). For reference sake, the 2003 DHS survey reported 14%. Caregivers of children who had suffered from diarrhea were questioned regarding the amount of liquids that were offered to their children during episodes of diarrhea. Child malnutrition can be affected by the vulnerability of a child to illness and other infectious diseases. About 70% of interviewed caretakers reported that their child had a fever during the two weeks preceding the survey. The majority of children suffering fever were in the North. Fewer caretakers reported having children with diarrhea in the South when compared to those in the Northern region.

Table 4-13 Types of diseases affecting children per region

Zone	Percentage of children			
	Diarrhea	Cough	Cough and Respiratory disease	Fever
North	49.9	42.6	19.6	70.6
South	31.0	29.8	8.2	50.2
All	42.3	37.4	15.1	62.4

OCLUVELA aims to affect the way in which households manage diarrhea episodes in the home. In particular, OCLUVELA will utilize nutrition trainers who will discuss with mothers the importance of giving extra liquids to children who have diarrhea, maintaining appropriate breast-feeding and feeding practices, and offering more food to children in the time immediately after a diarrhea episode. The baseline survey indicated that children 0 to 59 months with diarrhea received less or more breast milk than usual in the program area: about 41% of the households offered more breast milk than usual and more than half of the interviewed households reported giving less liquids than usual or same as usual (Table 4-14).

Table 4-14 Children 0 to 59 months with diarrhea receiving less or more breast milk than usual

	Frequency	Percentage
More breast milk than usual	162.0	41.12%
Less breast milk than usual	140.0	35.53%
Same as usual	92.0	23.35%
Total	394.0	100

When it comes to liquids other than breast milk, about 30% of households reported offering more liquids than usual, which is the recommended practice for treating children with diarrhea. Almost 70% of the households reported giving less liquid than usual or same (Table 4-15). The 2003 DHS survey reported that 37.1% of children zero to five years with diarrhea, in Zambezia province, received more liquids than usual. Mothers who were breastfeeding preferred to provide more breast milk than usual when their children suffered from diarrhea. OCLUVELA will work on emphasizing the importance of increasing the amount of liquids given to a child or a person with diarrhea.

Table 4-15 Children suffering from diarrhea, according to liquid intake

	Frequency	Percentage
Same as usual	104	19.4
Less liquids than ususal	194	36.1
More liquids than ususal	156	29.1
Did not consume liquids	83	15.5
Total	537	100.0

4.4 Care-seeking for ill Children

Households were interviewed in terms care-seeking behaviors for an ill child. About 94% of households reported that the first place they seek for help is a hospital. A significant number of households reported taking a child to either the traditional doctor or giving medicines at home. About 28 households reported taking their child to a traditional doctor (currandeiro) (Table 4-16).

Table 4-16 Household care seeking behaviors for an ill child

	Frequency	Percentage
Hospital/health care/health facility	1185	93.4
Activist of Health	8	.6
Mobile brigade	4	.3
Private doctor	2	.2
Traditional doctor	28	2.2
Pharmacy	4	.3
Gave the medicine at home	28	2.2
Other	10	.8
Total	1269	100.0

4.5 Anthropometric Measurements

In this section, the impact indicators and annual monitoring indicators are investigated. Three indices are widely used for assessing the nutritional status of children:

1. Weight for age
2. Length-for-age or Height-for-age
3. Weight-for-length or Weight-for-height.

Stunting results from chronic under nutrition, which retards linear growth, whereas *wasting* results from inadequate nutrition over a shorter period (acute malnutrition), and *underweight* encompasses both stunting and wasting.

There are many other anthropometric measures including mid-upper arm circumference (MUAC), sitting height to standing height ratio (Cormic Index), and various skin fold measures. This survey concentrated on measurement of weight and height in children. The cut-off points for different malnutrition classifications are listed below. The most widely used system is WHO classification (Z scores). The cut-off points for Z-score are: from -1.00 to -1.99 SD for mild malnutrition; from -2.00 to -2.99 SD for moderate and -3.00 SD and below for severe malnutrition. All other cases are considered adequately nourished. In each household, all children 0 to 59 months were assessed in terms of their anthropometric indicators. For those children 0 to 6 months only the weight was measured. For children between 6 and 59 months, the weight and height were measured.

The results (Table 4-17) show that according to high by age indicator, about 34% of the measured children were adequately nourished, while about 30% were mildly malnourished. In terms of weight for age, about 43% of children are adequately nourished and 33% show a mildly malnourished status. About 23.7% of children were found in the category of moderate to severe malnourished for this indicator.

When weight for height (wasting) is considered, about 9.0% of the children were found to have moderate or severe wasting problems.

Table 4-17 Child nutrition status

Status	Height for Age (Stunting)	Weight for Age (Underweight)	Weight for Height (Wasting)
Adequately nourished	34.5	43.1	68.5
Mildly malnourished	29.2	33.1	22.9
Moderately malnourished	19.0	19.2	6.7
Severely malnourished	17.3	4.6	2.0
TOTAL Moderate-Severely Malnourished (\leq-2SD)	36.3%	23.8%	8.7%

When analyzing the children who are moderately to severely malnourished (\leq -2SD): about 37% of them fall into this category when analyzing stunting and about 24% of the children fall into this category for underweight. (Appendix 6-18).

4.5.1 Analysis of Stunting by Specific Age Groups

Stunting status was analyzed by a child's age. Stunting can be defined as the percent of children falling in or below -2 standard deviations from the World Health Organization for height-for-age. Low length-for-age, stemming from a slowing in the growth of the fetus or the child, and resulting failure to achieve expected length as compared to a healthy, well nourished child of the same age, is a sign of stunting. Stunting is an indicator of past growth failure and it is associated with a number of long-term factors including chronic insufficient protein and energy intake, frequent infection, sustained inappropriate feeding practices and poverty. In children over two, the long-term effects may not be reversible. Data on prevalence of stunting in a community may be used in problem analysis and designing interventions. Stunting can be used for evaluation

purposes, but is not recommended for monitoring as it does not change in the short term, such as a period of 6-12 months.

Figure 4-2 below shows the distribution of stunting by age group. The results show that few children under two years suffer from stunting. About 17% of children 6 to 8 months showed a Z-score less than two for this indicator. The percentage of children 9 to 11 months suffering from stunting is also low, less than 20%. For the group of children 12 to 23 months, about 35% of them suffer from this type of malnutrition. ON the other hand, the greatest rates of stunting were observed in children 24 to 59 months (about 43%).

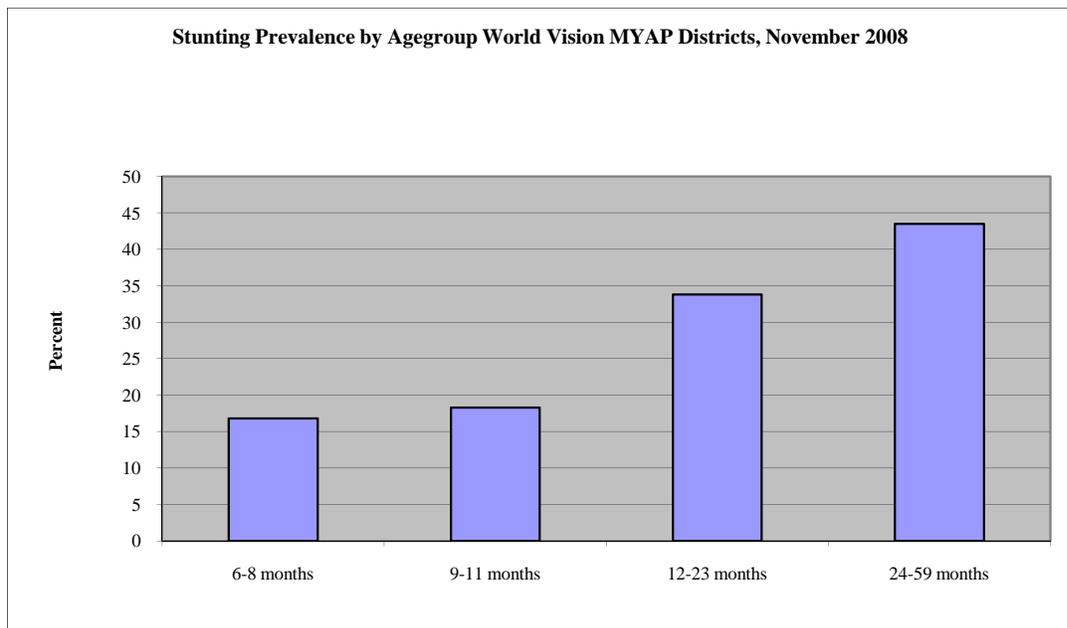


Figure 4-2 Stunting Prevalence (moderate and severe) by age group in OCLUVELA districts

4.5.2 Analysis of Underweight by Specific Age Groups

Underweight is defined as the percent of children falling in or below -2 Standard Deviations (SD) for weight-for-age. In other words, the low weight-for-age index identifies the condition of being **underweight**, for a specific age. The advantage of this index is that it reflects both past (chronic) and/or present (acute) under nutrition, although it is unable to distinguish between the two. According to the baseline study, about 24% of overall children were underweight (below – 2 Standard Deviations). As we can see in the graph below, underweight was most common for

children 12 to 23 months, almost 35% of the surveyed children that were malnourished according to this category. On the other hand, underweight was not reported as a problem for the majority of children less than five months (Figure 4-3). This could be considering as a sign of good breast feeding practices, especially for children at that age group.

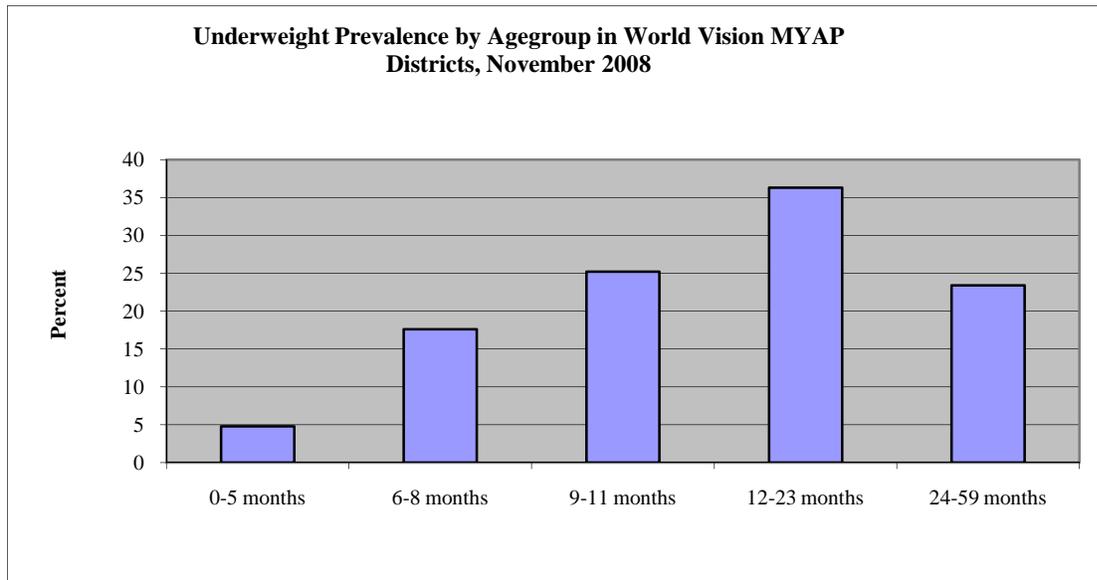


Figure 4-3 Underweight (moderate and severe) prevalence by age group OCLUVELA districts

4.5.3 Analysis of Wasting by Specific Age Groups

Wasting is defined as the percent of children (6-59 months) falling in or below -2 standard deviations for weight-for-height. Low weight-for-height helps to identify children suffering from current or acute under nutrition or **wasting**. Weight-for-length (in children under 2 years) or weight-for-height (in children over 2 years) is also appropriate for examining short-term effects such as seasonal changes in food supply or short-term nutritional stress brought about by illness. In the examined sample, wasting is more prevalent among 6 to 23 months. Fewer children from 24 to 59 months suffer from wasting (less than 5%). (Figure 4-4).

