REPORT

INVC Nutritional Follow-Up Survey

LILONGWE, MCHINJI, BALAKA, MACHINGA AND MANGOCHI

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LUANAR

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LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
DDDS	Dietary Diversity Score
EBF	Exclusive Breastfeeding
FtF INVC	Feed the Future, Intergrating Nutrition in Value Chains
GMP	Growth Monitoring and Promotion
HDD	High Dietary Diversity
MDD	Minimum Dietary Diversity
LDD	Low Dietary Diversity
HIV	Human Immunodeficiency Virus
INVC	Intergrating Nutrition in Value Chains
IYCF	Infant and Young Child Feeding
IYCN	Infant and Young Child Nutrition
LUANAR	Lilongwe University of Agriculture and Natural Resources
MDHS	Malawi Demographic and Health Survey
NASFAM	National Smallholders Association of Malawi
CADECOM	Catholic Development Commission in Malawi
FUM	Farmers Union of Malawi
NSO	National Statistical Office
TA	Traditional Authority
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

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We thank all data collection supervisors, enumerators and data entry clerks for their dedication, cooperation and hard working spirit throughout the entire survey period. Above all we thank The Almighty God for the travel mercies and keeping the entire survey team in good health throughout the survey period.

EXECUTIVE SUMMARY

Introduction

This report presents findings of the beneficiary based follow up nutrition representative survey conducted in Mchinji, Lilongwe, Balaka, Machinga and Mangochi districts where Integrating Nutrition in Value Chains (INVC)" Project is being implemented. The objectives of the current study were to establish:

1. Prevalence of children 6-23 months receiving a minimum acceptable diet
2. Dietary Diversity for women aged 15 – 49 years
3. Percent of 0 -5 months children exclusively breastfed in the five districts

Methodology for data collection and analysis

The survey used a two-stage sampling methodology. The first stage led to selection of total number of beneficiaries to participate in the survey from each district. The second level of sampling was selection of beneficiary households done based on proportion to beneficiary population size to ensure adequate representation and give equal opportunity to each beneficiary. The total number of beneficiaries sampled was 1,608 (331 from Lilongwe, 359 Mchinji, 305 Balaka, 307 Machinga and 306 from Mangochi). Four teams carried out fieldwork from July to August 2015. Data entry started concurrently and was completed by mid-September 2015.

Major findings

Main indicators established by the baseline survey

The current study was conducted to determine a number of key indicators that would assist in monitoring and evaluating the activities implemented in the five districts. These are summarized in the Table that follows:

Summary of the main baseline survey indicators by district

Parameter	**Lilongwe**	**Mchinji**	**Balaka**	**Machinga**	**Mangochi**	**Overall 2015**	***2014****
Proportion of children 6-23 months who received minimum acceptable diet:							
Breastfed children 6 – 23 months	**n=92**	**n=120**	**n=126**	**n=142**	**n=125**	**n=605**	
	19.6	17.5	27.0	13.4	17.6	18.8	***32.5***
Non-breastfed children 6 – 23 months	**n=4**	**n=19**	**n=5**	**n=6**	**n=3**	**n=37**	
	25.0	10.5	60.0	33.3	0.0	21.6	***40.9***
All children 6-23 months	20.2	16.5	28.2	14.2	17.2	19.0	
Proportion of children who received minimum meal frequency:							
Breastfed children 6-8 months	**n=9**	**n=9**	**n=11**	**n=21**	**n=21**	**n=71**	
	83.7	81.7	91.3	90.8	91.2	88.2	***84.4***

Breastfed children 9-23 months	**n=56** 65.2	**n=80** 72.5	**n=89** 76.2	**n=95** 75.4	**n=82** 75.2	**n=402** 73.4	***73.2***
Non-breastfed children 9-23 months	**n=4** 100	**n=19** 68.4	**n=5** 100	**n=6** 66.7	**n=3** 100	**n=37** 78.4	***31.1***
Percent 0-5 months children exclusively breastfed	**n=16** 66.7	**n=24** 70.6	**n=15** 83.3	**n=11** 50.0	**n=21** 60.0	**n=87** 65.4	***71.9***
Women 15-49 years who ate diversified diet	**n=259** 66.4	**n=276** 60.7	**n=221** 63.3	**n=232** 63.6	**n=257** 70.0	**n=1245** 64.6	***74.6***
Mean number of foods consumed by women 15 to 49 years of age	**n=390** 3.8	**n=456** 3.6	**n=349** 3.8	**n=365** 3.9	**n=367** 4.2	**n=1927** 3.8	***4.1***

***The baseline was conducted only in Balaka, Machinga and Mangochi**

Infant and young child feeding practices indicators

Most of the mothers had followed the appropriate recommended infant feeding practices in that most respondents (65.4%) indicated that their infants less than 6 months of age had been exclusively breastfed. Comparison with the baseline in 2014 revealed significant improvement in Balaka from 73.8 percent to 83.3 percent, significant drop in Machinga from 77.5 percent to 50.0 percent in 2015.

Breastfeeding is universal in Malawi and 99.4 percent of children 6 – 23 months were reported to have ever been breastfed, 94.2 percent were still breastfeeding while 99.3 percent of these had been breastfed the day before the survey.

Current feeding practices as captured by feeding pattern the day before the survey revealed that the majority of the eligible children (95.3%) had been fed but only 21.6 percent of the children had received minimum acceptable diet and Balaka registered the highest proportion (60%) while in Mangochi none of the children received the minimum acceptable diet. Overall 78.4 percent the non-breastfed children were fed at least 4 times the day before the survey and ranged from 65.2 percent in Lilongwe to 100 percent in Balaka.

Water and Sanitation

Eighty-six percent of the beneficiaries use improved water sources (piped water, tube well or borehole, protected well, protected spring) and ranged from 76.2 percent in Machinga to a high of 92.1 percent in Balaka. Most household members (79.8%) were using improved sanitation facilities while 20.3 percent had either open pit or no sanitary facility but used the bush or fields to dispose of excreta. About eighty percent (80.1%) of young children's faeces (aged 0–3) are disposed of safely, either thrown into a toilet or a latrine or by the children themselves using the toilet.

Conclusion and recommendations

Dietary pattern for infants and young children in all the five districts were problematic in that very few children had been fed minimum acceptable diets. A relatively high proportion was fed with acceptable meal frequency but the quality of infant and young children's diet was low. It

implies that the complementary food fed is of poor quality and composed of a limited number of food groups. Cereal grains eaten with vegetables are the main stay of the diet for both the children and their mothers. All these are bulky and have low energy and nutrient density, hence difficult for the children to meet their recommended daily nutrient requirements. Children, because of their small stomachs and high nutrient requirements, need to be fed at least 4 times but with highly nutritious feeds.

Most of the households had access to safe water sources mainly the borehole. The fact that a significant proportion had diarrhoea during the dry season may indicate unsanitary environment and that care of the water at home is inadequate leading to contamination. Early introduction of fluids and other food should strongly be discouraged because it limits the frequency of breastfeeding by the infant and exposes the baby to the risk of infections.

While production of legumes is promoted to increase productivity, special effort should be made to intensify the utilization component. This will entail keeping some for home consumption and the surplus for sale to meet other household requirements. Actual cooking demonstrations and processing should be done to improve skills of the beneficiaries so that consumption of legume food products at household level is increased and dietary diversity improved.

The few individuals, who attended drama groups, appear to have benefited in the following areas; maternal and child nutrition, diet, sanitation and health. Promotion of these should be strengthened and scaled up to other districts as well. To ensure that many people patronize theatre, every opportunity that avails in the village such as religious meetings should be used to widely publicize the events.

Frontline workers should continue to include MIYCN messages to mothers at any opportunity that avails itself. It is important to include even cooking demonstrations using locally available foods to encourage the mothers to adopt the appropriate maternal, infant and young child feeding practices. For the frontline workers to effectively convince the communities they work with, separate training sessions in MIYCN should be designed targeting all frontline workers and community leadership for the care groups including lead mothers/fathers.

It was observed that the promoters are responsible for an area too large for them to keep track of so that they did not know some of the care groups and their members. In addition the nutrition coordinators are hardly known by the lead mothers let alone the care group members in all the districts except Machinga to some extent. Hence, supportive supervision at all levels is required. It is further suggested that a systematic way be devised to keep track of the beneficiaries and caregroup names to ensure that the data base in regularly updated.

1.0 INTRODUCTION

Feed the Future Malawi-Integrating Nutrition in Value Chains (INVC)" Project is a four and half year effort supporting the United States Government's *Feed the Future* Initiative in Malawi. The project is designed to help advance the vision of Feed the Future and Global Health Initiative in Malawi with activities that will assist in achievement of the two over-arching goals:

1. Sustainably reducing rural poverty; and
2. Improving Nutrition

The project through its integrated approach is focusing its nutrition efforts on:

- Improving access to diverse and quality foods
- Improving Nutrition Related behaviours
- Improving beneficiary use of maternal and child health nutrition services

1.1 Survey Purpose and Objectives

The main purpose of the survey was to conduct a nutrition outcome survey to monitor and evaluate the USAID/FtF-INVC activity in Lilongwe, Mchinji, Balaka, Machinga and Mangochi.

The objectives of the current study were to establish:

4. Prevalence of children 6-23 months receiving a minimum acceptable diet
5. Dietary Diversity for women aged 15 – 49 years
6. Percent of 0 -5 months children exclusively breastfed in the five districts

2.0 DESIGN AND METHODOLOGY

The survey was a beneficiary based survey covering the districts where the INVC project is being implemented. These are Lilongwe, Mchinji, Balaka, Machinga and Mangochi. The survey employed mainly quantitative methods to determine the selected key survey food and nutrition indicators

2.1 Pre-survey preparations

A number of activities were undertaken in preparation for the actual survey which include the following:

- A household questionnaire was developed, translated into local language and pre-tested in an area that was not sampled for actual data collection. The tool was appropriate to capture variables for the desired indicators. The data collected included; demographic and household characteristics, infant and young child feeding practices; child health and care practices.
- Drafting of enumerator manual based on the household questionnaire in readiness for training
- Recruitement of survey teams (supervisors, data expert, data entry clerks and enumerators)
- Printing of survey instruments for training and pretesting

Given the desired sample size of 1600 that was required for the nutrition follow up survey in five Districts (Mchinji, Lilongwe, Balaka, Machinga and Mangochi and due to oversampling 1608 households were interviewed in all the 5 districts:

- All villages participating in INVC programme were obtained from INVC Offices in Lilongwe to select beneficiaries from each of the districts).
- The list of beneficiaries for the 5 districts that were obtained indicated different implementing partners that is, Nkhoma Synod in Mchinji and Lilongwe while NASFAM, CADECOM and FUM are implementers in Machinga, Balaka and Mangochi.

2.2 Sampling procedures for the follow up survey

Given the desired sample size of 1,600 for determination of the key nutrition indicators in all the five districts (300 per district plus oversample), sampling for the survey was done in 2 stages.

First stage:

The sampling procedure used to select the beneficiaries to participate in the nutrition survey was as follows:

- Total number of beneficiaries participating in INVC project in each of the 5 districts was obtained from INVC project office. The lists were by district, Traditional Authority, Group Village Headmen and finally by village.

- The total number of beneficiaries to be interviewed in each district was 300 and an additional allowance was made for an extra 100 beneficiaries to be shared among the 5 district based on population proportion to size (PPS).

Based on this procedure the total number of beneficiaries sampled from each district was 331 for Lilongwe, 359 in Mchinji, 305 in Balaka, 307 in Machinga and 306 in Mangochi giving a total of 1608.

Second stage:

The second level of sampling was selection of beneficiary households to be interviewed within each participating village. The number of beneficiary households to be interviewed in each participating village was determined by total number of beneficiary households in each of the participating villages in the district. Thus, sampling was based on proportion to beneficiary population size to ensure adequate representation and give equal opportunity to each beneficiary. Each beneficiary household was asigned a serial number. The required number of beneficiary households were randomly selected.

2.3 Survey organization and data collection

A total of 24 persons (11 females and 13 males) were engaged in the nutrition outcome survey organized into 4 teams each comprised 1 supervisor, 3 enumerators, 1 data entry clerk, and a driver. Supervisors have vast experience in nutrition surveys employing qualitative and quantitative methodologies. All supervisors had minimum qualification of Bachelors degree. All enumerators and data entry clerks have a minimum of Diploma but with vast experience in nutrition surveys

The team leader was the overall coordinator for the survey while the data expert was responsible for data management and analysis. The data expert has vast experience in data management in food and nutrition related surveys and research.

2.3.1 Training of team members, pretesting of survey tools and feedback

A total of 12 enumerators, 4 field supervisors and 4 data entry clerks were trained by the consultant assisted by the data expert from 22nd to 25th July 2015. The training covered survey objectives, sampling methodology and interviewing techniques to maintain data quality, and research ethics. However, most of the time concentrated on administration of the survey instrument to develop their skills. It involved going through the survey tool item by item to understand the data to be captured. In addition, the training was interactive and included group discussions, simulation of questionnaire administration in pairs. The teams were also trained in group dynamics and teamwork as well as survey ethics and ethical conduct in communities because these could affect data quality.

Before commencement of the actual survey, the survey tools and instruments were pre-tested at

one of the villages in Lilongwe. Each enumerator completed two questionnaires which the data entry clerks practiced on. The pre-test exercise was comprehensively discussed in plenary session and necessary changes on the questionnaire were made accordingly in readiness for data collection.

2.3.2 Actual data collection

Data collection ran from 28th July to 23rd August 2015. During data collection, the enumerators moved in their respective teams. Logistics and geographic coverage of the selected villages was coordinated by the team supervisors. This included coordinating and supervising the movement of the enumerators and in-field data entry clerks. The supervisors also communicated with nutrition coordinators and care group leaders in efforts to locate some sampled beneficiaries with names unknown by the village leaders. The data collected included:

- Household and demographic composition
- Infant and Young Child Feeding practices. Owing to its critical importance in enhancing good nutrition, infant and young child feeding was assessed and benchmarked in each district. Emphasis was placed on assessing the occurrence, nature, duration and frequency of exclusive breastfeeding (EBF) and complementary feeding, as well as occurrence of dietary diversity as key determinants of nutritional well being among infants and young children. In addition, the quality of the diet for children 6-35 months and women 15 – 49 years) was assessed using a proxy indicator of dietary diversity. The indicator assesses all foods and beverages consumed the previous 24 hours, with the aim of determining whether or not there is adequate variety in the foods consumed to warrant satisfactory nutrition.
- Child Health and Care Practices: Infant and childhood illnesses (diarrhoea, fever and chills and lower respiratory infections) was also assessed. Such conditions affect food consumption, digestion, absorption and utilisation. Caregivers, care-seeking behaviours and home-based care of ill children and women was therefore investigated.
- Water and sanitation
- Social and behaviour change communication: This section applied to Mchinji and Lilongwe only beacause the activity has not yet started. Varying information relating to theatre and radio was solicited including heatre attendance, radio listening by the beneficiaries, the main topics they remembered.

2.3.3 Quality control

The consultant was in charge of the entire process throughout the training and data collection period. The supervisors were the lead persons for introducing their teams in each village, and checking of questionnaires. This ensured quality of data collected from the field, completeness of the team's assigned work and that methodological and other field challenges are attended to immediately in the field. Spot checks of filled questionnaires were made in the field so that

errors are rectified immediately. Daily briefings will be were made every evening where teams shared experiences so that any errors are not repeated; corrections were made to ensure smooth implementation of the survey. In addition, quality check was also done by INVC staff in the course of data collection.

2.4 Data management and analysis

Data entry started in the field simultaneously as data collection progressed. Any errors detected were communicated to the supervisors for sharing with their team members and appropriate corrections were made before commencing data collection the following day. In so doing errors were minimized and enhansed data quality.

2.4.1 Data cleaning and analysis

Data cleaning, lead by the data expert, was carried out soon after data entry was completed to ensure that the information had been entered correctly. Where some discrepancies were detected in the entered data base, the data entry teams physically checked the questionnaires and corrections made wherever necessary.

After completion of data cleaning, production of survey outputs such as **descriptive statistics**, **cross tabulation** commenced using SPSS 16.0 package and continued as the survey report during drafting.

CHAPTER 3: RESULTS AND DISCUSSION

This chapter presents results from the 2015 Nutrition Outcome Survey conducted in Mchinji, Lilongwe, Balaka, Mangochi and Machinga where FtF-INVC's interventions are operational. A total of 1608 households were sampled with 22.3 percent (359) from Mchinji, 20.6 percent (331) from Lilongwe, 19 percent (305) from Balaka; and 19.1 percent (307) from Machinga and 19 percent (306) from Mangochi district.

3.1 Main indicators established by the 2015 Nutrition Outcome Survey

The current study was conducted to determine a number of key indicators that would assist in monitoring and evaluating the activities implemented in the five districts. The indicators that the survey concentrated on are presented in Table 1. Detailed analyses of the key indicators are provided in the relevant sections that follow in the chapter.

