



BASELINE REPORT

HOME GROWN SCHOOL FEEDING MAIZE MEAL FORTIFICATION PROGRAMME



October 2013

Acknowledgement

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ACRONYMS

MoESVTEE MOE	Ministry of Education, Science, Vocation Training and Early Education
DEBS	District Education Board Secretary
GAIN	Global Alliance for Improved Nutrition
IEC	Information, Education and Communication
MoH	Ministry of Health
NFNC	National Food and Nutrition Commission
SPSS	Statistical Package for the Social Sciences
HEPS	High Energy Protein Supplement

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EXECUTIVE SUMMARY

This baseline survey was conducted in October 2013 prior to the commencement of the maize meal fortified school feeding. The purpose of the project is to assess the relationships associated with school attendance, nutrition wellbeing, and health status of learners under the Home Grown School Feeding Programme (HGSFP). This survey was conducted in 16 districts across the 22 districts implementing the HGSFP national wide. It was cross sectional in nature which employed both quantitative and qualitative methods of data collection. A two-stage cluster sampling approach with schools as smallest administrative units was utilized. The quantitative component involved interviews with pupils between grades 6 and 9 using a questionnaire with closed and open ended questions. The qualitative component was used to triangulate quantitative results to broaden the understanding of fortification in the districts.

The survey results show that of all learners surveyed (N=322), 53 percent were boys while 47 percent were girls. In addition, the survey reveals that 4.0 percent of learners had only one meal in a day over the survey reference period. Problems related to food intake and child health especially nutritional problems have been identified as widespread and important concerns for public health in Zambia. This survey focused on the dietary patterns of school children in the rural areas. The results provide some useful insights to guide those interested in promoting healthy eating behavior among school children.

The survey also showed that, a general view of school meals was important in enhancing regularly attendance of learners in school. The survey indicates that school meals help improve school attendance and reduce absenteeism in schools. This was stated to be very helpful especially to children that come from poor families. In some districts, it was reported that school feeding had reduced the number of learners that used to cross over to other countries to look for piecework for food. Others also indicated that level of concentration among learners increased in school.

In general there was inadequate understanding of the meaning and purpose of Home Grown School Feeding and Maize meal fortification. The results of this survey can therefore be used to refine the school feeding programme in terms of design and targeting.

NATIONAL FOOD AND NUTRITION COMMISSION

1.0 INTRODUCTION

In June 2013, the Ministry of Education Science Vocational Training Early Education (MoSVTEE), the National Food and Nutrition Commission (NFNC) and the World Food Programme (WFP) jointly submitted a proposal to the Global Alliance for Improved Nutrition (GAIN) on the use of fortified maize flour in the Home Grown School Feeding Programme (HGSFP) food basket in Zambia. The proposal aimed to provide fortified maize meal to learners in selected schools. The objective of the project was to see how school feeding, using fortified maize meal, in addition to the provision of nutrition would impact on school retention while increasing the knowledge and awareness in school communities on fortification. The proposal was approved by GAIN who provided budgetary support for the programme for a period of 12 months. The interventions targeted 4 districts namely Mkushi, Mumbwa, Masaiti and Siavonga which receive maize meal under the HGSFP. The support from GAIN included procurement of the maize flour Premix, district trainings, monitoring and evaluation. One key component of the pilot project was to conduct a baseline study prior in the project areas. The baseline survey was conducted in order to understand the district and community views on maize meal fortification in the HGSFP as well as assess the community concerns associated with consumption of fortified maize meal in the 4 districts. The information was used to refine the present project and other future fortification related projects. The survey was conducted in October 2013

1.1 General Objectives

The overall objective of the baseline survey was to collect baseline data on food intake, school attendance, and knowledge on fortification prior to commencement of the maize meal fortification for the school feeding in order to assess its relationship with school attendance, nutrition, and health status of learners.

1.2 Specific Objectives

The specific objectives of the baseline were to:

- 1) Establish the school attendance among school children from grades 1- 9
- 2) Determine absenteeism levels among children from grade 1-9 due to sickness
- 3) Assess dietary diversity among children in grade 6-9
- 4) Determine existing community concerns associated with consumption of fortified maize meal.
- 5) Assess Knowledge, Attitudes and Practices (KAP) associated with Vitamin A, iron and anaemia
- 6) Assess nutrition education services available for Vitamin A, iron, and anaemia

METHODOLOGY

2.1 Study Design

This survey was cross sectional in nature with a two-stage cluster sampling approach with sample size proportional to size. The school being considered as smallest administrative units (clusters). Considering that household-based surveys are expensive, this survey was undertaken in schools with an addition of community focus groups. An updated list of all schools across the 22 districts implementing the HGSFP was used as the sampling universe. Thus both quantitative and qualitative methods of data collection were used. The quantitative component involved interviews with pupils between grades 6 and 9 using a semi structured questionnaire that had both closed and open ended questions. The qualitative component used a structured checklist and was used to triangulate quantitative results to broaden the understanding of fortification in the districts. The participants of focus group discussions included the community leaders, staff at district and sub-district level from the key line Ministry departments namely: Health, Community Development Mother and Child Health, Education and Agriculture and Livestock.

2.2 Survey coverage

The survey was conducted in 16 districts across the 22 districts implementing the Home Grown School Feeding Programme national wide.