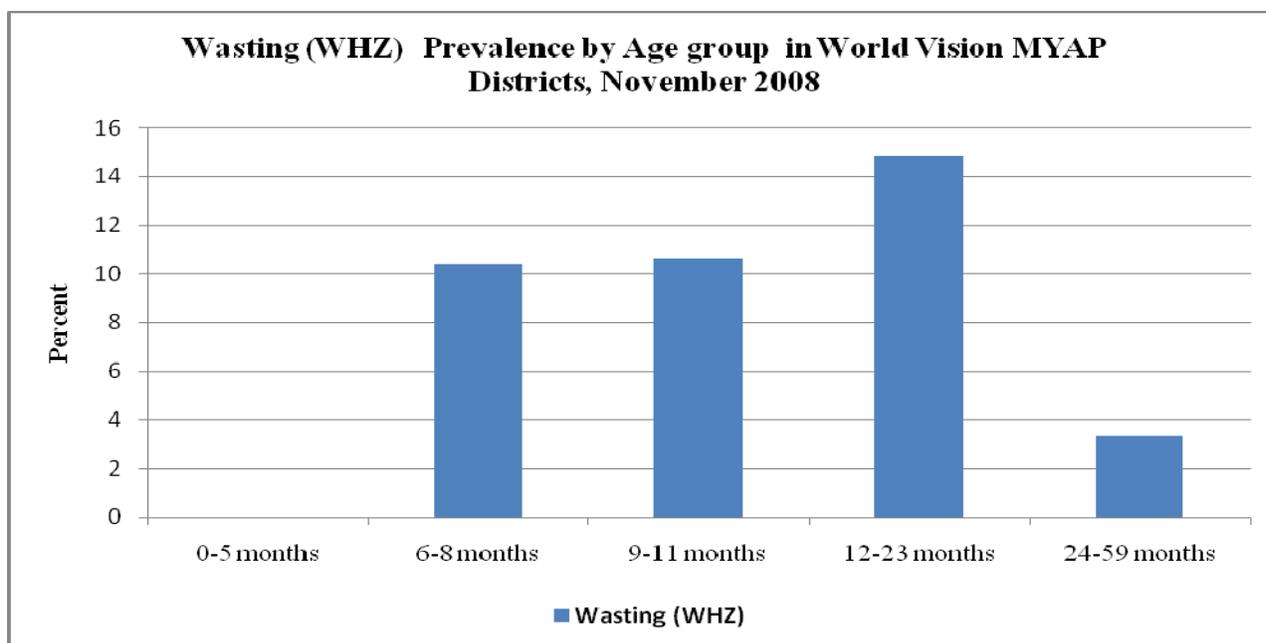


Figure 4-4 Wasting prevalence (moderate and severe) by age group in OCLUVELA districts

4.5.4 Nutrition Status by Geographic Area

The nutrition status of children was analyzed by district. The highest rates of stunting were found in both Gurue (45%) and Namacurra (55%) (Table 4-18). Namacurra has poor sandy soils, with the high incidence of stunting, poor agricultural soils and high percentage of chronically ill people; Namacurra appears to be chronically food insecure. The lowest proportion of children with stunting was in Nicoadala. There are no significant differences between the nutrition patterns among the districts of Alto Molocue, Gile, Mopeia, Morrumbala and Namarroi.

When it comes to underweight, Namacurra is the district with the highest rate of underweight when compared to other districts. In Namacurra, about 35.5 per cent of children fall in the category of severe to moderate on stunting. Overall, the Northern districts of Gurue, Gile and Molocue have higher number of children mildly and severely affected by underweight than the Southern districts of Nicoadala and Morrumbala (Table 4-18).

Wasting was higher in the districts of Molocue, Gile and Namarroi. In Alto Molocue, about 12 per cent of children suffered stunting while in Gile and Namarroi, about 10.9 and 9.6 per cent of children are severe to mild stunted. The lowest proportion of stunting was found in the districts of Namacurra and Nicoadala (Table 4-18).

Table 4-18 Child nutrition status by district

District	Stunting (HAZ)	Underweight (WAZ)	Wasting (WHZ)
	Moderate and Severe%	Moderate and Severe%	Moderate and Severe%
Alto Molocue	34.5	23.7	11.9
Gile	34.9	24.3	10.9
Gurue	44.70	27.1	8.8
Mopeia	35.9	15.0	6.3
Morrumbala	38.2	19.7	5.9
Namacurra	54.9	35.5	5.6
Namarroi	39.7	25.9	9.6
Nicoadala	21.4	15.8	7.3
Total	36.3	23.7	8.3

In summary, among surveyed districts, the districts of Gurue, Mopeia and Namacurra showed the poorest child nutrition rates, while the districts of Gile, Alto Molocue and Namarroi have the lowest rates for stunting and wasting.

5. COMMUNITY RESILIENCY

5.1 Community Resiliency

Community resiliency was investigated during the survey. Key community household members such as leaders, a teacher, a nurse, farmers, and community business people were interviewed during the process. Each interview took 45 minutes to 1 hour and the questionnaire collected mainly qualitative data. During the meeting, all the participants were encouraged to express their opinion about the risk of resiliency of their specific community. The interviews of key informants were conducted by the team leader, while the interviewers conducted the household interviews. Each of the 61 communities where the household questionnaire was conducted responded to one community questionnaire. At the end of interview, the team supervisor analyzed the community capacity using three easy steps. A sample questionnaire used for the community questionnaire is attached in the appendix 5.

5.2 Number of Questionnaires Conducted

About 57 out of the 61 planned questionnaires were conducted in 8 districts. The number of questionnaires represent 93% of overall sample target. The number of community questionnaires coincides with the number of communities in each district. In Alto Molocue and Gurue districts, ten questionnaires were conducted (Table 5-1). These districts reported the highest number of community questionnaires, while in Mopeia district only three questionnaires were conducted.

Table 5-1 Number of planned questionnaires vs. number of valid questionnaires

	Planned Questionnaires	Valid Questionnaires	Percent
Alto	10	10	100.00
Molocue			
Gile	9	8	88.89
Gurue	10	10	100.00
Namarroi	8	8	100.00
Mopeia	3	3	100.00
Morrumbala	9	8	88.89
Namacurra	6	5	83.33
Nicoadala	6	5	83.33
Total	61	57	93.44

5.3 Identification of Shocks

Shocks are described as natural or human induced events that affect the lifestyle of a community (destroying the assets, affecting the financial status or affecting the natural resources). In this section, shocks are described in terms of incidence, magnitude and severity. Furthermore the survey questionnaire looks at the existence of risk management committees that discuss the shocks and its effects, early warning systems in place, mitigation measures to address the shocks, and the designing of contingency plans for emergencies.

5.3.1 Incidence of Shocks

Members of the communities were interviewed regarding the incidence of shocks during the past 12 months. Overall, about 90% of interviewed households reported being affected by an abnormal situation that reduced their living standard. The remaining 10% of interviewed households reported having a normal year without significant changes their lifestyles (Appendix 6-20). Comparisons per region show that in Northern Zambezia, 83.3% of the communities were affected by an abnormal situation than has affected the lives of the community members while the rest of the communities (16.7%) were affected by an abnormal situation than has worsened their lifestyles. In the Southern districts, a 100% of the interviewed communities reported having been affected by a situation that has left the communities in worse condition (Table 5-2).

Those communities located in Mopeia, Morrumbala, Namacurra and Nicoadala are considered the most vulnerable communities in Zambezia, along with Chinde and Inhassunge.

Table 5-2 Communities affected by an abnormal situation that has affected their lifestyle in terms of food security during the last 12 months

Region		Frequency	Percent
North	No	6	16.7
	Yes	30	83.3
	Subtotal	36	100.0
South	Yes	21	100.0

5.3.2 Incidence of Shocks by District

The occurrences of shocks that have affected the food security during the past 12 months by district are presented in Table 5-3 below. The results show that only communities in Gurue district not being affected by shocks. All other communities were unanimous to in reporting that they face day-to-day shocks that reduce their standards of living. Again it might be because production in Gurue district was relatively good last year or that this specific question was not well presented in the communities.

Table 5-3 Communities affected by an abnormal situation that has affected their lifestyle in terms of food security during the last 12 months by district

District		Frequency	Percentage
Alto Molocue	Yes	10	100.0
Gile	Yes	8	100.0
	Yes	4	40.0
Gurue	No	6	60.0
	Total	10	100.0
Mopeia	Yes	3	100.0
Morrumbala	Yes	8	100.0
Namacurra	Yes	5	100.0
Namarroi	Yes	8	100.0
Nicoadala	Yes	5	100.0

5.4 Types of Shocks

Drought was identified as the most important shock affecting the majority of the communities, both in the in then and the South. About 90% of households in the North reported being affected by droughts, while in Southern Zambezia all the communities reported being affected by this type of shock.

The other important shock identified as affecting members of the communities was disease epidemics. Most of communities reported being affected by mainly cholera, diarrhea, and other diseases related to HIV/AIDS. In the North, 87% of interviewed communities reported being affected by epidemics on people, while in the South 95% of communities were affected by epidemics on people.

Earthquakes are not important sources of risk in the interviewed communities. Only 4% of the communities in the North reported an earthquake as a shock that worries their communities. Reports were similar in Southern Zambezia, with on 5% of communities reported being worried by an earthquake.

Certain shocks are particularly important in the North, while others the South. Erosion has more impact on the North and is regarded as a small problem in the South. About 57% of the communities in the North reported having erosion problems. Northern Zambezia is characterized by high land areas and mountains. This makes that region vulnerable to erosion. According to the interviews, the South does not have many problems with erosion because of it is located in low laying areas. However, floods were important in the South. About 52% of households living on the margins of the main rivers have reported floods in their areas (Table 5-4). Mopeia and Morrumbala are two districts cyclically affected by floods due to their localization on the margin if rivers.