Table 1: Summary of the main baseline survey indicators by district

Parameter	**Lilongwe**	**Mchinji**	**Balaka**	**Machinga**	**Mangochi**	**Overall 2015**	***2014****
Proportion of children 6-23 months who received minimum acceptable diet:							
Breastfed children 6 – 23 months	**n=92** 19.6	**n=120** 17.5	**n=126** 27.0	**n=142** 13.4	**n=125** 17.6	**n=605** 18.8	***32.5***
Non-breastfed children 6 – 23 months	**n=4** 25.0	**n=19** 10.5	**n=5** 60.0	**n=6** 33.3	**n=3** 0.0	**n=37** 21.6	***40.9***
All children 6-23 months	20.2	16.5	28.2	14.2	17.2	19.0	
Proportion of children who received minimum meal frequency:							
Breastfed children 6-8 months	**n=9** 83.7	**n=9** 81.7	**n=11** 91.3	**n=21** 90.8	**n=21** 91.2	**n=71** 88.2	***84.4***
Breastfed children 9-23 months	**n=56** 65.2	**n=80** 72.5	**n=89** 76.2	**n=95** 75.4	**n=82** 75.2	**n=402** 73.4	***73.2***
Non-breastfed children 9-23 months	**n=4** 100	**n=19** 68.4	**n=5** 100	**n=6** 66.7	**n=3** 100	**n=37** 78.4	***31.1***
Percent 0-5 months children exclusively breastfed	**n=16** 66.7	**n=24** 70.6	**n=15** 83.3	**n=11** 50.0	**n=21** 60.0	**n=87** 65.4	***71.9***
Women 15-49 years who ate diversified diet	**n=259** 66.4	**n=276** 60.7	**n=221** 63.3	**n=232** 63.6	**n=257** 70.0	**n=1245** 64.6	***74.6***
Mean number of foods consumed by women 15 to 49 years of age	**n=390** 3.8	**n=456** 3.6	**n=349** 3.8	**n=365** 3.9	**n=367** 4.2	**n=1927** 3.8	***4.1***

***The baseline was conducted only in Balaka, Machinga and Mangochi**

3.2 Socio-Demographic Characteristics

3.2.1 Household Composition

Presented in Table 2 are some key aspects of household composition in the five districts. From a total of 1,608 households that were interviewed, the total number of household members was 13,546 and mean household size was 5.6 with a range of 5.5 in Lilongwe and Balaka to 5.9 in Mchinji. The average age of the household head in the 5 districts was 35.9 years, which is similar to the average age reported in the 2010 Malawi IHS3 and 2008 Malawi Census datasets. From Table 2 the results also show that there were more female members in the households visited (51.9% of female members to 48.1% of the male household members respectively. The majority of the households were male headed (Table 2).

Table 2: Household characteristics by district

Characteristics	Lilongwe	Mchinji	Balaka	Machinga	Mangochi	Overall
Total sampled HHs	331	359	305	307	306	1608
Type of Household head:						
Male Head	86.5	85.0	80.5	74.5	75.5	80.7
Female head	13.5	15.0	19.5	25.5	24.5	19.3
Total household members	2748	3149	2618	2456	2575	13546
Mean Household size	5.5	5.9	5.5	5.6	5.7	5.6
Sex of household members:						
Male	47.6	48.4	50.3	47.1	47.3	48.1
Female	52.4	51.6	49.7	52.9	52.7	51.9
Age related characteristics:						
Mean age of male HH (yrs)	36.0	36.5	35.2	35.0	36.6	35.9
Mean age of female HH	37.2	38.2	33.7	35.2	36.0	35.9
Mean years of schooling	5.4	5.4	5.6	5.3	4.9	5.4

3.2.2 Age of the household members

Presented in Table 3 is the proportion of members according to age grouping, it can be seen that the majority of the household members (56.8 percent) were aged between 0 and 15 years while 5.2 percent were 45 years and older. The trend is similar for each district and suggests high dependency ratio.

Table 3: Age category of the household members by district (percent)

Age category of household members	Lilongwe	Mchinji	Balaka	Machinga	Mangochi	Overall
Age not known	0.2	0.1	0.0	0.0	0.0	0.1
0-5 years	22.1	23.7	26.3	28.5	27.4	25.4
6-10 years	18.6	17.8	18.7	16.7	17.2	17.8
11-15 years	13.9	13.7	13.5	13.5	13.5	13.6
16-20 years	8.4	9.3	8.8	7.5	7.9	8.4

21-25 years	7.5	7.9	7.4	8.7	8.2	7.9
26-30 years	6.7	6.4	7.4	7.4	6.8	6.9
31-35 years	7.6	6.6	6.0	6.5	6.3	6.6
36-40 years	6.5	4.6	5.1	3.7	4.5	4.9
41-45 years	2.9	3.8	2.9	2.6	2.8	3.0
45 + years	5.7	6.0	4.0	4.9	5.3	5.2

3.2.3 Educational Level of household members

Overall, the majority of the women (65.8%) had attended formal education but 59.5 percent only had some primary education. Mangochi registered the lowest proportion (58.6%) and 12.6 percent had not attended any schooling. In contrast, Balaka district had the highest proportion of women (70.6%) with formal education and 6.8 percent had attained some secondary school education while 63.8 percent had attained some primary school education. Consistently a higher proportion of male household heads had not been to school in comparison with all the male family members in all districts. Among female heads the same trend is also observed. This is because most of the household heads are elderly.

Table 4: Educational Level of household members by gender and district

Educational level	Lilongwe	Mchinji	Balaka	Machinga	Mangochi	Overall
All Males:						
None	9.9	5.8	3.0	7.0	11.1	7.2
Primary School	58.2	59.2	56.5	55.2	53.3	56.4
Secondary school	10.0	9.7	11.6	7.6	6.5	9.1
Post Secondary	0.1	0.3	0.0	0.4	0.4	0.2
University	0.1	0.0	0.0	0.0	0.0	0.0
Under-age	21.8	25.0	28.9	29.9	28.7	27.1
Male household heads:						
None	12.3	6.5	4.2	12.5	20.2	11.0
Primary School	65.4	73.5	66.9	69.2	62.3	67.4
Secondary school	22.0	19.4	28.9	17.7	16.2	21.0
Post Secondary	0.3	0.6	0.0	0.7	1.2	0.6
All Females:						
None	8.2	6.7	4.2	8.8	12.6	8.2
Primary School	61.9	64.3	63.8	55.4	53.4	59.5
Secondary school	6.2	5.7	6.6	6.3	5.0	6.0
Post Secondary	0.2	0.2	0.2	0.0	0.2	0.2
University	0.4	0.0	0.0	0.0	0.0	0.1
Under-age	23.2	23.1	25.2	29.5	28.8	26.1
Female household heads:						
None	15.1	9.1	4.7	22.1	33.6	18.8
Primary School	67.9	76.4	84.9	72.1	56.1	70.6
Secondary school	13.2	12.7	10.5	5.8	10.3	9.9
Post Secondary	1.9	1.8	0.0	0.0	0.0	0.5
University	1.9	0.0	0.0	0.0	0.0	0.2

The low educational level among respondents and household heads is of great concern as low literacy levels are often associated with poor child feeding and health seeking behaviours. Presented in Table 5 are selected child and maternal indicators in relation to educational level on the respondent and male household head. Consistently the proportion of children receiving minimum acceptable diet, the infants exclusively breastfed and the average number of food groups eaten by the children increased with increasing educational level of the mother and male household head. Similar trend is also observed for dietary diversity and the minimum number of food groups eaten by women of child bearing age. Maternal educational level appears to influence the selected child and maternal indicators more than household head educational level.

Table 5: Child feeding and maternal dietary diversity by educational level of mother and male head

Indicator	Overall Results		None		Primary School		Secondary School		Post Sec School	
	n	%	n	%	N	%	n	%	n	%
Education level of respondent:										
Children who received minimum acceptable diet	475	69.6	52	55.3	366	70.7	57	82.6	0	0.0
0-5 months children exclusively breastfed	87	65.4	10	58.8	64	64.6	12	75.0	1	100.0
Mean number of food groups consumed by Childrem 6-35 months	764	4.7	84	4.6	583	4.7	95	4.9	2	5.5
Women 15-49 years who ate diversified diet	667	67.1	65	48.9	508	67.7	92	85.2	2	66.7
Mean number of food groups consumed by women 15-49 years of age	667	4.5	65	4.4	508	4.5	92	4.6	2	4.5
Education level of the male heads:										
Children who received minimum acceptable diet	376	72.0	40	66.7	260	71.0	73	79.3	3	75.0
0-5 months children exclusively breastfed	69	66.3	5	71.4	43	64.2	21	72.4	0	0.0
Mean number of food groups consumed by Childrem 6-35 months	608	4.7	66	4.6	410	4.7	127	4.8	5	5.4
Women 15-49 years who ate diversified diet	875	68.8	82	62.1	580	67.4	205	75.6	8	100.0
Mean number of food groups consumed by women 15-49 years of age	875	4.5	82	4.5	580	4.5	205	4.6	8	5.5

3.2.4 Main occupation of the household members

Overall 29.3 percent of the household members were either young children or the elderly and 32.7 percent were schooling. There were only slight differences between male and female household members. Nevertheless farming was the main occupation. This pattern is observed in all the five districts (Table 6). The results clearly indicate that most households did not have

steady source of income. Hence, food availability and other household requirements are likely to be negatively affected.

Table 6: Household characteristics on occupation by district and gender

Main occupation	Lilongwe	Mchinji	Balaka	Machinga	Mangochi	Overall
Male:						
None (young children and the elderly)	25.3	27.5	30.0	33.1	32.4	29.5
Farmer	33.0	33.9	22.7	24.2	24.9	28.1
School teaching	0.0	0.4	0.1	0.0	0.1	0.1
Artisan/blacksmith	2.2	1.6	2.2	2.7	2.9	2.3
Civil servants	0.2	0.0	0.2	0.3	0.2	0.2
Trader/shopkeeper	2.7	1.5	3.4	2.9	2.7	2.6
Seasonal Agriculture labour	0.5	0.1	0.5	0.2	0.6	0.4
Permanent agriculture labor	0.0	0.3	0.2	0.0	0.2	0.1
Casual labour	0.5	0.2	1.4	0.3	0.8	0.6
Seasonal non-agriculture labour	0.1	0.2	0.2	0.3	0.4	0.2
Permanent Non Agric labour (e.g. Mining)	0.8	0.1	0.6	0.6	0.3	0.5
Student	33.3	34.3	37.3	32.1	32.2	33.9
Private sector/NGO	1.2	0.0	1.0	2.0	1.2	1.0
Female:						
None (young children and the elderly)	26.5	27.0	26.7	32.6	33.4	29.1
Farmer	38.2	38.6	35.1	35.2	36.6	36.9
School teaching	0.1	0.1	0.3	0.0	0.0	0.1
Artisan/blacksmith	0.1	0.1	0.0	0.0	0.2	0.1
Civil servants	0.1	0.1	0.0	0.0	0.0	0.0
Trader/shopkeeper	1.6	0.3	3.2	1.8	1.2	1.6
Seasonal Agriculture labour	0.0	0.0	0.3	0.1	0.1	0.1
Casual labour	0.1	0.0	0.1	0.2	0.1	0.1
Seasonal non-agriculture labour	0.1	0.0	0.2	0.1	0.4	0.2
Permanent Non Agric labour (e.g.mining)	0.1	0.0	0.0	0.0	0.0	0.0
Student	32.8	33.5	33.7	29.9	27.0	31.5
Private sector/NGO	0.1	0.1	0.2	0.1	0.4	0.2

3.3 Water sources and sanitation

3.3.1 Sources of drinking water

Water, sanitation and hygiene (WASH) is one of the eleven proven high impact interventions that are being promoted in scaling up nutrition in Malawi. Unprotected water is potential source of food and water-borne infections that can affect food intake and impact negatively on productivity of a household. Information on source of water is presented in Table 7. Overall, a significant proportion of the households (14.1 percent) did not have access to portable water and the proportion varied in the districts (8.0 percent in Balaka and a high 23.8 percent in Machinga). Consistent with the baseline of 2014 Machinga was particularly worse off and require assistance in provision of safe water sources.

Table 7: Main source of water used by households by district

Main water source	Lilongwe	Mchinji	Balaka	Machinga	Mangochi	Overall
Piped within dwelling	0.6	0.3	0.0	0.0	0.0	0.2
Piped into yard or plot	0.3	0.0	0.3	3.3	0.0	0.7
Public tap	0.0	0.0	7.2	4.6	1.0	2.4
Borehole with pump	78.9	84.4	84.3	66.4	85.3	80.0
Protected dug well	3.3	5.8	0.3	1.6	1.3	2.6
Protected spring	0.0	0.0	0.0	0.3	0.0	0.1
Total Protected	**83.1**	**90.5**	**92.1**	**76.2**	**87.6**	**86.0**
Rainwater collection	0.0	0.0	0.0	0.3	0.0	.1
Unprotected dug well	14.2	8.9	4.3	21.2	8.5	11.4
Unprotected spring	0.6	0.3	0.7	1.0	0.0	0.5
Pond, river, stream. Lake	2.1	0.3	3.0	1.3	3.9	2.1
Total unprotected	**16.9**	**9.5**	**8.0**	**23.8**	**12.4**	**14.1**
Distance to water source and back	**18.2**	**21.4**	**18.1**	**20.9**	**16.8**	**19.2**

3.3.2 Ownership of sanitation facilities

Proper disposal of wastes may result in better health due to reduction in such disease conditions as diarrhoea and parasitic infections which in turn can result in lowered morbidity and mortality. In addition, ownership of sanitation facilities such as latrines gives dignity to household members. Table 8 shows that the most common toilet facility was the traditional pit latrine located within the dwelling yard. Most household members (79.7 percent) were using improved sanitation facilities. It is of concern that a significant proportion of the households (20.1 %) had either open pit or no sanitary facility hence using the bush or fields to dispose of excreta. This practice may be contributing to diarrhoea episodes a significant proportion of the children had suffered from two weeks prior to the surveys.

Table 8: Household Toilet Facility by District

Parameter	Lilongwe	Mchinji	Balaka	Machinga	Mangochi	Overall
Household toilet facility:						
Flush to sewage	2.4	0.3	1.6	2.3	1.3	1.6
Pour flush latrine	0.3	0.8	0.3	0.7	0.7	0.6
Traditional pit latrine	76.7	69.1	80.7	74.2	88.9	77.6
Total Protected	**83.1**	**90.5**	**92.1**	**76.2**	**87.6**	**86.0**
Open pit	1.8	2.8	2.0	3.6	0.7	2.2
No facilities or bush	18.7	27.0	15.4	19.3	8.5	18.1
Location of toilet facility:						
Within the yard	78.3	70.4	80.3	71.3	82.8	76.6
Outside dwelling	12.9	16.6	13.9	18.5	13.8	15.1
Disposal of stools of children 0-3 Years:						
Children always use toilet	4.8	3.2	6.6	7.7	6.6	5.8
Thrown into toilet	71.5	62.8	72.5	70.9	75.9	70.4
Buried in yard	2.2	7.6	3.8	3.4	1.9	3.9
Thrown outside yard	3.8	9.2	3.3	3.8	3.8	4.9
Use neighbors toilet	17.7	17.2	13.7	14.1	11.8	14.9

The young children (0-3 years) may not be able to use toilet facilities properly but their stools should be properly disposed of. Respondents were asked to explain how they dispose of the stools of young children and the results are presented in Table 8. Overall, 70.4 percent of young children's faeces are disposed of safely. However caregivers need to wash hands with soap always after handling stools to prevent cross infection and contamination. It is of grave concern that about 15 percent of care givers claimed to use neighbours' latrine, this is not likely to be followed consistently. Eduction on importance of ownership and use of appropriate sanitation facilities should be included regularly in caregroup sessions.

3.4 Infant and young child feeding practices

3.4.1 Age distribution of the sampled children

Distribution of children aged 0 to 35 months in the sampled households by age group and gender are presented in Figures 1. There were 1,200 children and 49.8 percent of the children) were male and 50.2 percent were female hence both sexes were adequately represented in the districts.

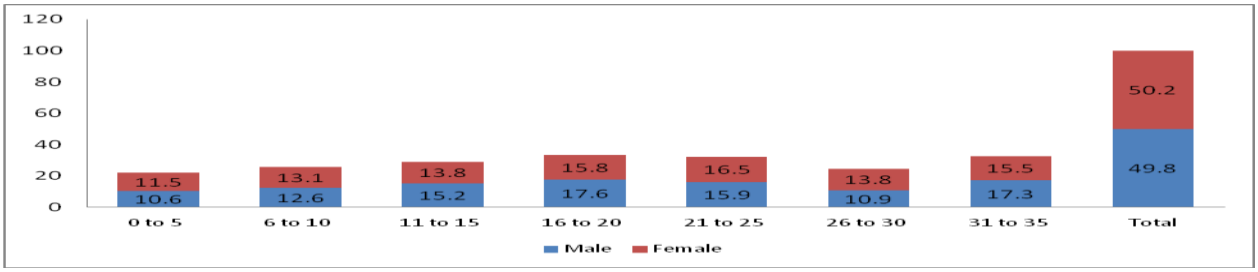

Figure 1: Distribution of children 0-35 months in sampled households by age group (months) and gender

The distribution of the sampled children aged 0 - 35 months by district are shown in Table. In each district a high proportion of the children were in the 6 to 23 month age range. Total number of children was highest in Mchinji because more households had been sampled.

Table 9: Distribution of the children aged 0-35 months by district

Age group	Lilongwe		Mchinji		Balaka		Machinga		Mangochi		Overall	
	n	%	n	%	N	%	N	%	n	%	n	%
Children 0-5 months	24	11.8	34	12.5	18	7.9	22	8.3	35	14.9	133	11.1
6-23 months	96	47.3	139	51.3	131	57.7	148	56.1	128	54.5	642	53.5
24-35 months	83	40.9	98	36.2	78	34.4	94	35.6	72	30.6	425	35.4
Total	**203**	**100**	**271**	**100**	**227**	**100**	**264**	**100**	**235**	**100**	**1200**	**100**

3.4.2 Exclusive breast feeding

There were 133 children under 6 months of age and 87 of these children had not been given any thing such as water, various solids and yogurt which implies that these children were being breastfed exclusively. The survey results show that exclusive breastfeeding for the first six months is claimed to be widely practiced in the 5 districts (Table 10). Overall, 65.4 percent of infants less than 6 months of age were exclusively breastfed which is slightly lower than national prevalence of 71.4 percent based on 2010 (NSO and ICF Macro, 2011) and 70.2 percent based on 2014 MICS (NSO, 2014). Early introduction of fluids and other food should strongly be discouraged because it limits the frequency of breastfeeding by the infant and exposes the baby to the risk of infections.