Table 5-4 Communities affected by the different shocks by region

region		Affected by drought	Affected by erosion	Plagues	Epidemic on people	Epidemic on animals	floods	earthquake	cyclones
North	No	10.0	43.3	16.7	13.3	33.3	86.7	96.7	26.7
	Yes	90.0	56.7	83.3	86.7	66.7	13.3	3.3	73.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
South	No		81.0	71.4	4.8	52.4	47.6	95.2	95.2
	Yes	100.0	19.0	28.6	95.2	47.6	52.4	4.8	4.8
	Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0

5.5 Early Warning (EW) Mechanisms

In this section, the communities were investigated as to whether they have a reliable early warning system in place for the previously discussed shocks. Early warning systems are important tools to use to (i) guarantee the appropriate response and reduction in the effect of shocks; (ii) guarantee the existence of detailed plans for prevention and mitigation of shocks and (iii) guarantee the pre-evaluation of incapacities of the communities and other stakeholders in dealing with the shocks.

The majority of the communities do not have early warning system in place for shocks (Figure 5-1). About 30% of interviewed communities in the South have an EW system for floods, while only 10% of communities have the same system in the North. Also, 30% of the communities have EW system for drought in the North; while as many as 53% of the communities have an EW system for drought in the South. The Southern region is constantly affected by drought. Some organizations such as World Vision, Save the Children, GPZ and Oxfam are working in Southern Zambezia to empower the communities with risk mitigation tools. The same situation appears to be true for floods. Because Southern Zambezia has many rivers, including the Zambezi River, some regions are affected by floods. Most of the communities in the South have a more EW systems in place for floods than the North.

Detailed analysis show that overall, less than 30% of communities sampled have EW system for any of type of shock, showing a strong need of reestablishing the early warning systems with particular emphases on Southern Zambezia where both floods and drought affect the region

(Appendix 6-21). Consequently those regions affected by floods are susceptible to cholera and other diseases.

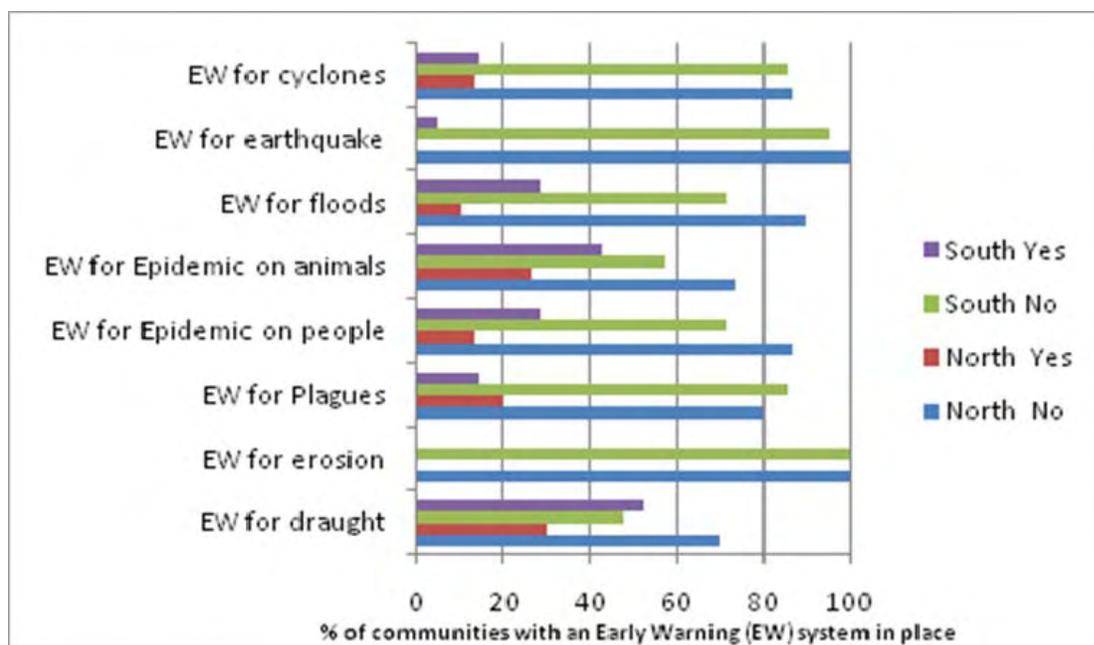


Figure 5-1 Percentage of communities with an Early Warning (EW) system in place

The risk mitigation early warning system is correlated with access to information. In Table 5-5 below, the access of information by the targeted communities is addressed. The data show that 36% of communities in the North have access to external information about the weather, while fewer communities in the South have access to external information (19%). This discrepancy between regions can be associated to the fact that the Southern region is affected by rapid and devastating shocks; having more attention of many National and International Organizations for help.

Table 5-5 Communities with access to external sources of information

Region		Frequency	Percentage
North	No access to external information	23	63.9
	With access to external information	13	36.1
	Total North	36	100.0
South	No access to external information	4	19.0
	With access to external information	17	81.0
	Total South	21	100.0

Communities cyclically affected by any of the shocks tend to organize into groups for discussion of alternatives to face the shock. However, Table 5-6 below shows that in the North, regardless of the fact that 83% of communities are affected by the shocks, less than 30% of the communities have specific groups to analyze the vulnerability of their communities. Furthermore in the North, only 19% of the interviewed communities have a Community Safety Net (CSN) and only 25% of the communities have allocated somebody to collect data regarding the most cyclical shocks. On the other hand, in Southern Zambezia, 100% of the communities were affected by some form of shock in the 12 months prior to October 2008. Seventy percent of these communities are organized into vulnerability groups and about 25% have CSN groups. About half of the interviewed communities in the South have someone collecting, analyzing and sharing the information (Table 5-6).

Table 5-6 Communities organized in vulnerability groups

Region		Vulnerability group organized per specific Shock (%)	(CSN) for regular discussions about shocks (%)	Communities with person collecting and analysing risk management data (%)
North	No	72.2	80.6	75.0
	Yes	27.8	19.4	25.0
	Total	100.0	100.0	100.0
South	No	33.3	76.2	52.40
	Yes	66.7	23.8	47.6
	Total	100.0	100.0	100.0

In summary, the mechanisms of early warning and preparedness are weak and in some case are inexistent. The systematization is important for the communities to be able to mitigate the shocks. In the following section, the mechanisms for mitigation of shocks are investigated.

5.6 Mechanisms of Shock Mitigation

Analyzing the data collected from by the discussion groups it is clear that the projects oriented to mitigate shocks are few. The majority of the communities have reported designing no projects to mitigate the impact of shocks. In the North, only 16% of communities reported designing a project for epidemic on animals and only one out of ten communities have a designed a project on epidemic on people (Table 5-7). An insignificant number of communities designed projects or activities for mitigation of other shocks. In the South, a considerable number of communities

designed projects for drought (62%) and epidemic on animals (48%). No projects have been designed in the South for erosion and earthquakes (Table 5-7).

Table 5-7 Communities that have developed a project or taken action to mitigate the risk sources

Region		Project designed for drought	Project designed for erosion	Project designed for Plagues	Project designed for Epidemic on people	Project designed for Epidemic on animals	Project designed for floods	Project designed for earthquake	Project designed for cyclones
North	No	94.4	97.2	97.2	88.9	83.3	100.0	100	88.9
	Yes	5.6	2.8	2.8	11.1	16.7			11.1
	Total	100.0	100.0	100.0	100.0	100.0			100.0
South	No	38.1	100.0	90.5	90.5	52.4	95.2	100	95.2
	Yes	61.9		9.5	9.5	47.6	4.8		4.8
	Total	100.0		100.0	100.0	100.0	100.0		100.0

In order for plans and projects to be effective, the information regarding plans and projects must be shared with other stakeholders for implementation and at times for financing purposes. The communities were asked whom do they share plan and project information with. The survey (complete results found in Appendix 6-20) showed that about 28% of communities in the North share information with other stakeholders, where as 57% of communities in the South share information. Other NGOs were identified as an important stakeholder with whom information should be shared. The survey concluded that communities in the South rely more on other NGOs than those in the North.

Regarding other institutions, 40% of communities share their plans with government institutions (INGC, district administrator) and about 17% share the information with other NGOs. In the North, communities share plans and seek advice from the local government, and in the South, communities seek help and advice from other NGOs and ADPs. About 67% of communities in the Northern region shared their plans with local government. This is because in the Northern regions of Gurue, Namarroi, Gile and Molocue, World Vision does not have ADPs. However the communities in the South (Morrumbala, Namacurra) have World Vision Sponsorship programs that work on ADPs that share the information on shocks given by the communities. Table 5-8 shows that 30% of communities provided the information to the local government, 25% provided information to ADPs, and as much as 22% shared the plans with other NGOs working in the same areas.

Table 5-8 Communities sharing risk mitigation plans by region

Institution	#	Percentage of total	Frequency of North	Percentage of North	Frequency of South	Percentage of South
Emergency Unit	8	14.55%	2	13.33%	6	15.00%
Local Government	22	40.00%	10	66.67%	12	30.00%
ADP	11	20.00%	1	6.67%	10	25.00%
Other NGO	9	16.36%	0	0.00%	9	22.50%
Other	5	9.09%	2	13.33%	3	7.50%

When it comes to revision of the plans, the majority of communities reported revising the plans monthly. About 44% of communities in the North reported having monthly meetings where some of the mitigation plans are revised. In the South, 30% of 21 interviewed communities reported revising their plans monthly. About 18% of communities reported revising the plans sometimes (meaning whenever necessary). There is no significant difference between the percentage of communities revising the plans whenever necessary in the South and in the North. United Nations (UN) recommends that emergency plans to be revised between six months to a year.

Table 5-9 Communities that revise plans and the frequency in which the plans are revised

	Percentage of total	Percentage of North	Percentage of South
Monthly	17.54%	44.44%	30.00%
Quarterly	1.75%	0.00%	5.00%
Semester	5.26%	0.00%	15.00%
Year	8.77%	22.22%	15.00%
Sometimes	17.54%	33.33%	35.00%

5.7 Evaluation of Community Capacity

At the end of each community interview, the team leaders were asked to evaluate the communities in three aspects: (i) the community's ability to organize resources, (ii) community's capacity to implement projects and (iii) community's capacity to maintain a project running (Appendix 6-23). The score ranged from zero to four. Limited communities were assigned a code 1 for each of the category. Those communities with some potential were assigned a code 2. The communities with substantial potential or those called 'nearly there' were given a code 3. And those communities with proven capacity were given a code 4.

The average community capacity index for the overall sample is 5.19. The communities in the North have higher community capacity index (5.58) than those in the South (4.52) (Appendix 6-21). Comparisons by district show that Mopeia and Namarroi are the weakest districts in terms of community capacity index. Mopeia scored only 3.67 out of 12 possible points. Namarroi is not much different than Mopeia. It scored 3.87 out of 12 possible points. On the other hand, Gile is the district with the strongest communities. They score 7 out of 12 possible. . The district of Gile is followed by Alto Molocue with 5.9 points and Gurue with 5.5 points (Table 5-10). One of the main objectives of the OCLUVELA community resiliency component is to increase the community capacity of identification and problem solving of chocks (IPTT in Appendix 6-19).