Table 10: Prevalence of exclusive breastfeeding during first 6 month by district in 2014 and 2015

District	Exclusive breastfeeding prevalence (Percent)	
	Baseline (2014)	**Follow up (2015)**
Lilongwe	71.0*	66.7
Mchinji	71.0*	70.6
Balaka	73.8	83.3
Machinga	77.5	50.0

Mangochi	69.6	60.0
Overall	71.9	65.4

***Based on 2010 DHS**

Comparison between the baseline in 2014 and the current survey reveal significant improvement in Balaka from 73.8 percent to 83.3 percent in 2015. It is of grave concern that Machinga registered a significant drop from 77.5 percent in 2014 to 50.0 percent in 2015. Nutrition education among the care groups that are currently operational in the area should emphasize appropriate infant and young child feeding. The baseline did not cover Lilongwe and Mchinji hence comparisons could not be made.

Table 11 presents the feeding practices followed in the five surveyed districts. Consistent with the 2014 MICS estimates, the INVC survey results show that almost all children (99 percent) between the ages of 6 and 23 months were reported to have ever been breastfed, 94. 2 percent were still breastfeeding while 99.3 percent of these had been breastfed the day before the survey. From 18 months of age, a significant proportion of the children are weaned off the breast and from 24 to 35 months old children are almost all completely weaned off the breast. There seem to be no differences between gender of the child and the child's district of origin.

Table 11: Breastfeeding practices among children 6-23 months by sex and district n=642

		Child breastfeeding practices		
Parameter	**n**	**Children ever breastfed %**	**Children still breastfeeding %**	**Children* breastfed day before survey %**
Age in months:				
6-8	92	100	100	100
9-11	97	100	100	99.0
12-17	217	100	97.7	100
18-23	232	98.3	86.4	98.5
Sex:				
Male	320	99.4	94.1	99.3
Female	318	99.4	94.4	99.3
Total	**638**	**99.4**	**94.2**	**99.3**
District:				
Lilongwe	95	99.0	95.8	98.9
Mchinji	137	98.6	86.3	100
Balaka	131	100	96.2	98.4
Machinga	147	99.3	95.9	99.3
Mangochi	128	100	97.7	100

***Percent of the children still being breastfed**

3.4.3 Complementary feeding

The national guidelines for infant and young child feeding, recommend the introduction of complementary food to infants around 6 months of age because by that age breast milk alone is inadequate to meet daily energy and nutrient requirements to maintain a child's optimal growth and development. The respondents were asked a number of complementary feeding related practices done the day before interviews and the results are presented in Table 12. A high proportion of children had been given water (over 80 percent), while a significant proportion was given clear broth (over 40 percent) and thin porridge (over 26 percent) across the districts. All these are bulky and have low energy and nutrient density, hence difficult for the children to meet their recommended daily energy and nutrient intakes.

Table 12: Complementary feeding related practices day before the survey by district

Feeding practices	Lilongwe	Mchinji	Balaka	Machinga	Mangochi	Overall
Children fed breast milk with bottle/cup/spoon (%)	5.3	1.4	1.8	2.9	1.6	2.4
Medicine and vitamins (%)	11.1	6.4	11.0	9.4	11.1	9.7
Given Thanzi ORS (%)	4.2	2.9	2.1	7.1	3.1	3.9
Plain water (%)	81.4	83.5	85.4	87.6	81.5	84.0
Infant formula (%)	0	0	1.4	0.6	1.2	0.7
Mean number of times infant formula given	0	0	0	0	3.0	3.0
Tinned milk, powdered (%)	8.3	4.1	2.7	1.2	1.9	3.4
Mean number of times tinned milk given	1.5	3.2	2.0	2.0	3.0	2.2
Juice /drinks (%)	5.0	1.2	0.7	1.8	1.9	1.9
Clear broth or *msuz*i (%)	53.7	49.1	52.4	44.7	45.7	48.8
Yogurt (%)	4.2	0.0	1.4	1.2	0.0	1.2
Mean number of times yogurt given	1.8	0.0	1.5	2.0	0	1.8
Thin porridge (%)	26.4	27.5	26.5	32.7	34.6	29.8
Other liquids such as thobwa	16.5	23.3	25.9	15.4	13.0	18.8

Presented in Table 13 are the common foods served to children 6 to 23 months the day before the survey. The results show that the main stay of the diet for the children is the maize staple eaten with vegetables. It is of concern that most of the children had other vegetables such as cabbage, egg plants which are less nutritious than the dark green vitamin A rich vegetables. Fish is the main animal source food included in the diet. Similar dietary pattern was observed for women of child bearing age (15 to 49 years) suggesting that the children depend more on family meals once complementary feeding is initiated.

Table 13: Food types consumed by the 6-23 months children by district (%)

Foods consumed	Lilongwe	Mchinji	Balaka	Machinga	Mangochi	Overall
Food made from grains	86.3	90.6	90.0	91.8	93.8	90.8
Vitamin A rich vegetables	12.6	17.5	10.9	9.6	6.2	11.4
White tubers and roots	22.1	18.1	17.7	19.7	13.3	18.0
Dark green leafy vegetables	63.2	67.4	56.9	60.5	52.3	60.0
Other vegetables	71.6	68.8	80.0	69.4	71.9	72.3
Vitamin A rich fruits	3.2	5.1	7.7	6.8	5.5	5.8
Other fruits	7.4	9.4	9.2	6.8	7.0	8.0
Organ meat (Iron rich)	4.2	.7	1.5	.7	.0	1.3
Flesh meat	12.6	12.3	12.4	4.1	7.0	9.4
Eggs	6.4	3.6	10.0	2.0	5.5	5.3
Fish	17.0	10.1	16.9	33.3	31.2	22.1
Food from Soya	21.5	25.4	16.9	9.5	13.3	17.0
Food made from g/nuts	22.3	41.3	29.2	37.4	32.0	33.3
other beans	23.4	22.5	31.5	25.2	33.6	27.3
Milk and milk products	10.6	7.2	5.4	4.8	5.5	6.4
Oils and fats	61.7	52.9	53.8	53.1	54.7	54.8
Sweets	50.0	45.7	45.4	38.1	38.3	43.0
Beverages e.g. tea	26.3	32.6	28.5	13.6	21.1	24.1
Spices, condiments	1.1	2.9	2.3	2.0	4.7	2.7
Insects	1.1	0.7	0.8	0.0	0.8	0.6

The current survey solisted food intake of the 6 – 23 month of children during day and night (24 hour recall) preceding the survey and feeding frequency. From this information the proportion of children who received minimum acceptable diet (defined as consumption of at least four out of seven food groups in the previous 24 hours). The minimum acceptable diet is based on the recommended 7 food groups which are:1) infant formula, milk other than breast milk, cheese or yogurt or other milk products; 2) foods made from grains, roots, and tubers, including porridge and fortified baby food from grains; 3) vitamin A-rich fruits and vegetables (and red palm oil); 4) other fruits and vegetables; 5) eggs; 6) meat, poultry, fish, and shellfish (and organ meats); 7) legumes and nuts. The minimum feeding frequency for the children by their breastfeeding status was also generated. The results are presented in Figure 2. The highest proportion of breastfed children who received the minimum acceptable diet were from Balaka (27 percent) while the worst was Mangochi where none of the children received the minimum acceptable diet. It is of grave concern that only a small proportion of non-breastfed children (ranging from 14.2 percent in Machinga to 60 percent in Balaka) received minimum acceptable diet. Overall, only 19

percent (122 of 642) of the children received minimum acceptable diet (Table 1). The national averages for non-breastfed children are 45.4 percent based on 2010 MDHS (NSO and ICF Macro, 2011) and 5.2 percent based on 2014 MICS (NSO, 2015). These children are no longer being breastfed hence are solely dependent on the non-nutritious bulky porridge which was the main food given to children. These are not likely to meet their recommended nutrient requirements.

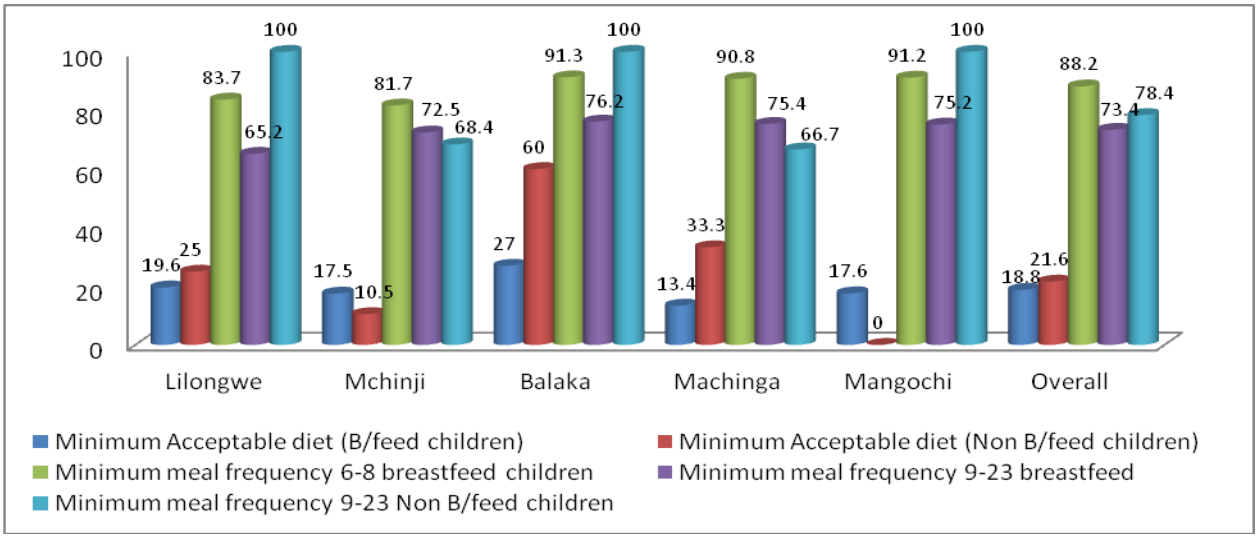

Figure 2: Minimum Acceptable diet and Minimum meal frequency for breastfed and non breastfed children 6-23 months

Overall, 88.2 percent of breastfed children (6-8 month) and 73.4 percent (9-23 months) were fed with acceptable minimum meal frequency of at least 3 meals and 4 meals respectively in the previous 24 hours prior to the survey (Figure 2). It is commendable that all the non-breastfed children in Lilongwe, Balaka and Mangochi had been fed with acceptable minimum frequency. The most recent reported national averages are 48.3 percent for breastfeeding children and 28 percent for nonbreastfed children (NSO, 2015).

Although a high proportion of the 6-23 children (65.2 percent to 100 percent) based on their breastfeeding status were fed with minimum meal frequency, a high proportion failed to receive minimum acceptable diet. It implies that the complementary food fed is of poor quality and composed of a limited number of food groups. These results suggest that many of the children are not likely to meet their daily energy and nutrient requirements.

3.4.4 Dietary diversity for children 6-35 months

At least 50 percent of the eligible children had consumed a highly diversified diet the day before the survey (Figure 3). Almost all children aged 24 months and older had been completely weaned off the breast hence solely dependent on the given food. The more diversified the diet is the high the likelihood that daily energy and nutrient requirements would be met. Dissemination

of appropriate complementary feeding that emphasizes on importance of dietary diversity and frequent feeding should continue to be promoted in the care groups.

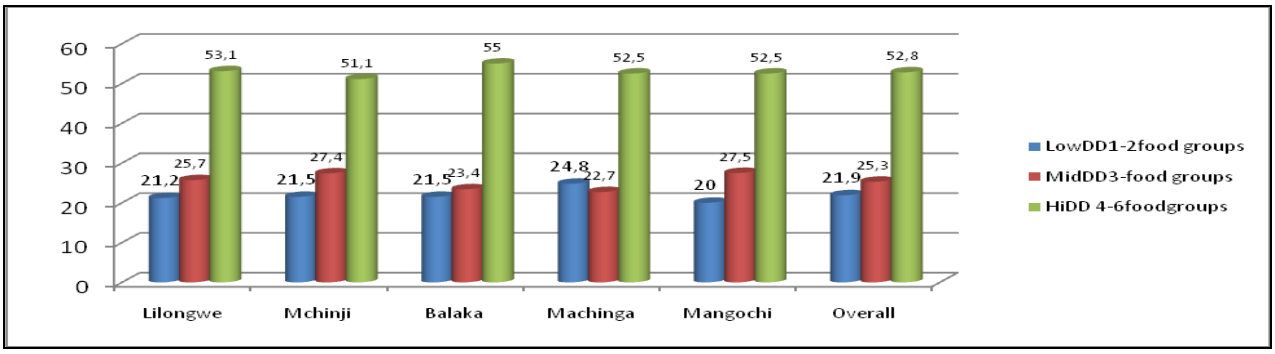

Figure 3: Dietary diversity of children 6-35 months by district

There was a positive relationship between educational levels of both the household head and the caregiver and dietary diversity of the child (p<.000). The relationship appears to be stronger between mother's education and the child's dietary diversity (Table 14).

Table 14: Dietary diversity for children 6-35 months by education of household head and caregiver (percent)

DD level	Education of household head			Education of caregiver		
	None	Primary	Secondary	None	Primary	Secondary
LDD	24.4	17.2	18.6	16.3	9.6	6.7
MDD	14.2	11.9	7.0	17.7	12.2	5.9
HDD	61.4	70.9	74.4	66.0	78.2	87.4

3.4.5 Consumption of the promoted legumes products

INVC projects promote groundnut, soya bean and beans hence consumption of these products was assessed for the children 6-23 months of age based on the 24-hour recall. A total of 642 children (96 from Lilongwe, 139 Mchinji, 131 Balaka, 148 Machinga and 128 Mangochi) were assessed. The results are presented in Figure 4. In all districts 33.3 percent of the children ate groundnuts followed by other beans (27.3 percent) while consumption of soybeans was 17.0 percent. Utilization component of the interventions implemented need strengthening to include cooking demonstrations to motivate beneficiaries to increase consumption of legume food products at household level.

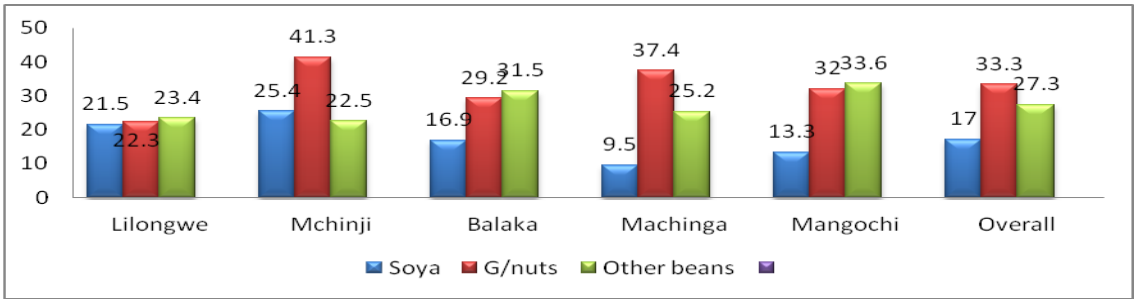

Figure 4: Consumption of groundnut, soya bean, bean and dairy foods

3.4.6 Consumption of vitamin A and iron rich foods

Based on the 24 hour recall, it was possible to assess consumption of foods rich in vitamin A and iron among children aged 6 to 35 months. Findings reveal that in almost all age groups less than a quarter of the children were consuming foods rich in Vitamin A or iron (Table 15). While the proportion was higher among children aged 24-35 months, the proportions were still significantly low ranging between 44 percent and 59 percent. These results suggest that a high proportion of the children in all five districts may have low food-based micronutrient intake and as such this is an area that needs special attention during the caregroup education sessions. In addition, mothers should be reminded to participate in "Child health days" compaign conducted biannually by Ministry of Health and vitamin A supplements and deworming drugs are given to children underfive years of age.

Table 15: Consumption of vitamin A and iron rich foods by children age 6-35 months

	% consuming foods rich in vitamin A in last 24 hours		% consuming foods rich in iron in last 24 hours		Total number of children
Parameter	**Unweighted**	**Weighted**	**Unweighted**	**Weighted**	**n**
Age in months:					
6-8	53.3	51.1	20.7	21.4	92
9-11	77.3	76.2	21.6	24.7	97
12-17	82.0	81.5	32.1	35.1	217
18-23	91.1	92.2	37.3	38.2	236
24-35	91.8	91.4	37.3	40.0	425
Sex:					
Male	83.6	84.9	29.5	32.1	534
Female	85.3	84.8	32.2	32.6	532
District:					
Lilongwe	86.6	86.6	29.8	32.3	179
Mchinji	88.6	88.5	23.6	23.0	237
Balaka	82.6	82.8	28.2	26.7	209
Machinga	85.1	85.1	34.9	35.8	242
Mangochi	81.5	85.0	30.8	36.7	200

3.5 Childhood illness and care

Table 16 presents period-prevalence of selected illnesses for children aged 0 – 35 months who were reported to have had an episode of diarrhoea, symptoms of acute respiratory infection (ARI), or fever during the 2 weeks prior to the survey. About 20 percent of the children were reported to have suffered from diarrhoea including bloody diarrhoea and the prevalence was highest in Mchinji (28.1 percent).