Table 5-10 Average community capacity Index as a meaning of community’s ability to organize resources, implement projects and maintain projects for risk mitigation by district

	N	Minimum	Maximum	Mean	Std. Deviation
Alto Molocue	10	3.00	11.00	5.9000	3.07137
Gile	8	3.00	11.00	7.0000	2.26779
Gurue	10	3.00	7.00	5.5000	1.50923
Mopeia	3	3.00	5.00	3.6667	1.15470
Morrumbala	8	3.00	7.00	4.2500	1.38873
Namacurra	5	3.00	9.00	5.0000	2.34521
Namarroi	8	3.00	6.00	3.8750	1.12599
Nicoadala	5	3.00	7.00	5.0000	1.41421

APPENDIXES

APPENDIX 1: SURVEY QUESTIONNAIRE



SURVEY QUESTIONNAIRE
November 2008
Multi-Year Assistance Program (MYAP)
Baseline Survey

INTRODUCTION NOTE

Hi. My name is _____ I am doing a survey for World Vision Mozambique. Your household was randomly selected for this interview. The purpose of the interview is to collect data regarding the household livelihoods, and nutrition and health status of household members. Your participation in this interview is voluntary. Nevertheless it important to tell you that in case you participate, the information collected here is entirely confidential. At any circumstance your name will be matched with the provided answers. Can we continue?

A. COMMUNITY IDENTIFICATION

IDENTIFICATION OF THE HOUSEHOLD		CODE
District code	See Codes below (To be completed before the interview except name of HH head)	_ _ _ _
Administrative Post code		_ _ _
Community code		_ _
Team ID		_ _
Interviewer ID		_ _
Number of HH head		_ _
Name of respondent (Optional)		_ _
Data Entry ID		

	DD	MM	YYYY
Date of interview	_ _	_ _	2008

	HOUR	MIN
Interview time	Start of interview	_ _ _
	End of interview	_ _ _

C. AGRICULTURAL PRODUCTION AND COMMERCIALIZATION

PRODUCTION OF BASIC FOOD CROPS									
CROPS	Did your HH cultivate this crop? 1 Yes 0 No → GOT TO NEXT CROP	What is the total area in hectares allocated to this crop?	Quantity harvested			Did you sow seed second season? 1 Yes 0 No → GOT TO NEXT CROP	Quantity harvested		
			Quantity	Unit 1. kg 11. 100kgsack 12 90kgsack 13 70kgsack 14. 60 kg sack 15. 50 kg sack 16. 25 kgsack 17. 12,5kgsack 21. 25Lcan 22. 20Lcan 23. 10Lcan 24. 5Lcan 25. 1Lcan	State 1. fresh 2. Cobs 3. Grain 4. With peals 5. Without peels		Quantity	Unit 1. kg 11. 100kgsack 12 90kgsack 13 70kgsack 14. 60 kg sack 15. 50 kg sack 16. 25 kg sack 17. 12,5kgsack 21. 25Lcan 22. 20Lcan 23. 10Lcan 24. 5Lcan 25. 1Lcan	State 1. fresh 2. Cobs 3. Grain 4. With peals 5. Without peels
C0	C1	C2	C3.1	C3.2	C3.3	C4	C5.1	C5.2	C5.3
Maize	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0
Cassava	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
OFSP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sweet Potato	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

SELLING OF BASIC FOOD CROPS

CROPS	Did your HH sell this crop?	What is the total quantity already sold?			Price per unit of measurement FILL OUT ONE COLUMN ONLY		Quantity expected to be sold		
	1 Yes 0 No → GOT TO NEXT CROP	Quantity	Unit 1. kg 11. 100kgsack 12 90kgsack 13 70kgsack 14. 60 kg sack 15. 50 kg sack 16. 25 kgsack 17. 12,5kgsack 21. 25Lcan 22. 20Lcan 23. 10Lcan 24. 5Lcan 25. 1Lcan	State 1. fresh 2. Cobs 3. Grain 4. With peals 5. Without peels	Price per unit of measurement (WRITE NUMBER IN METICAIS)	Total value received for this quantity (WRITE NUMBER IN HUNDREDS)	Quantity	Unit 1. kg 11. 100kgsack 12 90kgsack 13 70kgsack 14. 60 kg sack 15. 50 kg sack 16. 25 kgsack 17. 12,5kgsack 21. 25Lcan 22. 20Lcan 23. 10Lcan 24. 5Lcan 25. 1Lcan	State 1. fresh 2. Cobs 3. Grain 4. With peals 5. Without peels
C0	C6	C7.1	C7.2	C7.3	C8.1	C8.2	C9.1	C9.2	C9.3
Maize	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Cassava	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
OFSP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sweet Potato	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

MARKETING STRATEGIES FOR MAIN CROPS DURING 2007/08 SEASON

CROPS	Did your HH sell this crop since harvesting? 1 Yes 0 No → GOT TO C7	Which period did you sell the majority of your crops? 1. OctNovDec 2. JanFebMar, 3. AprMayJun 4. JulAugSept (Multiple answers allowed. Specify all months of sale)	What are the main Marketing strategy did you use to sell these crops 1. Sell personally at specific market 2. Sell personally at no specific market 3. Sell through a contract with companies 4. Produce specifically to a single buyer 5. Other (specify)	In which market have you sold the surplus? 1. At home /community market 2. Local market 3. District market 4. Province market 5. Outside the country	Does the household have stocks for selling during the rainy season (Dec/08-Mar/09)? 1 Yes 0 No → GOT TO NEXT CROP
C0	C16	C17	C18	C19	C20
Cereals (maize, maize rice, sorghum, millet)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beans and nuts (Pigeon pea, cowpea, peanuts)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roots and Tubers (Cassava, Potato, OFSP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetables (Tomato, cabbage, lettuce)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fruits (banana, pineapple, orange)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cash crops (soya bean, tobacco, sesame)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CULTIVATION OF NEW CROP VARIETIES	Have your household cultivated these new crop varieties during the last season?	Will your Household plan to cultivate the following new crop varieties in the following season?	IF Not why is the Household not producing these crops 1. No good yield 2. Crops difficult to grow (pests and diseases) 3. Crops expensive to grow (costly) 4. Not enough knowledge 5. No advice to grow these crops 6. Other (specify) (Multiple answers allowed)	
	1 Yes 0 No	1 Yes 0 No → GO TO NEXT QUESTION C10		
	C21	C22	C23	
Hybrid/improved maize (PAN &/, Matuba)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Phaseolus bean	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improved rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cowpea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sorghum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D. THE USE OF INPUTS, SERVICES

We would like to have more information about the usage of inputs and other production technologies in your farm for the LAST 12 MONTHS. Did you used/had access to the following inputs?

NR	QUESTION	OPTIONS	ANSWER
D1	Does the plot have access to Irrigated water/ pumped water?	1 Yes 0 No	<input type="checkbox"/>
D2	Does your Household have access to extension services?	1 Yes 0 No	<input type="checkbox"/>
D3	Did your household use any type of fertilizers?	1 Yes 0 No → GO TO D7	<input type="checkbox"/>
D4	What type of fertilizers does the household use?	1 Minerals (NPK)	1 Yes 0 No → SKIP QUESTION D6
		2 Organic (manure)	1 Yes 0 No
D5	Did your household used pesticides, herbicides, or insecticides	1 Yes 0 No → GO TO D10	<input type="checkbox"/>
D6	Does your household use animal Traction for land preparation?	1 Yes 0 No	<input type="checkbox"/>
D7	Does your HH rent out the animal traction as a form of income?	1 Yes 0 No, but have animals 2 Do not owe animal traction	<input type="checkbox"/>
D8	Does the HH use any mode of transport to take crops from farm to storage/home or market?	1 Yes 0 No → GO TO D15	<input type="checkbox"/>

D9	If yes, what is mode of transportation? (RECORD ONLY THE MAIN IMPORTANT MODE OF TRANSPORT)	1. Head carrying 2. Push cart 3. Wheelbarrow 4. Vehicle 5. bicycle 6. Tractor 7. Use of animal 7. Other	<input type="checkbox"/>
D10	Have your household stored the crops from last season for a minimum period of 6 months?	1 Yes 0 No → GO TO D18	<input type="checkbox"/>
D11	What type of storage facility does your HH have?	1. small house 2. silo grain (metallic, clay, grain, with cement) 3. Crib (circular or rectangular) 4. modern brick and cement warehouse 5. Inside the house (small bed) 6. Metal tank 7. Other (specify)	<input type="checkbox"/>
D12	What is the main technique used to reduce losses of stored crops?	1. Use of improved silos	<input type="checkbox"/>
		2. Use of smoke	<input type="checkbox"/>
		3 Ash	<input type="checkbox"/>
		4 Use of piri piri	<input type="checkbox"/>
		5. use of insecticides (acetylic)	<input type="checkbox"/>
		6. Other (specify)	<input type="checkbox"/>
D13	What is the method used to shell/threshing your basic crops	1. Hand held sellers 2. Small Rotary Hand Sheller 3. Free-Standing manually Operated Shellers 4. bit with sticks 5 hand/fingers/manually 6. feets 7. Other (specify)	<input type="checkbox"/>

D14	During the last season which of the following Natural Resources Management Practices have you used?	OPTIONS	
D14.1	Prepare the fields without burning the crops residue	1. Yes	0. No
D14.2	Rotation of crops with Nitrogen fixing crops (legumes)	1. Yes	0. No
D14.3	Planting of vetiver grass to control erosion	1. Yes	0. No
D14.4	Land resting	1. Yes	0. No
D14.5	Planting of at least three trees in their farm (Agro-forestry)	1. Yes	0. No
D14.6	Use of other erosion control methods in the farm	1. Yes	0. No

D14.7	Water harvesting	1. Yes	0. No
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E. PARTICIPATION IN THE PROJECTS

E1	Is the household participating in any program of NGO?	1 Yes 0 No → GO TO E4	<input type="checkbox"/>
E2	Which NGO is providing these programs?	ADRA	<input type="checkbox"/>
		Africare	<input type="checkbox"/>
		CARA	<input type="checkbox"/>
		FHI	<input type="checkbox"/>
		SCF	<input type="checkbox"/>
		WVI → GO TO E4, OTHERWISE SKIP E3	<input type="checkbox"/>
		Other	<input type="checkbox"/>
E3	Which program(s) is the family participating (MULTIPLE ANSWERS VALID)	Agriculture	<input type="checkbox"/>
		Nutrition	<input type="checkbox"/>
		Health and HIV	<input type="checkbox"/>
		Risk mitigation	<input type="checkbox"/>
		Other	<input type="checkbox"/>
E4	Is the HH head or any other member part of any association?	1 Yes 0 No → GO TO E7	<input type="checkbox"/>
E5	Which Association is this person attending? (MULTIPLE ANSWERS VALID)	1. Woman's First	<input type="checkbox"/>
		2. Community Health Volunteers/Activist	<input type="checkbox"/>
		3. Risk Management Committees	<input type="checkbox"/>
		4. agricultural association	<input type="checkbox"/>
		5. Commercialization association	<input type="checkbox"/>
		6. Other (specify)	<input type="checkbox"/>
E6	Does this member have an active influence (volunteer/activist/extension agent) on this association?	1 Yes 0 No	<input type="checkbox"/>
E7	Have any member of the HH participated in any demonstration about best practices for food production/storage the last 12 months?	1 Yes 0 No	<input type="checkbox"/>
E8	Have any member of the HH participated in any demonstration on farm school about food production/storage the last 12 months?	1 Yes 0 No	<input type="checkbox"/>
E9	Have any member of the HH participated in any seminar about food production/storage the last 12 months?	1 Yes 0 No	<input type="checkbox"/>
E10	Have any member of the household received any information/training from any extension agent about food production/storage the last 12 months?	1 Yes 0 No	<input type="checkbox"/>
E11	Have you graduated from any of the association courses the last 12 months?	1. Member Graduated. 2. Member Still learning 3. Member left the association 4. Never participated in a course	<input type="checkbox"/>
E12	Have any member of the HH got instructions about	1 Yes 0 No	<input type="checkbox"/>

	how to cultivate by elder/community leader the last 12 months?		
E13	Have the HH been involved in any form of seeds multiplication the last 12 months?	1 Yes 0 No	<input type="checkbox"/>
E14	Did the household head or any other member received any information regarding the prices?	1 Yes 0 No → GO TO E16	<input type="checkbox"/>
E15	What was the source of information? (DO NOT READ THE OPTIONS. RECORD THE MOST IMPORTANT SOURCE OF INFORMATION ON PRICES)	1. Radio 2. TV 3. SIMA (Ministry of Agriculture) 4. Papers, news 5. Mobile phone 6. Other	<input type="checkbox"/>
E16	Did the HH use any marketing arrangement the last 12 months?	1 Yes 0 No → GO TO F1	<input type="checkbox"/>
E17	Which instrument did your HH used for marketing arrangements	1. Radio 2. Mobile phone 3. Personal contact	<input type="checkbox"/>