Table 16: Reported selected disease episodes two weeks before survey and care by district

Parameter	Lilongwe	Mchinji	Balaka	Machinga	Mangochi	Overall
Children who had diarrhea (%)	23.9	28.1	17.2	26.2	21.5	23.5
Duration and care element associated with the diarrhoea episode:						
Mean number of days	4.1	4.1	3.8	4.2	4.4	4.1
Presence of blood in stools	4.2	6.9	12.8	10.4	10.0	8.7
Received appropriate treatment	64.6	77.8	84.6	68.7	74.0	73.6
Fluid intake during the diarrhea episode:						
Less	51.9	55.3	45.5	51.5	42.1	50.4
About the same	29.6	13.2	18.2	12.1	5.3	15.8
More	18.5	31.6	36.4	36.4	47.4	33.1
Nothing to drink	0.0	0.0	0.0	0.0	5.3	0.7
Food intake during the diarrhea episode:						
Less	81.8	86.3	87.5	68.8	81.8	80.4
About the same	18.2	2.0	8.3	8.3	6.1	7.9
More	0.0	7.8	4.2	14.6	6.1	7.4
Nothing to eat	0.0	3.9	0.0	8.3	6.1	4.2
Children who had fever (%)	**24.9**	**32.9**	**22.6**	**38.9**	**28.6**	**30.1**
Fluid intake during the fever episode:						
Less	50.0	66.0	71.4	52.9	70.0	61.1
About the same	19.2	8.0	10.7	13.7	5.0	11.4
More	30.8	26.0	17.9	31.4	20.0	26.3
Nothing to drink	0.0	0.0	0.0	2.0	5.0	1.1
Food intake during the fever episode:						
Less	88.6	90.0	81.8	76.5	76.3	82.2
About the same	8.6	6.7	6.1	8.6	5.3	7.3
More	.0	1.7	9.1	7.4	2.6	4.5
Nothing to eat	2.9	1.7	3.0	7.4	15.8	6.1
Children who had malaria (%)	**10.9**	**10.1**	**11.1**	**20.8**	**8.9**	**12.6**
Fluid intake during the malaria episode:						
Less	51.9	55.3	45.5	51.5	42.1	50.4
About the same	29.6	13.2	18.2	12.1	5.3	15.8
More	18.5	31.6	36.4	36.4	47.4	33.1
Nothing to drink	0.0	0.0	0.0	0.0	5.3	0.7
Food intake during the malaria episode:						
Less	81.8	86.3	87.5	68.8	81.8	80.4
About the same	18.2	2.0	8.3	8.3	6.1	7.9
More	0.0	7.8	4.2	14.6	6.1	7.4
Nothing to eat	0.0	3.9	0.0	8.3	6.1	4.2

It is of concern that about 30 percent did not receive appropriate treatment. In addition, 50.4 percent and 80.4 percent reported to have reduced fluid and food intake respectively. Similar trend is seen for fever and malaria as well. These are disease conditions that Global Action plans seek to significantly reduce since they all contribute to child mortality. Appropriate health care seeking behavior and appropriate feeding practices during illness messages should be emphasized at every opportunity in these communities.

3.6 Women's dietary diversity

Inadequate dietary intake is an immediate cause of undernutrition. Alongside improving food security, nutrition education should emphasize the need for households to adopt dietary diversification as a key determinant of nutritional and health well-being of all household members.

The variety of foods consumed by women of child bearing age the day prior to the survey (24 hour recall) was solicited. Most women ate at least 3 foods per 24 hour period since the overall mean number of foods eaten is 3.8 food types as shown in Table 15. As expected, the most commonly consumed food groups are grains (97.3 percent in Mchinji to 100 percent in Lilongwe) mainly in the form of maize meal (*nsima*), followed by vegetables, legumes and oils and sweets (Table 17). This suggests that energy dense diets are consumed in the five districts. The proportion of women who consume any animal food source is 47.7 percent. The results therefore suggest that fish, mostly small fish eaten with bones, is the major animal food source in all the five districts (26.8 percent overall). Similar dietary pattern was observed for the children aged 6 to 23 months suggesting dependency of the young children on family meals once complementary feeding is initiated.

Table 17: Common foods eaten by women 15-49 years of age by District

Parameter	Lilongwe	Mchinji	Balaka	Machinga	Mangochi	Overall
Common foods consumed (%):						
Food made from grains	100.0	97.3	99.0	99.1	99.5	98.9
Vitamin A rich vegetables/tubers	16.1	25.9	8.1	11.9	9.1	14.5
White tubers and roots	15.5	11.2	14.6	29.4	22.0	18.6
Dark green leafy vegetables	69.0	75.9	63.1	69.3	64.0	68.5
Other vegetables	88.1	85.3	89.4	85.3	89.8	87.4
Vitamin A fruits	2.4	8.5	9.6	13.8	12.9	9.7
Other fruits	10.1	12.5	12.6	11.0	10.8	11.5
Organ meat (Iron rich)	.6	.4	.5	.9	.0	.5
Flesh meat	11.9	14.7	12.6	6.0	8.6	10.8
Eggs	6.5	6.2	11.1	4.6	4.3	6.5
Fish	19.0	13.8	23.7	36.7	40.9	26.8
Food from Soya	23.8	27.2	11.6	6.9	14.0	16.6
Food made from g/nuts	38.1	48.2	30.8	41.3	35.5	39.1
Any food from other beans	26.8	25.0	38.4	31.2	32.3	30.7
Milk and milk products	9.5	3.1	3.0	3.2	2.7	4.1
Oils and fats	66.7	61.2	62.1	61.5	62.9	62.7

Sweets	45.8	39.3	33.3	32.1	34.4	36.7
Beverages e.g. .coffee/tea	27.4	23.2	25.3	15.1	19.9	21.9
Spices, condiments	4.2	4.0	2.0	2.8	4.3	3.4
Mean number of foods eaten	**3.8**	**3.7**	**3.8**	**3.8**	**4.0**	**3.8**

About 31 percent of women of child-bearing age (15-49 years of age) had consumed beans, 30.8 to 48.2 percent had consumed groundnut containing foods, while less than 15 percent (6.9 to 27.2 percent) had consumed food containing soya beans (Figure 5). This suggests that most of the women do not consume significant quantities of these commodities being promoted by INVC. Utilization component of any nutrition related interventions require comprehensive promotion including cooking demonstrations in all the five districts to foster positive behavior change.

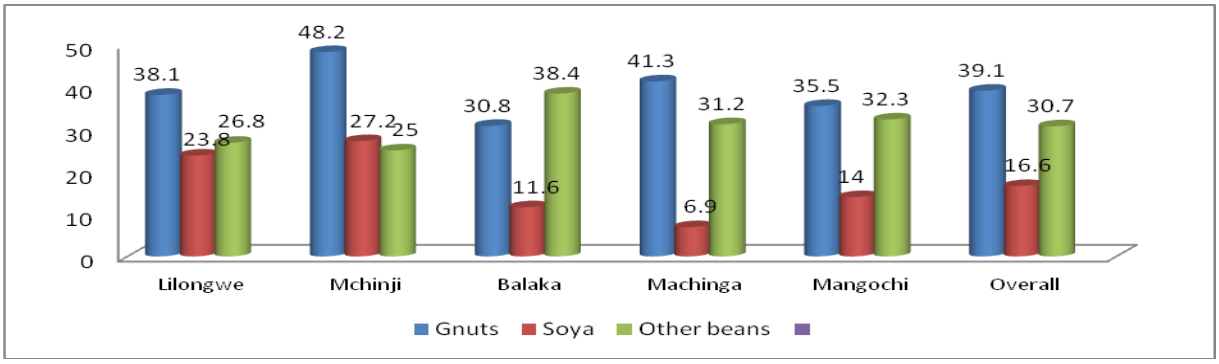

Figure 5: Consumption of groundnut, soya bean and other beans by women age 15 to 49 years

A diet comprising of at least 4 out of the 6 food groups is a highly diversified diet (HDD) while a diet comprising of 2 or fewer food groups is a low diversified diet (LDD). Food consumed the day before the survey was therefore analyzed to establish the dietary diversity status of women of child bearing age. Overall 64.6 percent had achieved high dietary diversity level (Figure 6). It is of concern that 12.9 percent of the women failed to consume a diversified diet. It should be noted that the wider the variety of foods consumed the higher the likelihood that the diet will meet the daily energy and nutrient requirements of the consumer.

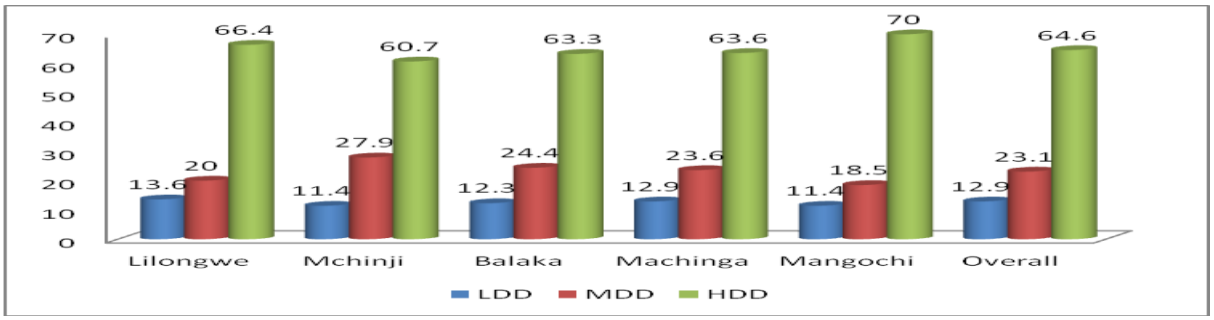

Figure 6: Dietary diversity for women 15 -49 years

Educational level of both the household head and the mother appear to be an important factor affecting dietary diversity of women of child bearing age as shown in Table 18. Consistently the proportion of the women with the highest dietary diversity increased as education level increased.

Table 18: Dietary Diversity of women 15-49 years by education of Household head and caregiver

DD level	Education of household head			Education of caregiver		
	None	**Primary**	**Secondary**	**None**	**Primary**	**Secondary**
LDD	27.7	13.2	13.4	22.6	11.2	5.4
MDD	20.4	23.4	22.2	28.6	21.1	9.9
HDD	51.8	63.5	64.4	48.9	67.7	84.7

The actual types of food predominately eaten by the women at different levels of dietary diversity reveal that cereals and vegetables are consumed universally. However, it is mainly the HDD households who are likely to consume animal foods and legumes Table 19). The LDD and MDD households are therefore at risk of a variety of micronutrient deficiencies**.** Clearly the higher the diversity, the more nutritious the diet becomes.

Table 19: Typical foods consumed day before the survey by dietary diversity level

Lowest dietary diversity (≤ 2 food groups) LDD	**Minimum dietary diversity (3 food groups) MDD**	**High dietary diversity (>4 food groups) HDD**
Cereals Vegetables	Cereals Vegetables Legumes	Cereals (staples) Vegetables Oils and fats Legumes Animal foods

In Malawi vitamin A deficiency and nutritional anaemia often due to iron deficiency, are among the micronutrient deficiencies of public health concern. Attention should therefore be paid to ensure that micronutrient nutrition that includes vitamin A and iron are adequately covered in any nutrition intervention implemented. Consumption of vitamin A and iron rich foods were assessed from the 24 hour dietary recall data and the results are presented in Figure 7. It is impressive that almost 90 percent of the women consumed vitamin A rich foods. It is of grave concern that in all the districts, the proportion of women that consumed iron rich food was less than 30 percent except for Mangochi and Machinga.

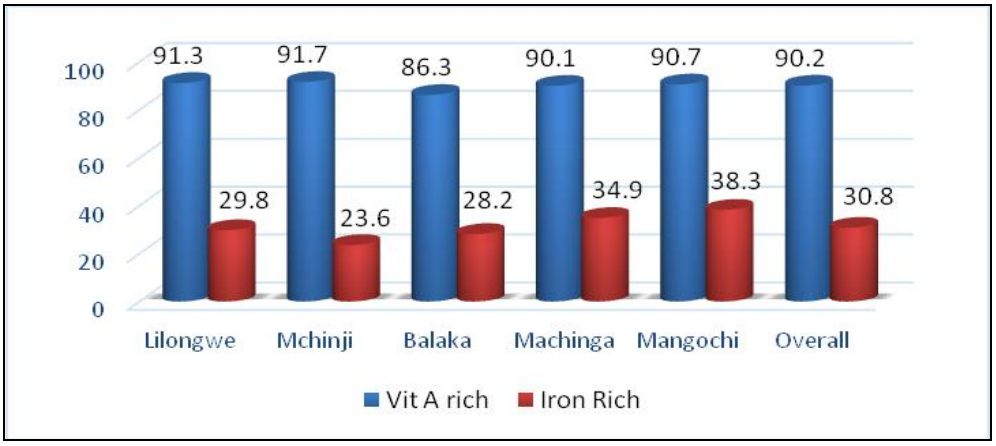

Figure 7: Consumption of Vitamin A rich and Iron rich foods by district

3.7 Communication (drama performances and Radio)

Communication utilizing Pakachere travelling theatre, Pakachere community drama groups and the radio is being implemented in Lilongwe and Mchinji. The current survey captured data on whether or not these have reached the communities and if so what messages have reached the people.

The results are presented in Tables 20 through 21. Overall a significant proportion had heard radio programme (61.3%) while only 21.6 percent had attended theatre performances. Even fewer beneficiaries had seen theatre performance and had heard a radio programme.

While few individuals had attended theatre performances it appears that the community drama groups are not fully functional as indicated by the fewer beneficiaries (5.9%) that had attended them. However it is encouraging that a significant proportion were able to recall maternal and child nutrition messages and water and sanitation.

Table 20: Attendance of drama performances and radio listening by District

District	**Lilongwe**		**Mchinji**		**Both districts**	
	n	**%**	**N**	**%**	**n**	**%**
Beneficiaries who had seen drama performance	53	16.2	95	26.6	148	21.6
Beneficiaries who had heard radio programme	192	58.7	224	63.6	416	61.3
Beneficiaries who had seen drama performance and heard radio programme	33	10.3	52	14.9	85	12.7
Performing group	**Pakachere Travelling theatre**			**Pakachere community drama group**		
District	**Lilongwe**	**Mchinji**	**Overall**	**Lilongwe**	**Mchinji**	**Overall**

Percent attended performances	15.4	22.3	19.1	3.3	8.3	5.9
Recalled messages from theatre performances (%):						
Maternal ANC and Diet	35.7	45.3	41.0	5.2	14.4	10.0
Exclusive Breastfeeding	6.5	28.3	27.5	5.2	14.4	10.0
Complementary Feeding	23.9	24.6	24.3	5.2	14.4	10.0
Water and Sanitation	21.2	28.3	25.1	4.2	14.4	10.0

Theatre shows were perceived to be beneficial as it was reported by 53.4 percent who had attended the shows that they learned about disease prevention. Some beneficiaries even felt that drama contributed to reduction in gender based violence (Table 21). However quantification of the findings could not be done since only quantitative tools were used for data collection.

Table 21: Benefits of drama performances by district

Parameter	Lilongwe		Mchinji		Overall	
	n	%	n	%	n	%
Benefits of theatre performances:						
Reduced disease occurrences	18	48.6	35	56.5	53	53.5
HIV/AIDS prevention	16	43.2	20	32.3	36	36.4
Increased nutrition knowledge	3	8.1	4	6.5	7	7.1
Reduced gender based violence	0	0.0	3	4.8	3	3.0

Relatively more people had heard radio nutrition related messages either in a full radio programme or jingles (Table 22). The messages recalled and the perceived benefits are similar to those indicated for theatre and community drama. These channels should be utilized for further dissemination of the messages in addition to the care group model.

Table 22: Proportion of people heard radio message on nutrition

Parameter	Lilongwe		Mchinji		Overall	
Heard Radio Message	192	58.7%	224	63.6%	416	61.3%
Type of Radio Programme:						
Full radio programme	151	78.6%	162	72.3%	313	75.2%
PSA Jingles	41	21.3%	62	27.6%	103	24.7%
Topics remembered:						
Maternal ANC and Diet	128	68.8%	143	65.5%	271	67.1%
Exclusive Breastfeeding	46	24.6%	87	39.7%	133	32.8%
Complementary Feeding	75	40%	89	30.3%	164	40.3%
Water and Sanitation	42	23.0%	84	38.5%	126	31.4%
Importance of 6 food groups	25	6.1%	19	4%	44	2.2%
HIV/AIDS prevention	2	0.5%	0	0.0	2	0.5%
Gender based violence	1	0.2%	0	0.0	1	0.2%

Benefits of Radio programmes:

Low diseases occurrences	56	31.5%	84.4	41.8%	140	36.9%
Improved nutrition at household level	113	63.5%	107	53.2%	220	58%
Preventive in maintaining good health and family	9	5.1%	10	5.0%	19	5.0%

Further analysis was done to find out whether or not attendance of drama and radio listening may influence IYCN practices such as exclusive breastfeeding and consumption of minimum acceptable diet. In Lilongwe and Mchinji, 58 children were aged 0-5 months and 40 of these were being breastfed exclusively. There appear to be a positive relationship between radio listening and drama attendance with exclusive breastfeeding (Table 23). A significant proportion of children whose mothers participated in both were being exclusively breastfed (0-5 months) and received minimum acceptable diet (6-23 months). Use of both theatre and radio should therefore be strengthened in disseminating appropriate IYCN practices. Also presented in Table 23 is proportion of 6-23 month children whose mothers attended drama, listened to radio, participated in both and those without esporure to any in relation to consumption of minimum acceptable diet. Among the participating mothers, high proportions were those that had fed their children minimum acceptable diet.