F. ASSETS, WELL BEING, LIVESTOCK, HYGIENE AND SANITATION

Animals	Did your HH raise livestock during the last 12 months? 1 Yes 0 No → GO TO NEXT ANIMAL	How many animals have you got at the moment (including cubs)?
F1	F2	F3
Cattle	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Goats	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Pork	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Chicken	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Duck/Goose/Turvey	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

	QUESTION	OPTIONS	ANSWER
F4	What kind of roofing materials is the MAIN house roof out of? (DO NOT READ THE OPTIONS. RECORD THE RIGHT ANSWER)	1. Grass/cane /palm trees leaves 2. Zinc 3. Luzalite 4. Aluminium sheets 5. Plastic 6. Other	<input type="checkbox"/>
F5	What kind of material are the walls of the MAIN house out of? (DO NOT READ THE OPTIONS. RECORD THE RIGHT ANSWER)	1. Sticks 2. Clay blocks 3. Clay connected to sticks/bamboo 4. Concrete blocks/bricks 5. Grass/Cane/Palm tree leaves 6. Aluminium sheets 7. Stone 8. Other	<input type="checkbox"/>
F6	What was the main source of drinking water during the last 30 days? (DO NOT READ THE OPTIONS. RECORD THE RIGHT ANSWER)	1. Borehole 2. Shallow well (unprotected) 3. Shallow well (protected) 4. River/lake 5. Rain water	<input type="checkbox"/>

		6. Public stand pipe 7. Deep well 8. Natural water source(nascente) 9. Other	
F7	In the last 24 hours did the household treat the drinking water before consumption?	1 yes F9	0 No → GO TO <input type="checkbox"/>
F8	How did the household treat the drinking water during last 24 hours? (DO NOT READ THE OPTIONS. RECORD THE RIGHT ANSWER)	1 Boiled water 2 Filter 3 Place water under sun 4 Nothing 5 Using Clorine Solution /Certeza 6 Other (specify).	<input type="checkbox"/>
F9	What is the main type of sanitation of the HH (DO NOT READ THE OPTIONS. RECORD THE RIGHT ANSWER)	1. Traditional pit toilet (latrine) 2. Improved latrines 3. WC linked to sewer 4. Septic sewage 5. Bush/open place	<input type="checkbox"/>
F10	Did you wash/clean your hands after using the toilet the last time?	1 yes F12	0 No GO TO <input type="checkbox"/>
F11	How did you wash/clean your hands the last time you defecated? (DO NOT READ THE OPTIONS. RECORD THE RIGHT ANSWER)	1. Simple water 2. Water and Ash 3. water and Soap 3. soil (sand) 4. other (specify)	<input type="checkbox"/>
F12	Did you wash your hands before preparing the last meal?	1 yes	0 No <input type="checkbox"/>
F13	Did you wash your fresh vegetables the last time you prepared them?	1 yes	0 No <input type="checkbox"/>

G. HOUSEHOLD INCOME, FOOD PROVISION AND COPING STRATEGIES

NR	QUESTION	CODES	ANSWER
G1	What was the main important source of income of the household for the last 12 months?	SEE CODES BELOW	<input type="text"/>
G2	What was the second most important source of income for the household for the last 12 months?		<input type="text"/>
G3	What was the third most important source of income of the household for the last 12 months?		<input type="text"/>
<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>1. Production/selling of basic food crops</p> <p>2. Production/selling of cash crops</p> <p>3. Production/selling of vegetables</p> <p>4. Production/selling of fruits</p> <p>5. Collection/selling of grass</p> <p>6. Part time job/ganho-ganho</p> <p>7. Fishing/selling of fish</p> <p>8. Livestock/livestock derivatives production and selling</p> <p>9. Informal trade</p> <p>10. Remittances</p> <p>11. Collecting/Selling of firewood/vegetal coal/sticks</p> <p>12. Brewing of traditional drinks</p> </div> <div style="width: 48%;"> <p>13. Transport business</p> <p>14. Formal job</p> <p>15. Selling of Building materials</p> <p>16. Rental of animal traction</p> <p>17. Pension</p> <p>18. Informal small business</p> <p>19. Formal small business</p> <p>20. Art</p> <p>21. Gifts</p> <p>22. Others</p> <p>88. No income</p> </div> </div>			

NR	MONTHS OF INADEQUATE HOUSEHOLD FOOD PROVISIONING	CODING CATEGORIES		
G4	<p>Now I would like to ask you about the household's food supply during different months of the year. When responding to these questions, please think back 12 months.</p> <p>Place A ONE in the Box if the respondent answers yes to the following question. Place zero in the box if the response is No</p> <p>In the past 12 months, were there months in which you did not have enough food to meet the family's needs?</p>	1. Yes. 0. No →IF NO GO TO G6		
G5	<p>DO NOT READ THE LIST OF MONTHS</p> <p>WORKING BACKWARD FROM THE CURRENT MONTH, PLACE A ONE IF THE RESPONDENT IDENTIFIES THAT MONTH AS ONE IN WHICH THE HOUSEHOLD DID NOT HAVE ENOUGH FOOD TO MEET THEIR NEEDS.</p> <p>If yes, Which were the months (in the past 12 months) in which you did not have enough food to meet your family's needs</p>	Jan	1. Yes	0. No
		Feb	1. Yes	0. No
		Mar	1. Yes	0. No
		Apr	1. Yes	0. No
		May	1. Yes	0. No
		Jun	1. Yes	0. No
		Jul	1. Yes	0. No
		Aug	1. Yes	0. No
		Sept	1. Yes	0. No
		Oct	1. Yes	0. No
		Nov	1. Yes	0. No

		Dec	1. Yes	0. No
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G6 Now I would like to ask you about the types of FOOD GROUPS that you and anyone else in the household ate YESTERDAY DURING THE DAY AND NIGHT					
	Name of the food group	Answer 1=yes 0=no		Name of the food group	Answer 1=yes 0=no
G6.1	Cereals (porridge or xima of maize, rice, sorghum, millet, wheat)	<input type="checkbox"/>	G6.9	Eggs (any eggs)	<input type="checkbox"/>
G6.2	Pumpkin, carrots, orange-fleshed sweet potato, other vitamin A rich foods)	<input type="checkbox"/>	G6.10	Fish and Seafood (fress fish, dried fish, shell fish of any type)	<input type="checkbox"/>
G6.3	White potato cassava, yams other roots and tubers white fleshed	<input type="checkbox"/>	G6.11	Pulses, legumes, (pigeon pea, caw pea, common beans, other beans, food made from beans, lentils)	<input type="checkbox"/>
G6.4	Dark green vegetables (pumpkin leaves, cassava leaves, spinach, others)	<input type="checkbox"/>	G6.12	Milk and milk products (cheese, yoghurt, powder milk, condensed milk, milk of any animal)	<input type="checkbox"/>
G6.5	Other vegetables (cabbage, tomato, lettuce, cucumber, egg plant, water melon)	<input type="checkbox"/>	G6.13	Oils, fats (sunflower oil, vegetable oil, other oils, fat, butter, others)	<input type="checkbox"/>
G6.6	Fruits rich in Vitamin A (mango, papaya, other yellow fruits fleshed fruits)	<input type="checkbox"/>	G6.14	Sugar, honey (any sugar/honey)	<input type="checkbox"/>
G6.7	Other fruits (banana, apple, others)	<input type="checkbox"/>	G6.15	Miscellaneous (tea, coffee, cake)	<input type="checkbox"/>

G6.8	Meat, poultry, offal (any beef, pork, lamb, rabbit, chicken, duck, other birds, liver, kidney, heart, other organs)	<input type="checkbox"/>			
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G7	HOUSEHOLD FOOD INSECURITY ACCESS SCALE (HFIAS)	Never	sometimes	often
			1-2 days/week	3-6 days/week
G7.1	In the past 4 (four weeks) was there ever no food at all in your household?	0	1	2
G7.2	In the past four (4) weeks did you or any household member go to sleep at night hungry because there was enough food?	0	1	2
G7.3	In the past four (4) weeks did you or any household member go a whole day without eating anything because there was no food?	0	1	2

H. VITAMIN A AND HOUSEHOLD DIETARY DIVERSITY SCORE

NR	QUESTION	OPTIONS	ANSWERS
H1	Have you ever heard about Vitamin A rich foods?	1 Yes 0 No → GO TO H3	<input type="checkbox"/>
H2	Where did you hear about them? (DO NOT READ OPTIONS AND MARK ALL RESPONSES MENTIONED)	1 Radio 2 NGO 3 WVI 4 Health staff 5 Family 6 Other, (specify) 7 Do not know	Select where did you heard about vitamin A, the MOST <input type="checkbox"/>

NR	QUESTION	OPTIONS	ANSWER
H3	Has any member of the household between 15 to 49 years of age been ill for the last three months or more? Or has anyone died who was ill for three months or more? (PLWHA/CI)	1 Yes 0 No	<input type="checkbox"/>

I. NUTRITION AND FOOD INTAKE FOR CHILDREN 0-59 MONTHS

NR	QUESTION	OPTIONS	ANSWER
I1	Does this household has at least a child from zero to 59 months?	1 Yes 2 0 No → FINISH THE INTERVIEW HERE AND THANK THE RESPONDENT	<input type="checkbox"/>

List all mothers/Caretakers of the household that currently have children 0-59 months of age. Randomly select one of the mothers/caretakers and ask questions about her youngest child.