Table 23: Effect of drama attendance and radio listening on IYCN and maternal dietary pattern

Indicator	**Attended drama**		**Heard radio Jingles**		**Heard both**		**No exposure**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Percent children receiving minimum acceptable diet	18	77.8	109	64.2	25	88.0	82	61.0
Percent 0-5 months children exclusively breastfed	2	50.0	28	75.0	9	77.8	19	57.9
Percent women 15-49 years who ate diversified diet	52	67.3	319	64.9	86	76.7	209	58.9
Mean number of foods eaten by women 15-49 years with HDD	35	4.7	207	4.5	66	4.6	123	4.3
Mean number of foods eaten by all women 15-49 years	52	4.1	319	3.8	86	4.1	209	3.6

Similar results are also seen for women of child bearing age. A higher proportion (76.7%) of women that had attended drama performance and engaged in radio listening had consumed a diversified diet compared with 67.3 percent and 64.9 percent of those that had only attended drama performance or listened to radio jingles respectively. Mean number of foods consumed were hardly affected (Table 22).

3.8 General Commentary and observations

Delays were experienced once a team entered a village due to a number of reasons which included the following:

- Some beneficiary names recorded in the data base were not known by the village leadership. In most villages especially in the Centre and the South, once a woman is married she uses her husband's first name as her surname. The name however changes once she is divorced to the first name of the new husband she is married to. The issue is further complicated by the fact that the woman often has another name she is usually known with in her village.

- Some of the sampled women had moved away from the village because they had gone to seek *ganyu* across the borders to Zambia or Mozambique. Others had married and opted to live at the husband's village.

- There were five beneficiaries who had passed on.

- A significant number of beneficiaries were not at home on the interview dates as most of them were engaged in small scale businesses.

- On day of data collection, two of the sampled women were sick and could not be interviewed.

The total number of sampled beneficiaries that had to be replaced is 264 (16.4%) as shown in Table 24. Before replacement, the teams consulted the village heads, lead mothers, promoters whenever possible for those who were not known. Those who were not at home, their homes were visited two times in the day and the following day before they were replaced.

Table 24: Number of beneficiaries replaced by reason and District

Reasons for replacement	Mchinji	Lilongwe	Balaka	Machinga	Mangochi	Total
Not at home	14	15	18	22	19	88
Moved away	21	20	11	6	19	77
No such person	15	17	16	29	13	90
Death	1	0	2	1	1	5
Refused to participate	2	0	0	0	0	2
Hospitalized	1	0	1	0	0	2
Total	**54**	**52**	**48**	**58**	**52**	**264**

It was further observed that the promoters are responsible for an area too large for them to keep track of their area so that they did not know some of the caregroup members. Likewise, a number of lead mothers indicated that they had interacted with their promoter only during the group formation. During data collection most of the promoters could not be reached by phone. In addition the nutrition coordinators are hardly known by the lead mothers let alone the caregroup members in all the districts except Machinga to some extent. Hence, supportive supervision at all levels is required. It is further suggested that a systematic way be devised to keep track of the beneficiaries and caregroup names to ensure that the data base in regularly updated.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

Dietary pattern for infants and young children in all the five districts were problematic in that very few children had been fed minimum acceptable diets. A relatively high proportion was fed with acceptable meal frequency but the quality of infant and young children's diet was low. It implies that the complementary food fed is of poor quality and composed of a limited number of food groups. Cereal grains eaten with vegetables are the main stay of the diet for both the children and their mothers. All these are bulky and have low energy and nutrient density, hence difficult for the children to meet their recommended daily nutrient requirements. Children, because of their small stomachs and high nutrient requirements, need to be fed at least 4 times but with highly nutritious feeds.

Most of the households had access to safe water sources mainly the borehole. The fact that a significant proportion had diarrhoea during the dry season may indicate unsanitary environment and that care of the water at home is inadequate leading to contamination. Early introduction of fluids and other food should strongly be discouraged because it limits the frequency of breastfeeding by the infant and exposes the baby to the risk of infections.

While production of legumes is promoted to increase productivity, special effort should be made to intensify the utilization component. This will entail keeping some for home consumption and the surplus for sale to meet other household requirements. Actual cooking demonstrations and processing should be done to improve skills of the beneficiaries so that consumption of legume food products at household level is increased and dietary diversity improved.

The few individuals, who attended drama groups, appear to have benefited in the following areas; maternal and child nutrition, diet, sanitation and health. Promotion of these should be strengthened and scaled up to other districts as well. To ensure that many people patronize theatre, every opportunity that avails in the village such as religious meetings should be used to widely publicize the events.

Frontline workers should continue to include MIYCN messages to mothers at any opportunity that avails itself. It is important to include even cooking demonstrations using locally available foods to encourage the mothers to adopt the appropriate maternal, infant and young child feeding practices. For the frontline workers to effectively convince the communities they work with, separate training sessions in MIYCN should be designed targeting all frontline workers and community leadership for the care groups including lead mothers/fathers.

It was observed that the promoters are responsible for an area too large for them to keep track of so that they did not know some of the care groups and their members. In addition the nutrition coordinators are hardly known by the lead mothers let alone the care group members in all the districts except Machinga to some extent. Hence, supportive supervision at all levels is required. It is further suggested that a systematic way be devised to keep track of the beneficiaries and caregroup names to ensure that the data base in regularly updated.

6.0 REFERENCES

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7.0 ANNEXES

Annex 1: Questionnaire for the Nutrition Outcome Survey for Monitoring and Evaluation of USAID/FtF-INVC Project: Lilongwe, Mchinji, Balaka, Mangochi and Machinga

Introduction: *Enumerators, please introduce the purpose of the survey and state confidentiality of the responses. Please tell the respondent that participation in this study is voluntary and that s/he will not receive any direct benefit due to participation in this study. Use the introductory sheet provided to you.*

INFORMED CONSENT MODULE: REQUEST FOR CONSENT [in Chichewa]:

How are you? My name is _____I am here with a group of research workers from Lilongwe University of Agriculture and Natural Resources, Bunda Campus, a project called Feed the Future –Integrating Nutrition in Value Chains (INVC). The project aims at helping communities such as this one to grow more legumes to increase the harvest of high-value crops such as groundnuts, and soy beans that can be produced and sold. The aim is to improve the nutrition and incomes of households in this community by helping the local community to organize themselves and find ways to produce more food and be able to sell the extra.

This interview is meant to help us understand the current state of nutrition and health in this community. You have been randomly selected to be part of the group of households to provide the information needed to assess the existing situation. The information is needed to help clarify what are the best ways to assist the community to develop itself. Among other things, I will ask you a number of questions regarding your infant and young child feeding practices, types of foods consumed, health, your own dietary practices.

All the answers you give in this interview will be treated with strict confidentiality. The answers we get from you will be treated completely anonymously. Your name or the names of your family members or those related to you will NOT be used to identify your answers. No one will be able to identify your answers with you or your family members.

- *Are you willing to answer these questions?* ***YES/NO****.*
- *Thank you for accepting to participate.*

Muli bwanji, dzina langa ndine _____ ndabwera ndi anzanga akafukufuku kuchokera ku sukulu ya za malimidwe ku Bunda, kudzela mu polojekiti yotchedwa kudyetsera tsogolo la mawa – imene ikubweretsa pamodzi madyedwe oyenera ndi ndondomeko zokhuza zakudya.
Zolinga za pulojekiti imeneyi ndi kulimbikitsa ulimi wa mbeu za mtundu wa nyemba monga mtedza, ndi soya ndicholinga chofuna kuchulukitsa kakololedwe ka mbeuzi zomwe ndi zaphindu ku thanzi lathu ndipo kuti zikakololedwa zambiri tingathenso kugulitsako. Pakutero titha kupititsa patsogolo thanzi komanso chuma mmabanja athu podzipezera tokha njira zimene zingalimbikitse ulimi.

Cholinga cha kucheza nanu ndi kuti tidziwe za madyedwe ndi za umoyo kudera lino. Nyumba yanu ndi imodzi mwa nyumba zimene zasankhidwa kudzera m'mayere ndi cholinga choti tidziwe mwatchutchutchu za m'mene nkhani za umoyo ndi madyedwe zikuyendera kuno. Zimene mutiuze zithandizira kuunikira njira zimene zingathandize dera lino kuti litukuke. Mwazina, ndikufusani mafunso okhudzana ndi kadyetsedwe ka ana ang`ono, mitundu ya zakudya, za umoyo, ndi zamadyedwe ayinuyo.

Zonse zimene tikambilane zikhala za chinsinsi, Mayankho anu onse asungidwa mwa chinsinsi, komanso dzina lanu kapena la wina aliyense wa pakhomo pano silikagwilitsidwa ntchito.

- **Ndinu okonzeka kutenga nawo gawo poyankha mafunso? INDE/AYI _____**

Zikomo kwambiri pokola kutenga nawo mbali pazokambilana zanthu.

Date of interview (dd/mm/yy):_____/____/2015
Time Interview started _____:_____ *Time Interview Ended* ____:_____

QUESTIONNAIRE NUMBER: |_____|

Researchers & supervisor Details

		Code
Enumerator name		
Supervisor name		
Interview date		
Respondent: Beneficiary of NASFAM, CADECOM or FUM?	1 =NASFAM 2 =CADECOM 3 =Farmers Union of Malawi (FUM)	
District →see codes below:		
EPA		
Traditional Authority Name		
Group Village Headman (GVH) name		
Name of village		
Name of household head		

District Code

1=Lilongwe
2=Mchinji
3=Balaka
4=Machinga
5=Mangochi

A: GENERAL INFORMATION AND HOUSEHOLD COMPOSITION

*Please provide me with information on the composition of your household as per the table below. Please note: A "**household**" includes all members of a common decision making unit (usually within one residence) that are sharing the same household resources. These include members who may be away from home e.g. school children attending boarding schools.*

A0 Household size ***pakhomo pano mulipo angati?|_____|***

		A1	**A2**	**A3**	**A4**	**A5**	**A6**
No.	Household (HH) member NAME: Start with Household Head followed by spouse (if any) then followed by rest of household members	WHAT IS THE RELATIONSHIP OF THIS HH MEMBER TO THE HH HEAD (*see RELATIONSHIP CODES below*)	WHAT IS THE AGE OF THIS HH MEMBER? (*years*) >years and months if is under 5yrs	IS THIS HH MEMBER MALE OR FEMALE? 1=Male 2=Female	LEVEL OF FORMAL EDUCATION 1-None 2-Primary School; 3-Secondary.School; 4-Post secondary 5-University 6-Under age 7- Don't Know IF NONE go to A6	HOW MANY YEARS OF FROMAL SCHOOLING HAS THIS HH MEMBER HAD AS OF 2015 (*years*)	WHAT IS THE MAIN OCCUPATION OF THIS HH MEMBER (*see code below table*)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

RELATIONSHIP CODES:

1. Head
2. Husband
3. 1st wife
4. 2nd wife
5. 3rd wife
6. 4th wife
7. Son
8. Daughter
9. Father
10. Mother
11. Brother
12. Sister
13. Cousin
14. Other relatives
15. Other non-relatives
16. Worker lives within HH
17. Worker lives outside HH
18. Wife

OCCUPATION CODE:

1. Farmer
2. School Teaching
3. Artisan/Blacksmith
4. Civil servant
5. Trader/Shopkeeper
6. Seasonal Agric. Labourer (*seasonal ganyu*)
7. Permanent agricultural labourer (permanent perm)
8. Casual labor
9. Seasonal non-agric Labourer (*non agric ganyu*)
10. Permanent non-agric labour (mining, transport)
11. Student
12. Housework
13. Retired
14. Military/Police
15. Fisherman
16. Other specify

99. None *(only for second, or those under elderly care incapacitated)*

B. WATER AND SANITATION

B1. Source of drinking water (Kodi madzi akumwa mumatunga kuti) ☐

1 Piped water in dwelling 2. Piped into yard or plot 3. Public tap 4. Borehole with pump
5. Protected dug well 6. Protected spring 7. Rainwater collection 8. Unprotected dug well
9. Unprotected spring 10. Pond, river or stream 11. Tanker-truck, vendor 12. Other (Specify)

B2. Distance to water source and back (Mumatenga nthawi yaitali bwanji kupita ndi kubwerako)

Number of . Minutes……__ __ __
Water on premises……888
Do not know……...999

B3. Type of toilet facility for household use (Kodi chimbudzi chanu ndi chotani) ☐
(Enumerator verify the toilet facility)

1 Flush to sewage system or septic tank 2. Pour flush latrine (water seal type) 3. Improved pit latrine (e.g. VIP

4. Traditional pit latrine 5. Open pit 6. Bucket 7. No facilities or bush or field 8 Other specify

B4 Location of toilet facility (Chimbudzi chanu chili pati) ☐

1 Within dwelling/yard/compound 2 Outside dwelling/yard/compound

B5 Disposal of young children stools of under 3yrs(Kodi akachita chimbudzi mumachisamalabwanji? ☐
1. Children always use toilet or latrine 2. Thrown into toilet or latrine 3.Thrown outside the yard
4. Buried in the yard 5. No young children in household 6. Other (specify)_____

C. MORBIDITY (ILLNESS RECALL)

[Repeat for each child under 3 years] *Bwerezani mafunsowa pa ana onse osapitirira zaka zitatu pakhomopo*

	Child1 (youngest)	**Child 2**
C1 In the last 2 weeks, has NAME had 3 or more semi-solid or liquid stools (acute diarrhea) in a 24-hour period? ***Kodi mwanayi (tchulani dzina) anatsegulako m'mimba masabata awiri apitawa?*** 1. YES 2. NO **>> skip to C11** 3. Don't Know **>> skip to C11**	☐	☐
***C2 For how many days did NAME have the 3 or more semi-solid or liquid stools* (acute diarrhea) in a 24-hour period?** *Kodi mwana ameneyi anatsegula mmimba masiku angati?*	**DAYS** ☐	**DAYS** ☐
***C3 During the time NAME had 3 or more semi-solid or liquid stools in a 24-hour* period, was there any <u>blood</u> in the stool?** *Panthawi imene mwanayu(dzina lake) amatsgegula mmimba, chimbudzi chake chinali ndi magazi?* 1. YES 2. NO 3. Don't Know	☐	☐
C4 Did NAME receive ANY treatment for the diarrhea? ***Kodi mwanayi (dzina) analandira chithandizo china chili chonse pamene amatsegula mmimba?*** 1. YES 2. NO 3. Don't Know	☐	☐

C5 When (child name)had diarrhea, what did you do? Panthawi imene mwanayu amatsegula m'mimba, munapangapo chiani? 1. Cease breastfeeding/giving food 2. Give salt for diarrhea at home 3. Go to church / preacher 4. Go to traditional healer 5. Go to health centre-post / hospital 6. Nothing 7. Other (specify) ***Multiple answers possible***	☐	☐
C6. Which treatment was given to NAME for the diarrhea? (indicate all that apply) *Mwanayi(tchulani dzina) analandira chithandizo chanji atatsegula mmimba* 1 Oral Rehydration Therapy (ORT) 2 Zinc Supplements 3 Local/Homemade Syrups 4 Continued Breastfeeding Or Feeding 5 Other Specify ***Multiple answers possible***	☐	☐
C7. When (NAME) had diarrhea, did the intake of fluid change ? ***(Nthawi imene mwanayi (tchulani dzina) amatsegula mmimba kodi kaperekedwe kazakumwa kanasintha)?*** 1. YES 2. NO 3 Don't know	☐	☐
C8. If yes, did the fluid intake change in relation to the usual amount ? ***(Ngati Inde kanasintha motani)?*** 1. Less 2. About the same 3. More 4. Nothing to drink	☐	☐
C9. When (NAME) had diarrhea, did the intake of food change ***(Nthawi imene mwanayi (tchulani dzina) amatsegula mmimba kodi kaperekedwe kazakudya kanasintha)?*** 1. YES 2. NO 3 Don't know	☐	☐
C10. If yes how did the food intake change in relation to the usual amount? ***Ngati Inde kanasintha motani)?*** 1. Less 2. About the same 3. More 4. Nothing to eat	☐	☐
C11. In the last 2 weeks, has NAME had a fever? ***Kodi mwana wanuyu anatenthako thupi masabata awiri apitawa?*** 1. YES 2. NO **>> skip to C16** 3. Don't Know **>> skip to C16**	☐	☐

C12 .When (NAME) had fever did the intake of fluid change ?(Nthawi imene mwanayi (tchulani dzina) anatentha thupi kodi kaperekedwe ka zakumwa kanasintha? 1. YES 2. NO ***3. Don't Know***	☐	☐
C13. If yes did the fluid intake change in relation to the usual amount ? Ngati inde kanasintha bwanji? 1. Less 2. About the same 3. More 4. Nothing to drink	☐	☐
C14. When (NAME) had fever, did the intake of food change Nthawi imene mwanayi (tchulani dzina) anatentha thupi kodi kaperekedwe ka zakudya kanasintha? 1. YES 2. NO ***3. Don't Know***	☐	☐
C15. If yes how did the food change relation to the usual amount? Ngati inde kanasintha bwanji 1. Less 2. About the same 3. More 4. Nothing to eat	☐	☐
C16. During the last 2 weeks, has NAME had malaria Kodi mwana wanuyu anadwalapo malungo masabata awiri apitawa? ***1. YES 2. Yes without testing 3. NO >>*** **skip to D01** ***3. Don't Know>>*** **skip to D01**	☐	☐
C17. When (NAME) had malaria did the intake of fluid change ? Nthawi imene mwanayi (tchulani dzina) anadwala malungo kodi kaperekedwe ka zakumwa kanasintha? ***1. YES 2. NO 3. Don't Know***	☐	☐
C18. If yes did the fluid intake change in relation to the usual amount ? Ngati inde kanasintha bwanji Less 2. About the same 3. More 4. Nothing to drink	☐	☐
C19. When (NAME) had malaria, did the intake of food change Nthawi imene mwanayi (tchulani dzina) anatentha thupi kodi kaperekedwe ka zakudya kanasintha? ***1. YES 2. NO 3. Don't Know***	☐	☐
C20. If yes how did the food changein inrelation to the usual amount? Ngati inde kanasintha bwanji 1. Less 2. About the same 3. More 4. Nothing to eat	☐	☐

MODULE D: INFANT AND YOUNG CHILD FEEDING

Enumerator Instructions: Household identification (*in data file, each respondent must be matched with the HH ID*) ☐☐☐☐☐☐

Ask these questions of the primary caregiver of each child aged 0–35 months in the household. Check to see if EACH caregiver has given consent to be interviewed in INFORMED CONSENT MODULE. If a caregiver has not yet given consent, return to Module B and gain caregiver consent before proceeding. You should carry duplicate copies of this module in case there are more than 5 children 0-35 months old in the household.

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
D01	CAREGIVER'S ID CODE FROM THE HOUSEHOLD ROSTER		☐☐	☐☐	☐☐	☐☐	☐☐
D02	CHILD'S ID CODE FROM THE HOUSEHOLD ROSTER		☐☐	☐☐	☐☐	☐☐	☐☐
D03	What is [child's name]'s sex?	1 = Male 2 = Female					
D04	Now I would like to ask you some questions about [child's name]. *Tsopano ndikufunsani mafunso okhudzana ndi (*dzina la mwana*)* What is the date of birth of [child's name]? Kodi *(*dzina la mwana*)* anabadwa liti? Does [child's name] have a health passport or any other written document with the birth date recorded? Kodi *(*dzina la mwana*)* ali ndi bukhu la kuchipatala kapena china chiri chose chimene palembeda tsiku limene (dzina la mwana) anabadwa? IF THE HEALTH PASSPORT CONFIRMS THE INFORMATION IS CORRECT, RECORD THE DATE OF BIRTH AS DOCUMENTED ON THE PASSPORT.		☐☐ Day ☐☐ Month ☐☐☐☐ Year 1=yes ☐ 2=no	☐☐ Day ☐☐ Month ☐☐☐☐ Year	☐☐ Day ☐☐ Month ☐☐☐☐ Year	☐☐ Day ☐☐ Month ☐☐☐☐ Year	☐☐ Day ☐☐ Month ☐☐☐☐ Year

D05	How old was [child's name] at [his/her] last birthday? RECORD AGE IN COMPLETED YEARS		☐ Years	☐ Years	☐ Years	☐ Years	☐ Years
D06	How many months old is [child's name]? RECORD AGE IN COMPLETED MONTHS		☐☐ Months	☐☐ Months	☐☐ Months	☐☐ Months	☐☐ Months
D07	CHECK D04, D05, AND D06 TO VERIFY CONSISTENCY A) IS THE YEAR RECORDED IN D04 CONSISTENT WITH THE AGE IN YEARS RECORDED IN D05? B) ARE YEAR AND MONTH OF BIRTH RECORDED IN D04 CONSISTENT WITH AGE IN MONTHS RECORDED IN D06? IF THE ANSWER TO A OR B IS 'NO,' RESOLVE ANY INCONSISTENCIES. IF THE BIRTHDATE WAS RECORDED ON A HEALTH PASSPORT, THIS MAY BE USED AS THE CORRECT DATA SOURCE.	1 = Yes 2 = No 1 = Yes 2 = No					
D08	CHECK D06. IS THE CHILD UNDER 36 MONTHS?	1 = Yes 2 = No >> end module 9 = Don't know >> end module					

	EXCLUSIVE BREASTFEEDING AND MINIMUM ACCEPTABLE DIET *Kuyamwitsa mwana mwa kathithi ndi kudya koyenera*						
D09	CHECK QUESTION D05. IS THE CHILD UNDER 2 YEARS OF AGE?	1 = Yes 2 = No **>> D28**					
D10	Has [child's name] ever been breastfed? *Kodi mwanayu (tchulani dzina la mwana) adayamba wayamwako chibadwire?*	1 = Yes 2 = No **>> skip to D14** 9 = Don't Know **>> skip to D14**					
D11	Is (child name) still breastfed? Kodi *(*dzina la mwana*)* akadayamwabe?	1 = Yes 2 = No >> **skip to D14**					
D12	Was [child's name] breastfed yesterday during the day or at night? *Kodi (*dzina la mwana*) dzulo anayamwako usana kapena usiku?*	1 = Yes **>> skip to D14** 2 = No 9 = Don't Know					
D13	*Sometimes babies are fed breast milk in different ways, for example by spoon, cup, or bottle. This can happen when the mother cannot always be with her baby. Sometimes babies are breastfed by another woman or given breast milk from another woman by spoon, cup, bottle, or some other way. This can happen if a mother cannot breastfeed her own baby. (Nthawi zina ana angapatsidwe mkaka wam'mawere, mwatchitsanzo kugwiritsa ntchito sipuni, kapu ngakhalenso botolo, izi zikhoza kuchitika pamene mwana sangakhale ndi mayi wake nthawi zonse, Nthawi zina mwana amayamwitsidwa ndi mai wina kapena kupatsidwa mkaka wammawere kuchokera kwa mai wina pogwiritsa ntchito sipuni, kapu kapena botolo. Izi zikhoza kuchitika ngati mai sangathe kuyamwitsa mwana wake.*						
	Did [child's name] consume breast milk in any of these ways yesterday during the day or at night? Kodi *(*dzina la mwana*)* anapatsidwa mkaka wam'mawele kudzera munjira zimenezi dzulo?	1 = Yes 2 = No 9 = Don't Know					
No.	**Question**	**Response codes**	**Child 1**	**Child 2**	**Child 3**	**Child 4**	**Child 5**
D14	Now I would like to ask you about some medicines and vitamins that are sometimes given to infants. *Tsopani ndikufuna kuti ndikufunseni za mavitamin kapenda mankhwala amene ana*	1 = Yes 2 = No 9 = Don't Know					

	amapatsidwa Was [child's name] given any vitamin drops or other medicines as drops yesterday during the day or at night? *Kodi (*dzina la mwana*) anapatsidwako mankhwala ena alionse dzulo?*						
D15	Was [child's name] given **Thanzi ORT** yesterday during the day or at night? *Kodi (*dzina la mwana*) anapatsidwako thanzi dzulo?*	1 = Yes 2 = No 9 = Don't Know					
	READ THE QUESTIONS BELOW. READ THE LIST OF LIQUIDS ONE BY ONE AND MARK YES OR NO, ACCORDINGLY. *Funsani mafunso ali mmunsiwa palokha palokha ndipo ayankhe eya kapena ayi?* Next I would like to ask you about some liquids that [child's name] may have had yesterday during the day or at night. READ THE LIST OF LIQUIDS STARTING WITH 'PLAIN WATER. *Tsopano tikufunsani zakumwa zimene anamwako dzulo mwanayu (dzina la mwana)*						
D16	Plain water? *Madzi akumwa*	1 = Yes 2 = No 9 = Don't Know					
D17	Infant formula such as **lactogen**? *Mkaka wa mwana wa kusitolo (Okhala mu chitini)*	1 = Yes 2 = No >> skip to D19 9 = Don't Know>> skip to D19					
D18	How many times yesterday during the day or at night did [child's name] consume any formula? PROBE: ANY MORE? *Kodi (*dzina la mwana*) anamwa kangati mkaka wa wana waku sitolo?*	98 = Don't know	☐☐ Times	☐☐ Times	☐☐ Times	☐☐ Times	☐☐ Times
D19	Did [child's name] have any milk such as tinned, powdered, or fresh animal milk? *Kodi (*dzina la mwana*) dzulo anamwako mkaka waufa, wamchitini monga Nido, kapena wa mkaka wa ziweto.*	1 = Yes 2 = No >> skip to D21 9 = Don't Know >> skip to D21					
D20	How many times yesterday during the day or at night did [child's name] consume any milk? PROBE: ANY MORE? *Kodi (*dzina la mwana*) dzulo anamwa kangati mkaka wina uliwonsewo*	Number of times 98 = Don't know	☐☐ Times	☐☐ Times	☐☐ Times	☐☐ Times	☐☐ Times

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
D21	Did [child's name] have any juice or juice drinks? *Kodi (*dzina la mwana*) anamwako juwisi wina aliyense ?*	1 = Yes 2 = No 9 = Don't Know					
D22	Clear broth or msuzi? *Anamwako nsuzi wina uliwonse?*	1 = Yes 2 = No 9 = Don't Know					
D23	Yogurt? *Nanga yogati kapena chambiko?*	1 = Yes 2 = No >> skip to D25 9 = Don't Know>> skip to D25					
D24	How many times yesterday during the day or at night did [child's name] consume any yogurt? PROBE: ANY MORE? *Yogatiyu kapena chambiko anamwa kangati dzulo?*	Number of times 98 = Don't know	☐☐ Times	☐☐ Times	☐☐ Times	☐☐ Times	☐☐ Times
D25	Did [child's name] have any thin porridge? *Kodi (*dzina la mwana*) anamwako phala la madzi-madzi?*	1 = Yes 2 = No 9 = Don't Know					
D26	Any other liquids such as thobwa? *Nanga chakumwa china chili chonse ngati thobwa?*	1 = Yes 2 = No 9 = Don't Know					
D27	Any other liquids? *Nanga chakumwa china chili chonse poonjezera tatchula kale zija?*	1 = Yes 2 = No 9 = Don't Know					

DIETARY DIVERSITY

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
	Please describe everything that [child's name] ate yesterday during the day or night, whether at home or outside the home. *Fotokozani zakudya zonse zimene (*dzina la mwana*) anadya dzulo kunyumba kuno kapena koyenda, kuyambira mmawa kutacha mpaka madzulopamene amakagona.* A) Think about when [child's name] first woke up yesterday. Did [child's name] eat anything at that time? IF YES: Please tell me everything [child's name] ate at that time. PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE. THEN CONTINUE TO PART B). *NGATI ANADYA, TCHULANI ZAKUDYA ZIMENE ANADYAZO, YESETSANI KUFUNSITSITSA* IF NO, CONTINUE TO PART B). *NGATI NDI AYI PITILIZANI KU PART B* B) What did [child's name] do after that? Did [child's name] eat anything at that time? IF YES: Please tell me everything [child's name] ate at that time. PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE. REPEAT QUESTION B) UNTIL THE RESPONDENT SAYS THE CHILD WENT TO SLEEP UNTIL THE NEXT DAY. IF RESPONDENT MENTIONS MIXED DISHES LIKE A PORRIDGE, SAUCE, OR STEW, PROBE: C) What ingredients were in that [mixed dish]? PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE FUNSITSITSANI KUTI KU CHAKUDYAKO ANATHIRAKO CHIANI? AS THE RESPONDENT RECALLS FOODS, UNDERLINE THE CORRESPONDING FOOD AND ENTER '1' IN THE RESPONSE BOX NEXT TO THE FOOD GROUP. IF THE FOOD IS NOT LISTED IN ANY OF THE FOOD GROUPS BELOW, WRITE THE FOOD IN THE BOX LABELED 'OTHER FOODS.' IF FOODS ARE USED IN SMALL AMOUNTS FOR SEASONING OR AS A CONDIMENT, INCLUDE THEM UNDER THE CONDIMENTS FOOD GROUP. ONCE THE RESPONDENT FINISHES RECALLING FOODS EATEN, READ EACH FOOD GROUP WHERE '1' WAS NOT ENTERED IN THE RESPONSE BOX, ASK THE FOLLOWING QUESTION AND ENTER '1' IF RESPONDENT SAYS YES, '0' IF NO, AND '9' IF DON'T KNOW: Yesterday, during the day or night, did [child's name] drink/eat any [food group items]?						
	OTHER FOODS: PLEASE WRITE DOWN OTHER FOODS (TO THE RIGHT OF THIS BOX) THAT RESPONDENT MENTIONED BUT ARE NOT IN THE LIST BELOW. THIS WILL ALLOW THE SURVEY SUPERVISOR OR OTHER KNOWLEDGEABLE INDIVIDUAL TO CLASSIFY THE FOOD LATER.		WRITE FOODS MENTIONED HERE:	WRITE FOODS MENTIONED HERE:	WRITE FOODS MENTIONED HERE:	WRITE FOODS MENTIONED HERE:	WRITE FOODS MENTIONED HERE:
No.	**Question**	**Response codes**	**Child 1**	**Child 2**	**Child 3**	**Child 4**	**Child 5**

D28	Food made from grains such as bread, rice, noodles, porridge, **nsima**, any other foods made from millet, sorghum, maize, rice, wheat or other locally available grains. ZAKUDYA ZOKHUTITSA:	1 = Yes 2 = No 9 = Don't Know					
D29	Pumpkin, carrots, orange/yellow fleshed sweet potatoes, or other locally available orange/yellow fleshed vegetables and tubers (Zakudya zofiira mkati)	1 = Yes 2 = No 9 = Don't Know					
D30	**WHITE TUBERS AND ROOTS:** White potatoes, white yams, cassava, or any other foods made from roots and tubers (Zakudya zagulu la zikhawo)	1 = Yes 2 = No 9 = Don't Know					
D31	**DARK GREEN LEAFY VEGETABLES**: Any dark green leafy vegetables such as cassava leaves, sweet potato leaves, amaranths, black jack leaves and any other locally available dark green leafy vegetables. (Ndiwo za masamba obiriwira)	1 = Yes 2 = No 9 = Don't Know					
D32	**OTHER VEGETABLES:** such as tomato, onion, eggplant) , including wild vegetables *(Masamba ena monga tomato, anyezi, mabilinganya ndi ena opezeka kutchire*	1 = Yes 2 = No 9 = Don't Know					
D33	Ripe mangoes, ripe papayas or other local vitamin A-rich fruits. Mango akupsa, papaya wakupsa kapena zipatso zina zili zones zokhala ndi vitamin A	1 = Yes 2 = No 9 = Don't Know					
D34	**OTHER FRUITS:** such as citrus, apples, white guavas or any other fruits including wild ones. Zipatso zina monga maolanje, mandimu, nachesi, manyumwa, guwafa ndi zipatso za	1 = Yes 2 = No 9 = Don't Know					

	kutchire						
D35	**ORGAN MEAT (IRON-RICH):** Liver, kidney, heart, or other organ meats **Chiwindi,impyso, mtima ndi zina**	1 = Yes 2 = No 9 = Don't Know					
D36	**FLESH MEATS:** beef, pork, lamb, goat, rabbit, mice, wild game, chicken, duck, pigeon or other birds or any other meats Za gulu la Nyama monga: ng'ombe, nkhosa, mbuzi, kalulu, mbewa, nkhuku,bakha, nkhunda ndi china chilichonse cha mgulu la nyama	1 = Yes 2 = No 9 = Don't Know					
D37	**EGGS:** from any birds including chicken, guinea fowl, turkey duck or any other birds Maziraockhoka ku: nkhuku, nkhanga, nkhukundembo kapena mbalame ina iri yonse	1 = Yes 2 = No 9 = Don't Know					
D38	**FISH:** Fresh or dried fish, shellfish, or sea Za gulu la nsomba food	1 = Yes 2 = No 9 = Don't Know					
No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
D39	Any foods made from soybeans (Zakudya zochokera ku soya)	1 = Yes 2 = No 9 = Don't Know					
D40	Any foods made from groundnuts (zakudya zochokera ku mtedza/nsawa)	1 = Yes 2 = No 9= Don't know					
D41	Any foods made from other beans, garden peas, cow peas, pigeon peas, **nkhungudzu**, lentils, nuts, or seeds, etc. (Zakudya zochokera ku magulu anyemba)	1 = Yes 2 = No 9= Don't know					

D42	**MILK AND MILK PRODUCTS:** Cheese, yogurt, **chambiko**, or any other milk products (Zakudya zochokera ku mkaka)	1 = Yes 2 = No 9 = Don't Know					
D43	**OILS AND FATS:** Any oil, fats, or butter, red palm oil, avocado or foods made with any of these (Zakudya za mafuta)	1 = Yes 2 = No 9 = Don't Know					
D44	**SWEETS**: sugar, honey, or any sugary foods such as chocolates, sweets, candies, pastries, cakes, or biscuits (Zotsekemera)	1 = Yes 2 = No 9 = Don't Know					

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
D45	**BEVERAGES** coffee, tea, thobwa, mahewu, soft drinks, sweetened soda, freezes, etc. Zakumwa	1 = Yes 2 = No 9 = Don't Know					
D46	**SPICES, CONDIMENTS for flavor:** such as chilies, spices, herbs or fish powder Zokometsera mu ndiwo:	1 = Yes 2 = No 9 = Don't Know					
D47	**INSECTS:** like insect larvae, flying ants, locusts, crickets, grasshoppers or any other edible insects Gulu la ziwala: ngumbi, dzombe, nkhululu, chithuli, kapena ziwala zina zili zones zodyedwa	1 = Yes 2 = No 9 = Don't Know					
	CHECK CATEGORIES 28-47 YANGA'NANI MAFUNSO 28-47	If all 'no' >> go to D48 Ngati zonse ayankha kuti ayi kapena sakudziwa pitani ku D48					

D48	Did [child's name] eat any solid, semi-solid, or soft foods yesterday during the day or at night? Kodi dzulo mwanayu anadyako zakudya zili zonse zamadzimadzi kapena zofewa kupatula mkaka wa mawere? IF 'YES' PROBE: What kind of solid, semi-solid, or soft foods did [child's name] eat? Ndi zakudya ziti zimene anadya dzulo	1 = Yes >> go back to D28–D47 and record foods eaten. Then continue up to D49. 2 = No >> end module 9 = Don't Know >> end module					
D49	How many times did [child's name] eat solid, semi-solid, or soft foods other than liquids yesterday during the day or at night? PROBE: ANY MORE?	98 = Don't Know	☐☐ Times	☐☐ Times	☐☐ Times	☐☐ Times	☐☐ Times

MODULE E: WOMEN'S DIETARY DIVERSITY

Household identification (*in data file, each respondent must be matched with the HH ID*) | | | | | | |

Enumerator Instructions:
Ask these questions of each woman of reproductive age (15-49 years) in the household. Check to see if EACH woman has given consent to be interviewed in INFORMED CONSENT MODULE. If a woman has not yet given consent, return to INFORMED CONSENTMODULE and gain her consent before proceeding. You should carry duplicate copies of this module (MODULE F) in case there are more than 5 women of reproductive age in the household.