ORDER	NAME OF MOTHER/CARETAKER	SELECTED
01		<input type="checkbox"/>
02		<input type="checkbox"/>
03		<input type="checkbox"/>
04		<input type="checkbox"/>
05		<input type="checkbox"/>

	CHILD	AGE GROUP (In accordance with age, answer specific questions)	SECTIONS TO ANSWER
Name of child		06-59 MONTHS	ANSWER SECTIONS (I, J, AND K).
Age of child	<input type="text"/> (Months)	00-06 MONTHS	ANSWERS ECTIONS (J, AND K)

SECTION I: START HERE IF YOUNGEST CHILD IS 06-59 MONTHS

I2	Now I would like to ask you about the types of foods that (CHILD NAME) consumed yesterday during the day and night. (READ THE LIST)				
	Name of the food group	Answer 1=yes 0=no		Name of the food group	Answer 1=yes 0=no
I2.1	Grains roots or tubers (porridge of maize/millet/sorghum/rice, cassava, irish potato, OFSP,	<input type="checkbox"/>	I2.5	Eggs	<input type="checkbox"/>
I2.2	Vitamin A rich plant foods (broccoli leaves, spinach, pumpkin , carrots, sweet potato, kale)	<input type="checkbox"/>	I2.6	Pulses/legumes/nuts	<input type="checkbox"/>
I2.3	Other fruits or vegetables (Papaya, mango, orange, carrots, Dark green leaves, juices of any fruit, other)	<input type="checkbox"/>	I2.7	Milk and milk products (breast milk, other types of milk,)	<input type="checkbox"/>

I2.4	Meat, poultry, fish, seafood (chicken, duck, pork, beef, lamb, all types of fish)	<input type="checkbox"/>	I2.8	Food cooked n Oil/Fat	<input type="checkbox"/>
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I3	Did (CHILD NAME) ate the following meals yesterday from morning to evening? (WRITE ANSWER FOR ALL MEALS)	1. Breakfast	1 Ye	0 No	<input type="checkbox"/>
		2. Morning snack	1 Ye	0 No	<input type="checkbox"/>
		3. Lunch	1 Ye	0 No	<input type="checkbox"/>
		4. Afternoon snack	1 Ye	0 No	<input type="checkbox"/>
		5. dinner	1 Ye	0 No	<input type="checkbox"/>
		6. night snack	1 Ye	0 No	<input type="checkbox"/>
		7. Midnight snack	1 Ye	0 No	<input type="checkbox"/>
		8. Other snacks	1 Ye	0 No	<input type="checkbox"/>

SECTION J: START HERE IF A CHILD IS 00-06 MONTHS OF AGE

NR	QUESTION	OPTIONS	ANSWER	
J1	Has (CHILD NAME) ever breastfeed?	1 Yes 0 No → GO TO J5	<input type="checkbox"/>	
J2	Is (CHILD NAME) currently breastfeeding?	1 Yes → GO TO J4 0 No	<input type="checkbox"/>	
J3	If not, how many months did (CHILD NAME) breastfeed?	Write the number of months (IF LESS THAN A MONTH WRITE ZERO)	<input type="text"/>	
J4	Did you give (CHILD NAME) any other any solid food or juice/fruits?	1 Yes → GO TO J6 0 No	<input type="checkbox"/>	
J5	What did (CHILD NAME) ate the last 24 hours before today? (READ AND MARK ALL OPTIONS. WRITE ONE IF A CHILD ATE THE ITEM AND ZERO IF FOOD CATEGROY NOT EATEN)	1. Breast milk	1 Yes 0 No	<input type="checkbox"/>
		2. Boiled/Plain water	1 Yes 0 No	<input type="checkbox"/>
		3. Porridge	1 Yes 0 No	<input type="checkbox"/>
		4. Other liquids (tea, juice)	1 Yes 0 No	<input type="checkbox"/>
		5. Other foods	1 Yes 0 No	<input type="checkbox"/>

J6	<p>IF yes, at which age did (CHILD NAME) drink water or eaten solid foods/juice/fruits for the first time</p> <p>(DO NOT READ THE OPTIONS. RECORDE THE RIGHT ANSWER)</p>	<p>Less than 4 months From 4-6 months From 7-12 months 13 months or higher</p>	<input type="checkbox"/>
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NR	QUESTION	OPTIONS	ANSWER
J7	Has (CHILD NAME) suffered diarrhoea in the last 2 weeks before the survey?	1 Yes 0 No → GOT TO J12	<input type="checkbox"/>
J8	During the last diarrhoea episode, did the mother continue breastfeeding?	1. Yes 0 No → GOT TO J10 2 No longer breastfeeding → GO TO J10	<input type="checkbox"/>
J9	If (CHILD NAME) continued to breastfeed, did you offer more or less breast milk, or the same as usual?	1. More breast milk than usual 2. Less Breast milk than usual 3. Same breast milk as usual 4. Mother/caregiver stopped breast milking completely 5. Do not know	<input type="checkbox"/>
J10	<p>During the last diarrhoea episode what did (name) eat?</p> <p>(DO NOT READ OPTIONS. RECORD ALL MENTIONED)</p>	<p>1. Breast milk 2. Home made serum (water and salt) 3. Pack of Oral Rehydration Salt (ORS) 4. Other milk 5. Tea/Juice 6. Coconut water 7. Water 8. Refreshments with gas (coca-cola) 9. Nothing</p>	<input type="checkbox"/>
			<input type="checkbox"/>
J11	During the last diarrhoea episode, did (CHILD NAME) consume less liquids more liquids than usual or the same as usual	1. Same as usual 2. Less liquids than usual 3. Extra liquids than usual 4. Do not know	<input type="checkbox"/>
J12	Did (CHILD NAME) have any illness with coughs during the last two weeks?	1 Yes 0 No → GOT TO J14	<input type="checkbox"/>
J13	During the cough period did the child have any problems in breathing/or blocked nose?	1 Yes 0 No	<input type="checkbox"/>
J14	Did the child have fever during the last two weeks?	1 Yes 0 No	<input type="checkbox"/>

<p>J20</p>	<p>Where does a mother/caretaker usually ask for help when a kid is sick (diarrhoea, fever, coughs)?</p>	<ol style="list-style-type: none"> 1. Hospital/Health Centre/health facility 2. Health Activist 3. Mobile Brigade 4. Private doctor 5. Traditional doctor 6. Pharmacy 7. Family or friend 8. Gave medicine at home 9. Other 	
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K. CHILD ANTHROPOMETRY

Using the list of all children bellow 59 months of age, fill the box below.

Age	0-5 months	6-23	24-59 months
Unit of measurement	Weight only	Weight, length (lying down), OEDEMA	Weight, height (standing), OEDEMA

If do not know the age (months) of a child, measure the length of a child (laying position). If the length is less than 85 cm, keep the measure. If the length is higher than 85 cm, measure the weight as well.

Data collection date (DD / MM / YYYY) : |__|_| / |__|_| / |__|_|_|_|

No of member (as in sec A)	Name of a child	Gender 1M 2F	Birth date DD / MM / YY	Birth date obtained from maternal card? 1 ye 0 No	Age (months) (ONLY IF DATE OF BIRTH IS NOT KNOWN)	Weight (kg)	Height/ length (cms)	Measure 1 length 2 weight	OEDEMA present 1 Yes 0 No
K1	K2	K3	K4	K5	K6	K7	K8	K9	K11
		□	__/__/__	□	□□	__,_	____,__	□	□
		□	__/__/__	□	□□	__,_	____,__	□	□
		□	__/__/__	□	□□	__,_	____,__	□	□
		□	__/__/__	□	□□	__,_	____,__	□	□
		□	__/__/__	□	□□	__,_	____,__	□	□

THIS TABLE IS VALID FOR INTERVIEWS IMPLEMENTED IN NOVEMBER

CHILD AGE IN MOTHS	Jan-04	59	Jan-05	47	Jan-06	35	Jan-07	23	Jan-08	11
	Feb-04	58	Feb-05	46	Feb-06	34	Feb-07	22	Feb-08	10
	Mar-04	57	Mar-05	45	Mar-06	33	Mar-07	21	Mar-08	9
	Apr-04	56	Apr-05	44	Apr-06	32	Apr-07	20	Apr-08	8
	May-04	55	May-05	43	May-06	31	May-07	19	May-08	7
	Jun-04	54	Jun-05	42	Jun-06	30	Jun-07	18	Jun-08	6
	Jul-04	53	Jul-05	41	Jul-06	29	Jul-07	17	Jul-08	5
	Aug-04	52	Aug-05	40	Aug-06	28	Aug-07	16	Aug-08	4
	Sep-04	51	Sep-05	39	Sep-06	27	Sep-07	15	Sep-08	3
	Oct-04	50	Oct-05	38	Oct-06	26	Oct-07	14	Oct-08	2
	Nov-04	49	Nov-05	37	Nov-06	25	Nov-07	13	Nov-08	1
	Dec-04	48	Dec-05	36	Dec-06	24	Dec-07	12		

APPENDIX 2: HOUSEHOLDS CHARACTERISTICS

Appendix 6-1 Percentage of Households according to the material covered by their houses

	North		South	
	Frequency	Valid Percent	Frequency	Valid Percent
grass/sticks/palm trees	921	93.03	582	88.99
Zinc	58	5.86	66	10.09
aluminum sheets	2	0.20	3	0.46
Luzalite	0	0.00	1	0.15
Plastic	9	0.91	0	0.00
Other			2	0.31
Total	990	100.00	654	100.00

Appendix 6-2 Percentage of Households according to the walls of their houses

	North		South	
	Frequency	Valid Percent	Frequency	Valid Percent
Sticks	83	8.38	65	9.94
Clay blocks	867	87.58	319	48.78
Clay connected to stick bamboo	16	1.62	242	37.00
Concrete block/bricks	8	0.81	11	1.68
Grass/Cane/Palm tree	13	1.31	12	1.83
Other	3	0.30	5	0.76
Total	990.00	100.00	654	100.00

Appendix 6-3 Percentage of Households according to their source of drinking water

	North		South	
	Frequency	Valid Percent	Frequency	Valid Percent
Borehole	127	12.83	255	38.99
shallow well (unprotected)	586	59.19	306	46.79
shallow well (protected)	82	8.28	58	8.87
River/lake	190	19.19	33	5.05
Public stand pipe	5	0.51	1	0.15
Rain water	0	0	1	0.15
Total	990	100.00	654	100.00

Appendix 6-4 Percentage of Households according to the type of sanitation used

	North		South	
	Frequency	Valid Percent	Frequency	Valid Percent
Traditional pit toilet (latrine)	323	32.63	140	21.41
Improved Latrines	11	1.11	29	4.43
WC linked sewer	2	0.20	4	0.61
Septic sewage	5.00	0.51	1	0.15
Bush/open place	649	65.56	480	73.39
Total	990	100.00	654	100.00

APPENDIX 3. AGRICULTURE

Appendix 6-5: The Agriculture Indicator Performance Tracking Table

World Vision MYAP Agriculture Indicators Performance Tracking Table (IPTT)