No.	Question	Response codes	Woman 1	Woman 2	Woman 3	Woman 4	Woman 5
E01	WOMAN'S ID CODE FROM THE HOUSEHOLD ROSTER						
E02	In what month and year were you born? Kodi amayi munabadwa liti?	IF MONTH IS NOT KNOWN, ENTER '98' IF YEAR IS NOT KNOWN, ENTER '9998'	Month Year	Month Year	Month Year	Month Year	Month Year
E03	Please tell me how old you are. What was your age at your last birthday? RECORD AGE IN COMPLETED YEARS Muli ndi zaka zingati	IF RESPON-DENT CANNOT REMEMBER HOW OLD SHE IS, ENTER '98' AND ASK QUESTION H04. IF RESPONDENT KNOWS HER AGE >> H05	Years	Years	Years	Years	Years
E04	Are you between the ages of 15 and 49 years old? Kodi zaka zanu zili pakati pa 15-49	1 = Yes 2 = No >> end module 9 = Don't know >> end module					
E05	CHECK E02, E03 AND E04 (IF APPLICABLE): IS THE	1 = Yes 2 = No >> end module					

No.	Question	Response codes	Woman 1	Woman 2	Woman 3	Woman 4	Woman 5
	RESPONDENT BETWEEN THE AGES OF 15 AND 49 YEARS? IF THE INFORMATION IN E02, E03, AND E04 CONFLICTS, DETERMINE WHICH IS MOST ACCURATE.						
E06	Are you currently pregnant? Kodi Amayi panopa ndi nu oyembekezera?	1 = Yes 2 = No 9=Don't know					
	Women's dietary diversity day before survey						
	Please describe everything that you ate yesterday during the day or night, whether at home or outside the home. **A)** Think about when you first woke up yesterday. Did you eat anything at that time? IF YES: Please tell me everything you ate at that time. PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE, THEN CONTINUE TO PART B. Amayi mundifotokozere zonse zimene munadya dzulo kuyambira mmawa kutacha mpaka madzulo pamane mukagona? IF NO, CONTINUE TO PART B. **B)** What did you do after that? Did you eat anything at that time? IF YES: Please tell me everything you ate at that time. PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE. REPEAT QUESTION B ABOVE UNTIL RESPONDENT SAYS SHE WENT TO SLEEP UNTIL THE NEXT DAY. IF RESPONDENT MENTIONS MIXED DISHES LIKE A PORRIDGE, SAUCE, OR STEW, PROBE: **C)** What ingredients were in that [mixed dish]? PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE. KUZAKUDYA ZIMENE MUNADYAZI MUTHIRAKO CHIANI? AS THE RESPONDENT RECALLS FOODS, UNDERLINE THE CORRESPONDING FOOD AND ENTER '1' IN THE COLUMN NEXT TO THE FOOD GROUP. IF THE FOOD IS NOT LISTED IN ANY OF THE FOOD GROUPS BELOW, WRITE THE FOOD IN THE BOX LABELED 'OTHER FOODS.' IF FOODS ARE USED IN SMALL AMOUNTS FOR SEASONING OR AS A CONDIMENT, INCLUDE THEM UNDER THE CONDIMENTS FOOD GROUP. ONCE THE RESPONDENT FINISHES RECALLING FOODS EATEN, READ EACH FOOD GROUP WHERE '1' WAS NOT ENTERED, ASK THE FOLLOWING QUESTION AND ENTER '1' IF RESPONDENT SAYS YES, '0' IF NO, AND '9' IF DON'T KNOW. Yesterday during the day or night, did you drink/eat any [food group items]?						

No.	Question	Response codes	Woman 1	Woman 2	Woman 3	Woman 4	Woman 5
	OTHER FOODS: PLEASE WRITE DOWN OTHER FOODS TO THE RIGHT OF THIS BOX THAT RESPONDENT MENTIONED BUT ARE NOT IN THE LIST BELOW. THIS WILL ALLOW THE SURVEY SUPERVISOR OR OTHER KNOWLEDGEABLE INDIVIDUAL TO CLASSIFY THE FOOD LATER.		WRITE FOODS EATEN HERE:	WRITE FOODS EATEN HERE:	WRITE FOODS EATEN HERE:	WRITE FOODS EATEN HERE:	WRITE FOODS EATEN HERE:
E07	**CEREALS**: such as bread, rice, noodles, porridge, nsima, any other foods made from millet, sorghum, maize, rice, wheat or other locally available grains. ZAKUDYA ZOKHUTITSA	1 = Yes 2 = No 9 = Don't Know					
E8	**VITAMIN A RICH VEGETABLES AND TUBERS:** Pumpkin, carrots, squash, orange/yellow fleshed sweet potatoes, or other locally available orange/yellow fleshed vegetables and tubers Zakudya za chikasu kapena zofiira mkati monga maungu, karoti, mbatata za chikasu kapena zofiira mkati	1 = Yes 2 = No 9 = Don't Know					
E9	WHITE TUBERS AND ROOTS: White potatoes, white yams, cassava, or any other foods made from roots and tubers Zakudya zochokera ku zikhawo monga izi: Mbatata, chinangwa kapena	1 = Yes 2 = No 9 = Don't Know					

No.	Question	Response codes	Woman 1	Woman 2	Woman 3	Woman 4	Woman 5
	zakudya zina zilizonse zochokera ku zikhawo						
E10	Any dark green leafy vegetables such as cassava leaves, sweet potato leaves, amaranths, black jack leaves and any other locally available dark green leafy vegetables. Za gulu la masamba obiliwira monga: chigwada, bonongwe, chisoso, kapena masamba ena ali onse obiliwira	1 = Yes 2 = No 9 = Don't Know					
E11	**OTHER VEGETABLES:** such as tomato, onion, eggplant) , including wild vegetables Masamba ena monga: tomato, anyezi, mabilinganya ndi masamba ena opezeka mu tchire.	1 = Yes 2 = No 9 = Don't Know					
E12	**VITAMIN A RICH FRUITS**: Ripe mangoes, ripe papayas Zakudya zokhala ndi vitamin A monga : mango, mpapaya kepana zina zakutchire zokhala ndi vitamin A or other local vitamin A-rich fruits.	1 = Yes 2 = No 9 = Don't Know					
E13	**OTHER FRUITS:** such as citrus, apples, white guavas or any other fruits including wild ones. Zipatso zina monga: mandimu, nachesi, lalanje, guwafa ndi zina zakutchire	1 = Yes 2 = No 9 = Don't Know					

No.	Question	Response codes	Woman 1	Woman 2	Woman 3	Woman 4	Woman 5
E14	**ORGAN MEAT (IRON-RICH):** Liver, kidney, heart, or other organ meats Zamkati monga: Chiwindi,impyso, mtima ndi zina	1 = Yes 2 = No 9 = Don't Know					
E15	**FLESH MEATS:** beef, pork, lamb, goat, rabbit, mice, wild game, chicken, duck, pigeon or other birds or any other meats Nyama monga: ng'ombe, nkhumba, nkhosa, nkhuku, kalulu, mbewa, Nyama yakutchire, bakha, nkhunda kapena Nyama ina iliyonse	1 = Yes 2 = No 9 = Don't Know					
E16	**EGGS:** from any birds including chicken, guinea fowl, turkey duck or any other birds Maziraockhoka ku: nkhuku, nkhanga, nkhukundembo, nkhanga kapena mbalame ina iri yonse	1 = Yes 2 = No 9 = Don't Know					
E17	**FISH:** Fresh or dried fish, shellfish, or seafood Za mgulu la msomba	1 = Yes 2 = No 9 = Don't Know					
E18a	Any foods made from soybeans, (Zakudya zochokera ku soya)	1 = Yes 2 = No 9 = Don't Know					
E18b	Any foods made from, groundnuts (Zakudya zochekera ku mtedza)	1 = Yes 2 = No 9 = Don't Know					

No.	Question	Response codes	Woman 1	Woman 2	Woman 3	Woman 4	Woman 5
E18c	Any foods made from beans, garden peas, cow peas, pigeon peas, nkhungudzu, lentils, nuts, or seeds (Zakudya za magulu a nyeba)	1 = Yes 2 = No 9 = Don't Know					
E19	**MILK AND MILK PRODUCTS:** Cheese, yogurt, chambiko, or any other milk products (Zakudya zochokera ku mkaka)	1 = Yes 2 = No 9 = Don't Know					
E20	**OILS AND FATS:** Any oil, fats, or butter, red palm oil, avocado or foods made with any of these (Za gulu la mafuta)	1 = Yes 2 = No 9 = Don't Know					
E21	**SWEETS**: sugar, honey, sweetened soda or any sugary foods such as chocolates, sweets, candies, pastries, cakes, or biscuits (Za kudya zotsekemera)	1 = Yes 2 = No 9 = Don't Know					
E22	**SPICES and CONDIMENTS** (Zokometsera zakudya): **chillies, spices, herbs etc. ;**	1 = Yes 2 = No 9 = Don't Know					
E23	**BEVERAGES (zakumwa):** coffee, tea, thobwa, mahewu, soft drinks, freezes, etc.	1 = Yes 2 = No 9 = Don't Know					

SECTION F: COMMUNICATION (Drama performances and radio -*applicable only in Lilongwe and Mchinji)* *Pano ndikufusani mafuso okhudzana ndi masewero/ zisudzo zokhudzana ndi ukhondo, kadyedwe koyenera, kuyamwitsa mwakathithi ndi sikelo ya amai.*

F1.Have you ever attended Pakachere drama performances? (K*odi munayamba mwaonerapo zisudzo/masewero za Pakachere?) 1. Yes_____ 2. No_____ If No on both go to F3 if either one go to F2*

?

Drama performances	Response 1=Yes 2=No
Pakachere community drama group	
Pakachere travelling theatre	

F2.If yes to F1 above, what topics do you remember that the drama group performed on? (Please tick all that applies)

?

Topics remembered 1.	*Pakachere community drama group **(1=yes 2=No)***	*Pakachere travelling theatre **(1=yes 2=No)***
Maternal ANC & diet(*kadyedwe ndi sikelo ya amai)* 2.		
Exclusive Breastfeeding(*Kuyamwitsa mwakathithi)*		
Complementary feeding (*Chakudya choonjezera akafka miyezi 6*)		
Water sanitation and hygiene (*ukhondo*)		
Other specify_____		

F3.Have you ever heard a radio message on nutrition? *Kodi munayamba mwavapo uthenga wapa wailesi okhudza kadyedwe koyenera?* /_____/ >> if no go to F7

1. Yes
2. No

F4.If yes in F3 above, what was it? *Unali uthenga otani ?* (Please circle all that applies-Multiple answers possible)

1. Full radio program
2. Jingle/PSA
3. Other specify _____

F5.What topic can you remember that the radio program talked about? *Zinali mfundo ziti za uthenga ngati mungakumbuke?* (Please circle all that applies)

1. Maternal ANC & diet
2. Exclusive Breastfeeding
3. Complementary feeding
4. Water sanitation and hygiene
5. Other (specify)_____

F6.What benefits have the radio programs? *Ndi phindu lanji lomwe mwalipeza kudzera ma pologalamu apa wailesi amenewa?*

_____

_____

_____

_____

F7.What benefits have the drama performances been to you? *Ndi phindu lanji lomwe mwalipeza poonera zisudzo/masewero a Pakachere?*

_____

_____

_____

_____

Remember to record the finishing time!

Thank the respondent for participating in the survey

Annex 2: The Nutrition Outcome Survey Team

Supervisors:

Chiyembekezo Nsanjama	0994447917
Davie Chimwaza	0888854526
Bridget Mwale	0999165749
Mkuwanda Mtimuni	0888598597/0999218435

Data Entry Clerks:

Yamikani Manyetela	0999081292
Miriam Chimimba	0999229034
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Chachomwe Mtimuni	0999298415

Enumerators:

Ambrose Msakwiza	0996230022
Hilda Chinthu	0999464443
Sylvia Matola	0888784282
San Honde	0999621786
Arthur Maliro	0888623293
Lilian Semu	0999612562
Duncan Butao	0999432262
Chimwemwe Mwale	0999691743
Chikhulupiliro Mndalasini	0999 438 809
Lester Kapanda	0888202928
Justus Mlota	0888085293
Harry Utonga	0999285337

Team Leader:	Beatrice Mtimuni
Data Manager:	Maxwell Phiri

Annex 3: Nuttrition Outcome Survey Training Programme Time/Day	22 July Wednesday	23 July Thursday	24July Friday	25 July Friday	24 -27 July Saturday-Monday
0815-0830	Registration, Opening & Introductions Admin & logistical arrangements (Beatrice)	Recap of the first day	Field practical (Maxwell, Beatrice and survey teams	(Field debriefing sharing experiences)	Field logistics - Printing of questionnaires, organizing all materials for field work (INVC, Beatrice)
0815-1000	Expectations, Purpose & agenda training (Maxwell, Beatrice)	Questionnaire discussions with survey teams (Maxwell, Beatrice)	Field practical (Maxwell, Beatrice and survey teams)	(Field debriefing sharing experiences)	Field logistics - Printing of questionnaires, organizing all materials for field work (INVC, Beatrice)
1000-1030	Tea Break				
1030-1230	Questionnaire discussions with survey teams (Maxwell, Beatrice)	Role play by survey teams in turns	Field practical (Maxwell, Beatrice and survey teams)	(Field debriefing sharing experiences	Field logistics - Printing of questionnaires, organizing all materials for field work (INVC, Beatrice)
1230-1330	Lunch				
1330-1500	Questionnaire discussions with survey teams (Maxwell, Beatrice)	Interview techniques (Beatrice)	Field practical (Maxwell, Beatrice and survey teams)	(Field debriefing sharing experiences	Teams leaving for field in Lilongwe, Mchinji Balaka, Machinga and Mangochi on Monday 27 July
1500-1530	Tea Break				
1530-1700	Questionnaire discussions with survey teams (Maxwell, Beatrice)	Field preparation -Logistics for pretesting (Maxwell, Beatrice)	Field practical (Maxwell, Beatrice and survey teams)	Team formation and wrap up for the day	Supervisors meeting with Team Leader and Data Manager

Annex 4: List of EPAs, TAs, GVHs and Villages for Nutrition Outcome Survey 2015 by District

District	EPAs	TAs	GVHs	GVHs	Villages	Villages	Villages
Mchinji	Msitu	Mavwere	Manthalu	Chilopa	Bakiele	Basikolo	Chalimba
			Kaponga	Chamasola	Belo	Bwanunkha	Chamasola
			Mkusa	Silombe	Batinosi	Benedicto	Nsapato
			Abraham	Maliketi	Bezayi	Bile	Bzala
			Basikolo	Mavwere	Changunda	Bokosi	Chaguluka
			Guwende				Abraham
	Mikundi	Nyoka	Mponda	Sepo	Mponda	Sepo	
			Mayola	Sawala	Lubeni	Malikanjero	
			Matutu	Katamanda	Sadoki	Matutu	
			Kangwele		Kapampika		
	Mkanda	Mkanda	Katutula	Mkanda	Leusan	Katutula	
			Matuwamba	Kamphata	Gastoni	Zenasi	
			Kademba	Kaponola	Sawala	Akimu	
					Chimkwapa	Admson	
		Kaponola	Kawere		Kademba	Guwani	Chikuta
			Lipunga		Khoza	Masumba	Chimombo
			Chikuta		Sunama	Chawala	Lipunga
						Kavere	
		Mduwa	Kazira	Mphomwa	Chalama	Mduwa	Chapita
			Mzama	Chikumba	Chatumbwa	Wilson	Mkunjuma
			Sundwe	Mtenje	Chagadama	Milosi	Biwi
			Mchifuwa	Mkunjuma	Chilagule	Chamveka	Pelegia
			Kanyenda	Mphenyengu	Chapondama	Bokosi	Modzi
			Mduwa	Chikoza	Chipuka	Bulikumwendo	Mphenyengu
			Tenje	Chimonjo	Mgando	Menyani	Wombani
			Kalombo	Kalinde	Mofati	Chakuwala	Zuwande
				Mikuwa		Biyuti	Malambuzi
							Zingalume
							Mtolongo
							Pungula
	Kalulu	Kapondo	Chagwirira	Kakunga	Nthende	Dambo	Kupeta
			Mchokwe	Mphanda	Mchokwe	Mwakwiza	Chisimphika
			Nkhwazi	Mkhumbi	Nkhwazi	Kachilika	Chiutu
			Kalulu	Mazenga	Jimu	Chaonongeka	Gumulira
			Chiwaula	Mkhuzi	Chagwirira	Chibwanzi	Chiganizo
			Jussi	Gumulira	Thangaludzu	Beke	Chaluma
			Msukwala	Mwanzalungu	Chiwaula	Chebele	Bikiwe
			Dambo	Mtukwa	Jussi		Chinkono
			Mlonyeni		Bonthe		Chigangawa
					Mazengera		Chimteteka
	Chiopsya	Simphasi	Mando	Langwani	Mandala	Chikoza	
			Kamangilira	Mapemba	Kamangilira	Lucio	
			Chikomeni	Mbuzi	Ligeliyo	Langwani	
			Matimba	Kanyimbo		Chidewa	
						Kachere	
		Zulu	Kamphande	Chinkhota	Chipozi	Mseche	Ngawande
			Chiferamthengo	Mkangala	Mbuzi	Benjamin	Chikhuti
			Mseche	Mumba	Chinsapo	Kantanda	Mchifuwa
			Benjamin	Kathyuka	Chisemphere	Kapalira	Mkangala
			Kapanira	Chimteka	Kamphande	Chintanda	Mumba
				Kayendekera	Chiferamthengo	Zidana	Mauadzinja
						Chikoloka	Kadula
						Mchidzanja	Kaligwenje
						Mtiwa	Gunde
						Matiwelo	Bokosi
						Suwerera	Masepa
Lilongwe	Kalolo	Kalolo	Mchepera		Msokoneza		Nakutepa
	Chileka	Malili	Mphandula		Kaphesi		Mwera
		Masumbankhunda	Njande		Mnjemu		Bweya
	Mpingu	Malika	Nsangwa	Chimbayo	Nsangwa	Mtondera	Kachule