INDICATOR		Baseline 2008 (%)	Increase/decrease needed	
SO1:	Household Livelihood Capabilities Protected and Enhanced			
Impact indicator 1.1	AVERAGE HOUSEHOLD DIETARY DIVERSITY SCORE (FFP)	4.68	15% increase	
Impact indicator 1.2	AVERAGE NUMBER OF MONTHS OF ADEQUATE FOOD PROVISIONING (FFP, MISSION)	8.18	22% increase	1
Impact indicator 1.3	AVERAGE HOUSEHOLD INCOME IN TARGETED AREAS (MISSION)	677.87	15% increase	7
IR 1.1	Increased Agricultural Production and Marketing			
Monitoring indicator 1.1.1	Gross margin in targeted areas for maize, cassava and sweet potato (MISSION)	524.31	10% increase	5
Monitoring indicator 1.1.2	Productivity (volume per hectare) for maize (MISSION)	537.32	20% increase	6
	Productivity (volume per hectare) for cassava (MISSION)	390.40	15% increase	4
	Productivity (volume per hectare) for sweet potato (MISSION)	116.02	20% increase	1
Monitoring indicator 1.1.4	Percentage of farms using improved technologies (irrigation, fertilizers, pesticides, animal traction)	17.21	35% increase	5
Monitoring indicator 1.1.7	Gross sales of rural agricultural producers (MISSION)	663.52	10% increase	7
IR 1.2	Strengthened Small-Scale Enterprise and Associations development			
Monitoring indicator 1.2.1	Value of sales per FA		15% increase	
Monitoring indicator 1.3.1	Number of FAs maintaining production and accounting records		45% increase	
Monitoring indicator 1.1.9	Percentage of Farmers selling their produce during the rain season	13.90	15% increase	2
Monitoring indicator 1.2.5	Average monthly sales from Women First network of entrepreneurs		65% increase	\$
Monitoring indicator 1.2.6	Average monthly income per Women First network entrepreneur		10% increase	\$
Monitoring indicator 1.2.7	Average monthly income per Women First network graduate entrepreneur		7% increase	\$
Monitoring indicator 1.2.8	Total monthly savings passed to households			\$
Monitoring indicator 1.2.2	Percentage of households growing cash crops for specific markets	13.00	10% increase	2
Monitoring indicator 1.2.3	Percentage of farmers providing animal traction services for income	3.20	15% increase	3

Monitoring indicator 1.2.4	Percentage of farmers using agro-based employment opportunities created	19.20	10% increase	2
Monitoring indicator 1.3.2	Percentage of households using improved storage facilities	5.60	25% increase	3
IR 1.3	Improved Access to agricultural services			
Monitoring indicator 1.1.5	Percentage of farmers receiving extension services (MISSION)	15.40	10% increase	2
Monitoring indicator 1.1.8	Percentage of beneficiaries (farmers) using a project defined minimum number (4) of sustainable agriculture technologies (FFP)	14.50	10% increase	2
Monitoring indicator 1.1.14	Percentage of farmers adopting new crop varieties	60.30	10% increase	7
Monitoring indicator 1.3.3	Percentage of farmers accessing Entrepreneurial /agricultural inputs	2.90	15% increase	1
Monitoring indicator 1.3.4	Percentage of farmers involved in seed multiplication system	10.70	15% increase	2
Monitoring indicator 1.3.5	Percentage of farmers using improved shelling methods	0.40	10% increase	1
Monitoring indicator 1.1.12	Percentage of households using communication networks system	0.70	5% increase	

Appendix 6-6 Percentage of households producing these new crop varieties on top of their previously cultivated crops

<i>New variety</i>	<i>Total program area%</i>	<i>Northern Districts%</i>	<i>Southern Districts%</i>
Maize	23.1	23.0	23.0
Butter beans (feijao Vulgar)	16.2	22.0	7.5
Cowpeas	37.0	36.0	38.0
OFSP	11.7	8.9	16.0
Hybrid rice	17.8	12.0	26.0
Sorghum	15.4	17.0	12.0
Other (sesame)	8.4	8.9	7.5

Appendix 6-7 Household Dietary Diversity Score

District	Mean HDDS	Number of Observations	Std. Deviation
Alto Molocue	5.1369	241	1.83312
Gile	4.1190	252	1.45644
Gurue	4.3728	279	1.33739
Mopeia	4.3253	83	1.63131
Morrumbala	5.1048	248	1.92709
Namacurra	4.6026	156	1.44436
Namarroi	4.5000	218	1.51566
Nicoadala	5.1916	167	1.46828
Total	4.6758	1644	1.63911

Appendix 6-8 Percentage of households having adequate household food provisioning per month and by district.

<i>Months of Adequate Household Food Provisioning</i>	<i>Entire Program Area%</i>	<i>Northern Districts%</i>	<i>Southern Districts%</i>
January	30	30	29
February	48	50	46
March	77	74	81
April	94	94	95
May	97	96	97
June	97	97	96
July	95	96	94
August	89	93	85
September	76	88	61
October	57	78	32
November	33	55	9
December	24	40	7

Appendix 6-9: Percentage of households storing their crops for more than 6 months

Answer	Percentage of overall sample	Northern Zambezia	Southern Zambezia
No	21.1	14.3	31.3
Yes	78.9	85.7	68.7
Total	100.0	100.0	100.0

Appendix 6-10. Percentage of Households eating the food items

	Did not take these food items		Had eaten these food items	
	frequency	percent	frequency	percent
A_Cereals	293	17.82%	1351	82.18%
B_pumpkin	1483	90.21%	161	9.79%
C_sweet_potato	927	56.39%	717	43.61%
D_Vegetables	754	45.86%	890	54.14%
E_Other_Vegetables	1264	76.89%	380	23.11%
F_Fruits_Vitamin_A	72	4.38%	1572	95.62%
G_Other_Fruits	1197	72.81%	447	27.19%
H_Meat	1348	82.00%	296	18.00%
I_Eggs	1410	85.77%	234	14.23%
J_Fish	724	44.04%	920	55.96%
K_Pulses_beans	1055	64.17%	589	35.83%
L_Cheese_Iogurt	1618	98.42%	26	1.58%
M_Oil_Fat	1111	67.58%	533	32.42%
N_Sugar_honey	1463	88.99%	181	11.01%
O_Other_fooditens	1516	92.21%	128	7.79%

Appendix 6-11 Percentage of Households breeding Livestock by District.

Animal	Alto Molocue	Gile	Gurue	Mopeia	Morrumbal a	Namacurra	Namarroi	Nicoadala	ALL
Cattle	0	0.4	0	0	2	0	0.5	1.2	0.5
Goat	6.6	24.6	7.5	14.5	34.7	11.5	14.2	6.0	15.6
Pork	27.0	26.3	28.7	15.7	15.3	12.2	25.2	10.2	20
Chicken	72.6	46.0	82.4	57.8	71.4	52.6	57.3	71.3	65.2
duck	4.1	4.8	8.2	27.7	12.9	12.8	9.6	15.0	10.1

APPENDIX 4: HEALTH AND NUTRITION

Appendix 6-12: Health and Nutrition Indicator Performance Tracking Table

World Vision MYAP Nutrition and Health Indicators Performance Tracking Table (IPTT)

	INDICATOR	Baseline 2008 (%)	Increase/decrease needed	
SO2	Improved Health and Nutritional Status			
Impact indicator 2.1	PERCENTAGE OF STUNTING (<-2 Z-SOCRE HEIGHT/AGE) IN CHILDREN 6 TO 59 MONTHS	36.30	5% decrease	
Impact indicator 2.2	PERCENTAGE OF UNDERWEIGHT (AWZ<-2 Z-SOCRE WEIGHT/AGE) CHILDREN 0 TO 59 MONTHS	23.70	5% decrease	
IR 2.1	Dietary and health care practices for children <5yrs, PLW, and PLWHA improved			
Monitoring indicator 2.1.2	Proportion of breastfed children 6 to 23 months who received minimum dietary (food group) diversity in 24hrs preceding survey	58.26	20% increase	
Monitoring indicator 2.1.3	Proportion of non-breastfed children 6 to 23 months who received minimum dietary (food group) diversity in 24hrs preceding survey	49.43	20% increase	
Monitoring indicator 2.2.4	Proportion of children 6-23 months of age with 3 appropriate infant and young child feeding practices (continued breastfeeding, age appropriate dietary diversity, age appropriate frequency of feeding)	43.96	30% increase	
Monitoring indicator 2.1.5	Proportion of children 0 to 59 months that had diarrhea during the last previous 2 weeks and were taken to a health facility	39.00	30% increase	
Monitoring indicator 2.1.6	Proportion of children 0 to 59 months that had fever and/or respiratory infections during the last previous 2 weeks and were taken to a health facility	58.00	25% increase	
Monitoring indicator 2.1.7	Proportion of children 0 to 59 months that had diarrhea during the last 2 weeks before the survey	42.00	5% decrease	
Monitoring indicator 2.1.8	Proportion children given extra liquids during diarrhea episodes (6 to 59 months)	30.60	25% increase	
Monitoring indicator 2.1.9	Proportion children continued breastfeed during diarrhea episodes (0 to 24 months)	40.04	20% increase	
Monitoring indicator 2.1.10	Proportion of children that are exclusively breastfeed until the age of 6 months	11.00	10% increase	
Monitoring indicator 2.1.11	Proportion of caregivers demonstrating proper water hygiene behaviour (1) (FFP)	29.00	20% increase	
Monitoring indicator 2.1.12	Proportion of caregivers demonstrating proper food hygiene behaviour (FFP)	11.00	20% increase	
Monitoring indicator 2.1.13	Proportion of women who consume food rich in vitamin A (excluding mango, sazonal)	22.76	20% increase	
Monitoring indicator 2.1.14	Proportion of PLWHA/CI eating the recommended number of food groups	22.00	20% increase	
IR 2.2	Nutrition status of malnourished or at risk children, PLW, PLHIV AIDS improved			
Monitoring indicator 2.2.1	Number of children graduated from PD Hearth	n/a		

Monitoring indicator 2.2.2	Number of Pregnant Lactant Woman referred to the CHVs and MFG for nutrition status rehabilitation	n/a	
Monitoring indicator 2.2.3	Number of PLWHA/CI with home gardens or connected to farmers associations	n/a	

Appendix 6-13 Percentage of Households that wash hands and the product they use

	Frequency	Valid Percent
Simple water	747	52.64%
Water and Ash	173	12.19%
Water and Soap	492	34.67%
Soil (sand)	7	0.49%
Total Wash	1419	100.00%
Total	1644	
DID NOT wash	225	13.69%

Appendix 6-14 Percentage of communities and the type of product used to wash their hands

	Frequency	Percent
DID NOT wash hands	92	5.60
Simple water	1552	94.40
Total	1644	100

Appendix 6-15 Percentage of households with a member chronically ill

Region	Member 15-49 Years ill	Frequency	Percent
North	No	936	94.5
	Yes	54	5.5
	Total	990	100.0
South	No	592	90.5
	Yes	62	9.5
	Total	654	100.0

Appendix 6-16 Average Infant Dietary Diversity score per district

Dist Cod	N	Minimum	Maximum	Mean	Std. Deviation
Alto Molocue	127	1.00	8.00	3.8583	1.33169
Gile	158	1.00	6.00	3.6519	1.26152
Gurue	167	.00	7.00	3.6228	1.13338
Mopeia	48	1.00	7.00	3.6042	1.19822
Morrumbala	164	1.00	7.00	4.0122	1.34296
Namacurra	99	.00	7.00	3.6869	1.26690
Namarroi	139	1.00	7.00	3.5396	1.19338
Nicoadala	105	2.00	7.00	4.0667	.99292

Appendix 6-17: Average Number of meals given to a child per district

Dist_Cod	N	Minimum	Maximum	Mean	Std. Deviation
Alto Molocue	127	2.00	7.00	3.4488	1.06688
Gile	158	2.00	6.00	3.5443	.81072
Gurue	167	1.00	6.00	3.7665	1.01166
Mopeia	48	1.00	6.00	3.5625	1.31935
Morrumbal a	164	1.00	8.00	3.9451	1.34872
Namacurra	99	1.00	6.00	3.0707	1.12715
Namarroi	139	2.00	6.00	3.2806	.85150
Nicoadala	105	2.00	6.00	3.3143	.89135
ALL Sample	1007	1.00	8.00	3.5283	1.08071

Appendix 6-18 Percentage of households and the nutrition status per age group

Anthropometric Indicators by Age group	Stunting (HAZ)	Underweight (WAZ)	Wasting (WHZ)
	Moderate and Severe%	Moderate and Severe%	Moderate and Severe%
0-5 months	Not valid	4.8	Not valid
6-8 months	16.8	17.6	10.4
9-11 months	18.3	25.2	10.6
12-23 months	33.8	36.3	14.8
24-59 months	43.5	23.4	3.3
Total	36.3	23.7	8.1

APPENDIX 5. COMMUNITY RESILLIENCY



SURVEY QUESTIONNAIRE
November 2008
Multi-Year Assistance Program (MYAP)

Group Questionnaire

INTRODUCTION NOTE

Hi. My name is _____. I am doing a survey for World Vision Mozambique. Your household was randomly selected for this interview. The purpose of the interview is to collect data regarding the household livelihoods, and nutrition and health status of household members. Your participation in this interview is voluntary. Nevertheless it important to tell you that in case you participate, the information collected here is entirely confidential. At any circumstance your name will be matched with the provided answers

A. COMMUNITY IDENTIFICATION

COMMUNITY IDENTIFICATION		CODE
District code	SEE CODES BELOW (TO BE COMPLETED BEFORE THE INTERVIEW EXCEPT NAME OF HH HEAD)	_ _ _ _
Administrative Post code		_ _ _
Community code		_ _
Team ID		_
Interviewer ID		_
Number of community		_ _
Data Entry ID		_ _

	DD	MM	YYYY
Date of interview	_	_	2008

	HOUR	MIN
Interview time	Start of interview	_ _ _
	End of interview	_ _ _

COMMUNITY RESILLIENCY

NR	QUESTION	OPTIONS	ANSWER
H1	Have your community ever been affected by any abnormal situation (shocks) that affected your capacity of maintaining your lifestyle (food consumption, livestock/assets maintenance) during the last 12 months?	1 Yes → GO TO H3 0 No	<input type="checkbox"/>

	QUESTION	OPTIONS	ANSWER
H2	If yes, which situation has your community suffered during the last 12 months? (DO NOT READ THE OPTIONS. WRITE THE ANSWERS ON THE SELECTED BOXES. MULTIPLE ANSWERS VALID)	Has this community been affected by this shock during the past 12 months? 1. Yes 0. No	Does this community has Early Warning system to respond to this shock? 1. Yes 0. No
	1. Drought/lack of water	<input type="checkbox"/>	<input type="checkbox"/>
	2. Erosion	<input type="checkbox"/>	<input type="checkbox"/>
	3. Pests/diseases above the normal level	<input type="checkbox"/>	<input type="checkbox"/>
	4. Livestock epidemics(diseases)	<input type="checkbox"/>	<input type="checkbox"/>
	5. People epidemics (cholera)	<input type="checkbox"/>	<input type="checkbox"/>
	6. Floods	<input type="checkbox"/>	<input type="checkbox"/>
	7. Earthquake	<input type="checkbox"/>	<input type="checkbox"/>
	8. Cyclones	<input type="checkbox"/>	<input type="checkbox"/>
	9. Other 1(specify)	<input type="checkbox"/>	<input type="checkbox"/>
	10. Other2 (specify)	<input type="checkbox"/>	<input type="checkbox"/>

H3	Is this community organized in groups for risk analysis of risk management committees?	1. Yes 0. No	<input type="checkbox"/>
H4	Do the risk management committees design physical plans for the risk management as a result of community risk analysis?	1. Yes 0. No	<input type="checkbox"/>
H5	Among the physical plans is there any physical infrastructure designed for the management of shocks at community level?	1. Yes 0. No	<input type="checkbox"/>
H6	State the projects designed fir this community? (Do not read the questions. Write the right answers on the related boxes. Ask why they designed a project to establish the project reasons).		
	TYPE OF RISK	Did your community design a project for this shock?	Give explanations (Please provide more examples of designed projects)
	1. Drought/lack of water	1-Yes 0=No	

	2. Erosion	1-Yes 0=No	
	3. Pests/diseases above the normal level	1-Yes 0=No	
	4. Livestock epidemics(diseases)	1-Yes 0=No	
	5. People epidemics (cholera)	1-Yes 0=No	
	6. Floods	1-Yes 0=No	
	7. Earthquake	1-Yes 0=No	
	8. Cyclones	1-Yes 0=No	
	9. Other 1(specify)	1-Yes 0=No	
	10. Other2 (specify)	1-Yes 0=No	

H7	Does your community receive external information regarding the early warning related to the most recent shock?		1. Yes 0. No	<input type="checkbox"/>
H8	Does your community have a community safety net (risk management committee) for periodic discussion regarding risk management?		1. Yes 0. No	<input type="checkbox"/>
H9	Does the community safety net discuss the options to mitigate the impact of shocks to the most vulnerable community members (elders and children)?		1. Yes 0. No	<input type="checkbox"/>
H10	Does the community have someone responsible for collecting and analyzing information such as (rainfall) for monitoring the frequent shocks?		1. Yes 0. No	<input type="checkbox"/>
H11	Does the community have a contingency plan for the most frequent shocks?		1. Yes 0. No	<input type="checkbox"/>
H12	How frequent are the plans revised?	Monthly	1. Yes 0. No	<input type="checkbox"/>
		Quarterly	1. Yes 0. No	<input type="checkbox"/>
		Every six months	1. Yes 0. No	<input type="checkbox"/>
		Annually	1. Yes 0. No	<input type="checkbox"/>
		Whenever necessary	1. Yes 0. No	<input type="checkbox"/>
H13	Are the contingency plane shared with other actors (government/NGOs)?		1. Yes 0. No	1. Sim 0. Não
H14	Which institution has access to the community plans? (Multiple answers valid. Mark all alternatives)	Emergency Operational Centre (INGC)	1. Yes 0. No	<input type="checkbox"/>
		Local government (community leader, secretary)	1. Yes 0. No	<input type="checkbox"/>
		ADP/ World Vision	1. Yes 0. No	<input type="checkbox"/>
		Other NGO(specify)	1. Yes 0. No	<input type="checkbox"/>
		Other (specify)	1. Yes 0. No	<input type="checkbox"/>

H15	IDENTIFICATION OF COMMUNITY CAPACITY (TO BE ANALYSED BY TEAM LEADER. DO NOT ASK THESE QUESTIONS, FILL THE QUESTIONNAIRE BASED ON YOUR PERCEPTION OF THE COMMUNITY)	1=No/Very limited	2=Some times	3=Substantial (frequently)	4=Yes/Almost always
H15.1	The community has capacity to organize the resources available and the institutions/community for the implementation of sustainable risk mitigation plans.	1	2	3	4
H15.2	The community has capacity to implement the project.	1	2	3	4
H15.3	A sustainable network exist and was established in the community for the mitigation of shocks	1	2	3	4

Appendix 6-19 Community resiliency Indicator Performance Tracking Table

World Vision MYAP Community Resiliency Indicators Performance Tracking Table (IPTT)

	INDICATOR	Baseline (%), All districts	Baseline (Morrumbala and Mopeia) % (number in parenthesis)	Increase/decrease needed	FY03 target	
					All Districts	(M M
SO3	Community Resilience Protected and Enhanced					
Impact indicator 3.1	Number of assisted communities with improved community capacity (FFP)	0.00	0.00	75% increase	43	
	Community capacity Index measured (capacity to organize resources, implement and sustain the project)	5.19	4.09 (16)	50% increase	7	
IR 3.1	Communities Able to Prepare and Mitigate Recurrent and Cyclical Shocks					
Monitoring indicator 3.1.1	percentage of communities with disaster/early warning system in place (FFP) for at least four of the twelve risk sources analysed	9.80	18.2(2)	70% increase	78.20(45)	78.
Monitoring indicator 3.1.2	percentage of communities with safety nets (vulnerable groups) to address the needs of their most vulnerable members (FFP)	21.10	18.2(2)	70% increase	78.20(45)	78.
Monitoring indicator 3.1.4	Community aware of their capacities, vulnerabilities and potential shocks. Community collects and uses data to make sound decisions on activities that decrease vulnerability, and increase preparedness and response to shocks	33.30	9.1(1)	80% increase	89.1(51)	89.
Monitoring indicator 3.1.6	percentage of communities with improved physical infrastructure to mitigate the impact of shocks in place	24.60	9.1(1)	10% increase	19.1(11)	19.
Monitoring indicator 3.1.7	percentage of communities that design activities/programs (risk reduction/mitigation projects) designed and managed by the community with local resources	8.80	18.2(2)	70% increase	78.20(45)	78.

Appendix 6-20: Number of communities affected by an abnormal situation that have affected the community lifestyle.

	Frequency	Percentage
Not affected	6	10.5
Yes	51	89.5
Total	57	100.0

Appendix 6-21 Percentage of communities with an Early Warning (EW) system in place

region		EW for draught	EW for erosion	EW for Plagues	EW for Epidemic on people	EW for Epidemic on animals	EW for floods	EW for earthquake	EW for cyclones
North	No	70.0	100.0	80.0	86.7	73.3	90.0	100.0	86.7
	Yes	30.0		20.0	13.3	26.7	10.0		13.3
	Total	100.0		100.0	100.0	100.0	100.0		100.0
South	No	47.6	100.0	85.7	71.4	57.1	71.4	95.2	85.7
	Yes	52.4		14.3	28.6	42.9	28.6	4.8	14.3
	Total	100.0		100.0	100.0	100.0	100.0	100.0	100.0

Appendix 6-22 Percentage of Communities with and shared the contingency plans (CP)

Region		Communities with contingency plans (CP) for the most frequent risk sources (%)	Communities that share the contingency plans with other NGOs or government agencies (%)
North	No	72.2	77.8
	Yes	27.8	22.2
South	No	42.9	42.9
	Yes	57.1	57.1

Appendix 6-23 Average community capacity Index as a meaning of community's ability to organize resources, implement projects and maintain projects for risk mitigation by region

	N	Minimum	Maximum	Mean	Std. Deviation
Overall sample	57	3.00	11.00	5.1930	2.14175
Northern districts	36	3.00	11.00	5.5833	2.33452
Southern districts	21	3.00	9.00	4.5238	1.60060