			Nkantho	Kachule	Mafupa	Chimangansasa	Mbeta
	Ukwe		Liwinga	Mwera	Liwinga	Nkhwila	Chimwendo
			Mkanda	Chimwendo	Kachete	Msenda	Mdaliponda
			Chitedze	Mwanza	Msanu	Katona	
		Mchepera	Masakamika	Chiliza	Zalera	Kumale	
		Njerwa	Chimlenya	Kakungu	Chakwaira	Mnjolo	Nene
			Kanong'ona	Chisuzi	Chitipi	Muyanga	Chinthungo
			Buluzi	Kalolo	Kanyama	Chipampha	Kakunju
			Maziro	Guliguli	Kapasula	Mtambalika	Chisuzi
			Zapita	Chimwanza	Mphimbi	Chiliza	Kalolo
			Mtongolo	Chakuzamutu	Philimoni	Chikusa	Kaseza
			Chileka	Mtika	Kankhumbwa	Msakwi	Mseru
			Dzama	Ndevu	Tumbi	Dzama	Chaola
			Mchepera		Chakakala	Maliseni	Kaziputa
			Nene			Chimpukwa	Msisamala
					Ching'ang'a		
	Ngwangwa	Kabudula	Chimbayo	Kalumba	Chimwendo	Kanyemba	
	Chigonthi	M'bang'ombe	Chinyama	Chigonthi 1	Mazi	Malango	Chipwaira
			Kalumba	Chakwanira	Mphimbi	Chinkhwinitumbi	Makoza
			Mtambo	Lombwa	Chipembere	Zanje	Besela
			Mphimbi	Zindo	Kaimbe	Kaluma	Chigonthi
			Chombwa	Mkambwe	Elisale	Kanike	Nkhosa
			Mtambo	Fulatila	Kaluwenya	Malonda	Ndelema
			Chilombo	Mgawachamba	Chapamba	Nyama	Lombwa
			Chidooka	Mkuzi	Mpombodzeke	Mpempha	Kandiwo
			Chidzuma	Mkhwanire	Nowa	Chirombo	Pawulo
			Kazembe	Chipwaira	Chimutu	Maloto	Mkambwe
			Makoza		Kazembe	Mkwiwale	Mtolabuku
			Kamsanga			Mkwanila	Ngawachamba
						Mtengambiri	Mkuzi
	Chiwamba	Chimutu	Msuzumire	Kumayanichezezeta	Msuzumire	Velemu	
		Chitukula	Kwindanguwo	Chitukula	Jumpha	Chang'ombe 2	
	Chitukula	Mtema	Chikanda		Sengani		
			Kamlembo		Mthindi		
	M'bang'ombe		Suntche	Chimpando	Msindiza	Chilunga	Fulatira
			Fulatira	Chapata	Mwitha	Mahekamwina	Chigamba
			Chigonthi	Padzuwa	Khanyinji	Kamlembo	Kosamu
			Nkhalamba	Kafulatira	Chimutu	Suntche	Mkalamba
			Kholongo	Chimutu	Kadololo	Mchokwe	Dongolosi
			Kalambika	Masula	Chibade	Jede	Kwindaguwo
				Lapalama	Makhenjera	Nemeri	Kalambika
						Chakuma	Masula
						Guliguli	Mmodziutani
	Nyanja	Kalumbu	Njati		Mambala		
		Mazengela	Mwachilolo	Mkomba	Salimakuwala	Chikhombe	Yotamu
			Kalumbu	Matapila	Msemwe	Mtileni	Chalera
			Ngwena	Kaphala	Kacholo 2	Gaiti	Chilala
			Bango	Dzunda	Kalambule	Msavechete	Kanjunda
			Mphenzi	Msiko	Msonthi	Mkomba	Katanda
			Undi	Nyama	Ngwena	Mvuwa	Thondolo
			Kapedzera	Mdzeka	Sikadzi	Mnzingwa	Kumitumbu
			Kaphata	Kazizila	Undi	Kapoloaipa	Mpani
			Chikhombe	Nsaku	Mkanda	Mphambanya	Guwende
			Chikanda	Nkhudzi	Kafotsela	Nkhuni	Chilembwe
			Thondolo	Nkhwidzi	Malenga	Selengo	Mepundi
			Chauwa	Biwi	Nyamasankha	Kathumba	Nduwakunsi
			Khuzi	Njiwa	Mwachilolo	Dzimba	Chimphama
				Mzeka	Nthambala	Nkhwazi	Chimphwanya
	Mpenu					Nyengere	Mkhwidzi
						Mbiya	Chowe
						Kasuntha	Mzongo
						Chengamire	John
						Kamwana	Mdeka
							Nyanyu

	Thawale		Kalonanji	Disembala	Kamzimbiwoyera	Disembala	
			Chaphuka		Kabowa		
		Masula	Mtungwi	Chithonje	Yesani	Tsirizani	Mkuntha
			Ndelemani	Chazondoka	Yeliyasi	Ntanga	Kamphango
			Kamsitu	Chisauka	Ndiyani	Chinzere	Tondombi
			Mchila	Kukhola	Mchila	Tikumane	Kalonga
			Kalonanji				
	Chitsime	Kalumba	Mphindo	Ng'ozo	Tandaila	Kumadzi	
			Mbano	Buluzi	Kanyenda	Ngala	
			Kalumba	Mminga	Gulule	Katosa	
			Mbuna	Kanyonikunsi	Kalumba	Chapata	
			Vuvulo	Zuluwanda	Vuvulo	Mtembenuza	
				Kuchiswe	Ng'ozo	Chitukula	
	Mlomba	Chadza	Mbalame	Kazonga	Mbalame	Mchotsa	Phambo
			Phula	Mthiko	Ng'ombe	Msodoka	Nakutumba
			Kalongosola	Chinthankhwa	Mcholo	Msiwa	Mphete
			Chinziri	Mdondwe	Chikomba	Chiwala	Jamu
			Mphete	Chingira	Matumbo	Maso Afiira	
			Chipwa				
		Tsabango			Mdondwe		
					Chansata		
					Ngomazondo		
					Chingira		
		Chiseka	Mwinimudzi	Chiphwanya	Chisanthi	Mazengera	Chauma
		Chitekwere	Chitekwere		Kamcheneeru		
		Kachere	Ng'ombeyagwada		Kapichira		
		Chilikumwendo	Kankodola	Chimphangu	Katukusa	Kanjerwa	Bango
			Khomela	Chamangwana	Kamtadza	Chinkhombe	Chidothi
					Tambala	Mwamphanda	Kanyezi
							Chimphangu
Balaka	Mpilisi	Nsamala	Nsamala	Kwitanda	Chinseu	Binesi	
	Ulongwe	Kalembo	Msulu	Mbawa	Chibwana	Kwitanda	
	Rivirivi	Chiyendausiku	Maninji	Lupanga	Kazondo	Gunda	Chiyendausiku
			Mkamwana	Chimdikiti	Piasi	Mbawa	Kapakunja
			Chikolongo	Kalembo	Mkanda	Chasinda	Kalilombe
			Chiyendausiku	Mwembe	Msulu	Chigwalugwalu	Million
				Simbota	Chikolongo	Mbawa	Mmangeni
					Magombe	Jalawe	Thaidoni
					Edwin	Masulamanja	Saiwa
					Chmdikiti	Simbota	Lakalaka
					Jenga	Joba	Lupanga
	Phalula	Chanthunya	Chanthunya	Maitoni	Chikwakwa	Ngoleka	Chingagwe
			Chimphakati	Manjanja	Mgozo	Masenjele	Chima
			John mapira	Chingagwe	Nkhumbira	Joe Linzi	Chitsulo
			Kavala	Bamusi	Manyombe	Mlunguzi	Didiya
			Nyanyala	Chandikora	Mbonani	Nsakanena	Manjanja
			Zimveka	Boaz	Mphenzi	Thindiri	Kapuku
			Madyeratu	Mthengomwacha	Kambodya	Tsanyawoyera	Kamkawo
					Kasyeto	Kachomba	Chizunguchino
					Kavala 1	Chendewa	Mkwezalamba
					Ngayaye	Chikondi	Kasamiza
					Mulunguzi	Kachingwe	Chandikora
					Chikamera	Mthengomwacha	Boaz
					Chimphonda	Chikamphonya	
	Utale	Nkaya	Semani	Mgomwa	Kamwendo	Semani	Kanyenga
			Kantwanje	Chambaluka	Chalamanda	Chilimba	Namgunda
			Maganga	Sato	Kantwanje	Jonasi	Jiya
			Dodoma	Ntaja	Misomali	Chingere	Chisoni
			Utale	Mkaya	Magombo	Phimbi	Chikapusa
			Phimbi	Kamowatimwa	Sakazao	Mbewe	Kamvazaana
			Muluma	Khwalala	Kadamo	Chidonthi	Mgomwa
					Njirayagoma	Kamowatimwa	Chambaluka
					Chibwana	Chambo	Chadzuma
					Ndimbule	Chilima	Bemeyani

					Mofolo	Kamdamanja	Muluma
					Jankeni	Kwalala	Nyalungwe
					Ntaja	Ngalaweza	Katuli
	Domasi	Mposa	Puteya		Thalama		
			Chipire		Pwetete		
	Mtubwi	Sitola	Mtamira	Zidyana	Mkomera	Taibu	Mkwanda
			Mlonya	Njerenje	Mtalika	Mlamila	Sitola
			Kalonjere	Zalimu	Chisese	Kumbani	Ali
			Sitola	Joshua	Imani	Zidyana	Mataya
			Magadi	Namitambo	Mwakwiwa	Chimpakati	Katunga
					Makangwala	Ganiwelo	Chingawa
					Bwanali	Jambawe	Chimtali
					Sulupi	Ajida	Ndawa
					Mlekano	Joshua	Kalonjere
					Puteya	Ntondekera	Makulisya
					Mamu	Labisoni	Chipamba
					Kasitomu	Wotala	Chilonga
					Chalema		Chilimani
	Mbonechera	Liwonde	Njahitu	Muluma	Chiwonda	Nsele	
		Nsanama	Chabwera	Napwanga	Kanyoza	Mpuhuwa	
			Makhoza		Makina		
	Nyambi	Chiwalo	Chitinji		Makhoza	Waiti	Phungu
			Sale		Imani	Tiferakaso	Mtila
					Makwinja	Mussa	Belo
					Bamusi	Kuseto	Chimwaza
					Mose	Tambula	Magwede
					Kumtundu	Nsigala	
					Dija	Mkopa	
		Mlomba	Lambulira	Likwakwa	Namveta	Likwakwa	
	Nsanama		Pulika	Lanje	Pulika	Mbwezo	
			Mbwezo	Bakali	Kasimanja	Asamu	
			Ntali	Mota	Kwakwanya	Mangolo	
		Nyambi	Mapata		Beyadi		
		Kapoloma	Chikumba		Landa		
	Nanyumbu	Kawinga	Kawinga	Chimbira	Bakali	Mahowa	Chimbira
			Balala	Mbwambwa	Namwewe	Mwamunthu	Mbwambwa
			Makhoyo	Nawanga	Chipole	Choga	Chikuta
			Mkwepere	Mkapa	Muharu	Chikumba	Muchirani
			Namanjonjoli	Njete	Lupiya	Kagwili	Abudu
				Mikonde	Kaliyala	Lodesi	Chilipa
					Makhoyo	Chipala	Njete
					Mailosi	Mapata	Mkonde
					Dam	Hilama	Chioza
					Jali	Chapola	
	Chikweo	Chikweo	Nyama	Welawela	Nyama	Welawela	
			Lulanga	Mikundi	Wanja	Gilini	
			Ngomano	Kambwiri	Saomba	Mikundi	
			Kalapwisa	Maonga	Kalapwisa	Maonga	
		Ngokwe	Khunga	Mkwinda	Witikani	Nachimbwe	Chimala
			Pohelya	Chimombo	Khunga	Matola	Sawanje
			Dinji	Chimala	Ajasi	Chimombo	Kwawira
			Likapa	Sawanje	Masamba	Mkwinda	
			Mwikuwa		Pakaka	Ndala	
Machinga		Mkoola	Kakwamba	Muheliwa	Kakwamba	Khapu	Mulura
			Mowere	Mgomba	Miso	Makumba	Lahuma
			Chisumbi	Mlinde	Nthato	Jonasi	Waliwa
			Issa	Mdala	Nambala	Msasa	Chimanga
			Mbungo	Maweha	Puluma	Simpwa	Likiya
			Lokho	Mawacha	Singani	Chisuse	Nolola
			Chisawa	Kwilasha	Nsinjiri	Kaumbi	Mangulu
			Nambala	Mpita	Chisumbi	Macheso	Mbirima
			Chisuwi	Pongolani	Lokho	Nantoso	Saidi
			Mtepo	Mulura	Chisawa	Lapukeni	Pangaunye
			Mwakhumbwa	Makawa	Nsolomba	Mlinde	Kwilasha

			Chisuse	Chimanga	Dalamponda	Siyani	Mpita, Juma
			Msasa	Mangulu	Mtepo	Muheliwa	Pongolani
			Macheso	Mwanayekha	Muhele	Mdala	Mwanayekha
Mangochi	Nasenga	Mponda	Chisambanopa	Mapata	Chisambanopa	Bonomali	
				Kalino	Sigele		
	Mthirammanja		Chimbende		Chawa		
	Namkumba		Ntalika		Chimbende		
	Lungwenya		Mzimbire		Mkwatula		
	Masuku	Bwananyambi	Tambala	Shwaibu	Msosa	Mpinga	Mvero
			Mpinga	Mponda	Mbande 1	Mlinde	Kambona
			Mlinde	Lumeta	Mzimbire	Rabson	Lumeta
			Dinesi	Mjathu	Salimu	Dinala	Mjathu
				Chinama	Kachala	Songolo	Mponda
					Misanjo	Mliule trust	Chinama
						Yohane	Shwaibu
	Katuli	Katuli	Kalanje	Mtundu	Kalanje	Limamu	Makanjira
			Katembo	Kaipa	Katembo	Naipwi	Ngalipa
			Salimu	Makande	Salimu	Mtundu	Kwitinji
			Mpitu	Makanjira	Magwede	Kaipa	Ngolonjele
			Mtelela	Ngalipa	Mtelela	Nakapa	Makunganya
			Kwilindi	Kwitinji	Bulaimu	Issa	Namalesawo
			Limamu	Ngolonjele	Kwizimbangwe	Chilimba	
			Naipwi	Luwalika	Kasa	Makande	
	Maiwa	Chowe	Mtuwa	Kadewere	Bulaimu	Matenganya	
			Chipeleka	Kalonga	Chipeleka	Kawinga	
			Masi	Nalikolo	Malemia	Mdala makumba	
			Malikula	Nkulumba	Nsamala	Mkata	
			Makumba	Mdala	Batani	Kadewere	
			Moto		Malikula		
			Mkata		Madi		
	CAhilipa	Chilipa	Leveni	Masapi	Majawa	Nkalika	Makalakala
			Matenje	Nikisi	Ali Mdala	Leveni	Bamusi
			Kalino	Belo	Kwisimba	Chilipa	Masapi
			Kapire	Nkaweya	Kalonga	White	Nikisi
			Bamusi	Mtonda	Itimu	Kalino	Belo
				Chapola	Nkulumba	Kapire	Kaweya
						Katoleza	Chimwaza
		Namavi	Mkata		Chapola		
		Jalasi	Mdoka		Macheka		
			Mwanjati		Chilonga		
	Mtiya	Mtonda	Namwera	Kandulu	Mwanjati	Mdoka 2	
		Chimwala	Nsomba	Ngatola	Namwera	Chiumba	Khwasu
			Mbalame	Songa	Awadi	Maliro	Wisiki
			Mtonda	Mtendere	Makumba	Nsomba	Mtendere
			Nthangalanjovu	Chimwala	Matemba	Malopa	Mpalume
			Kusewa	Khwasu	Mbalame	Thangalanjovu	Songa
					Bakili	Chisawa	Lusewa
						Mawilinga	Ngwati
						Stambuli	Salawi
						Mphwanya	Ngwati
	Namkumba	Namkumba	Namkumba	Chilonga	Zita	Malopa 2	Kamangazuka
			Chimphepo	Malopa	Mbapi	Ziyadi	Chinawa
			Khombe	Binali	Makundika	Makunje	Kella
			Chogomere	Matope	Chamtulo	Chilonga	Kaizi
			Katole	Balakasi	Manzi	Idana	Makokola
			Kanyemba	Sosola	Chigomere	Kanyama	Makupe
			Nselema	Kela	Matapang'ombe	Bubakali	Mtiule
			Songa	Saidimatola	Abdul	Sokole	Namkumba
			Sokole	Mbzodzo	Simoni, Nselama	Binali	