2.3 Survey population

The survey population included school going children aged between 7 to 15 years and attending school from grades 6 to 9 in all the selected schools. In addition, information was collected through Focus Group Discussions (FGDs) from community leaders, district multi-stakeholder groups involving key Government line Ministry departments namely; Health, Education, Community Development Mother and Child Health and the NGOs

2.4 Sampling size determination

The required sample size was calculated according to the formula below:

$$n = t^2 * \frac{(pXq)}{d^2} * DEFF$$

Where: n=Sample

t = Linked to 95 % confidence interval for cluster sampling=2.0450

p = Expected prevalence (fraction of 1) =0.5

q =1-p (Expected non-prevalence) =0.5

d =relative desired precision=0.1

DEFF =Design effect=2

From the above procedure, the sample size for the quantitative data was 209. However; the study included 210 school children. In each selected school 7 pupils were included in the survey. A total of 30 clusters were included in the study

2.5 Sampling selection

2.5.1 Cluster selection

A school in each district was considered as a cluster. Clusters were selected using probability proportionate to size (PPS). All schools in the district along with their respective populations were entered into ENA software; the software calculated the number of clusters to be included in the study.

2.5.2 Children selection

In the selected schools all children between grades 6 to 9 were purposively included in the Survey.

2.6 Data Collection Tools

The data collection tools include a semi structured learners questionnaire (**Annex 1**) and a focus group discussion checklist (**Annex 2**). In order to understand attendance and absenteeism among school children, attendance registers were reviewed using a standardized matrix from all the sampled schools. Dietary intake of school children, covering a period of 7 days prior to the survey was assessed using a food frequency table. A checklist was used during Focus group discussions to assess knowledge, attitudes, practices and concerns of district multi-sector teams as well as community members on maize meal fortification.

2.7 Organization of the Survey

2.7.1 Meeting with the District Authorities

The study teams paid a courtesy call to the District Education Boards (DEBS) and briefed them on the background, purpose, objectives and methods for the study. The DEBS officially informed the schools where the assessment took place.

2.7.2 Enumerator Recruitment and Training

The NFNC led the survey by recruiting enumerators and supervised trainings of enumerators. Prior to data collection, one day training was conducted for the enumerators and team leaders on data collection, study procedures and interview techniques. Four teams of three people in each team, one team leader and two data collectors were constituted from the central level.

2.7.3 Team work in the field

The team leaders were responsible for the overall quality of activities and team performance. Additionally, supervisors from NFNC were closely supervising the teams throughout the survey.

2.8. Data Quality

Questionnaires and data sheets were checked prior to data entry by the team leaders. Data entry and analysis was done using CSpro

2.9 Time frame

The baseline data collection exercise was undertaken over a period of ten (10) days in October inclusive 2-days training of the district staff involved in data collection).

RESULTS

3.1 Distribution of survey participants

The survey show that N=322 learners participated in the survey. This included n=171 (53 percent) boys and n=151 (47 percent) girls. Sixteen districts were included in the survey (Annex 3)

3.2 Age distribution

Majority of the learners 79 percent (n=254) were aged between 13 and 18 years of age; 17 percent (n=54) were under 12 years of age while 4 percent (n=13) were above 18 years of age.

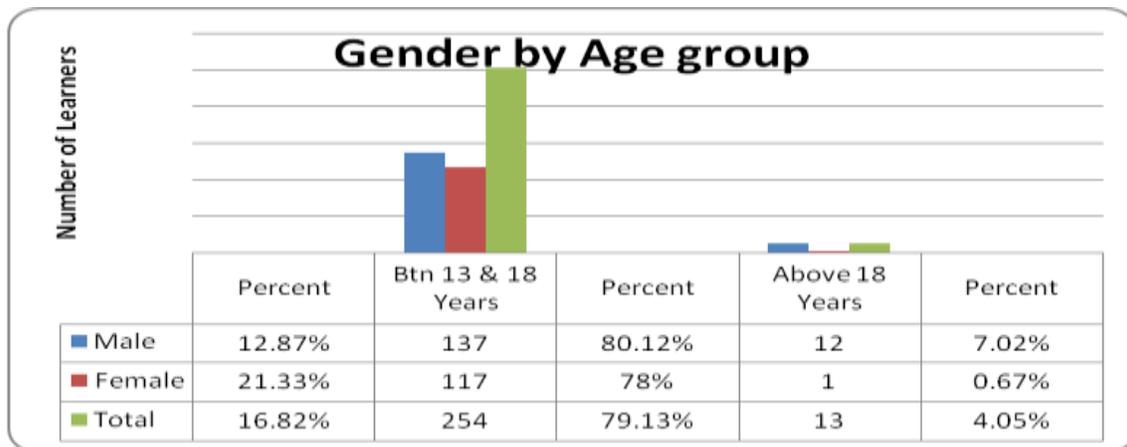
3.3 Grade attended by learner

The survey shows that 57 percent (n=184) of learners attended grade six, 22 percent (n=71) of the learners attended grade eight while 21 percent (n=67) of learners attended grade nine.

3.4 Distribution of learners by age group and sex

The survey has shown that the numbers of boys and girls participating in the survey were almost equally distributed. **Figure 1** below however shows the distribution of survey participants by both age group and sex.

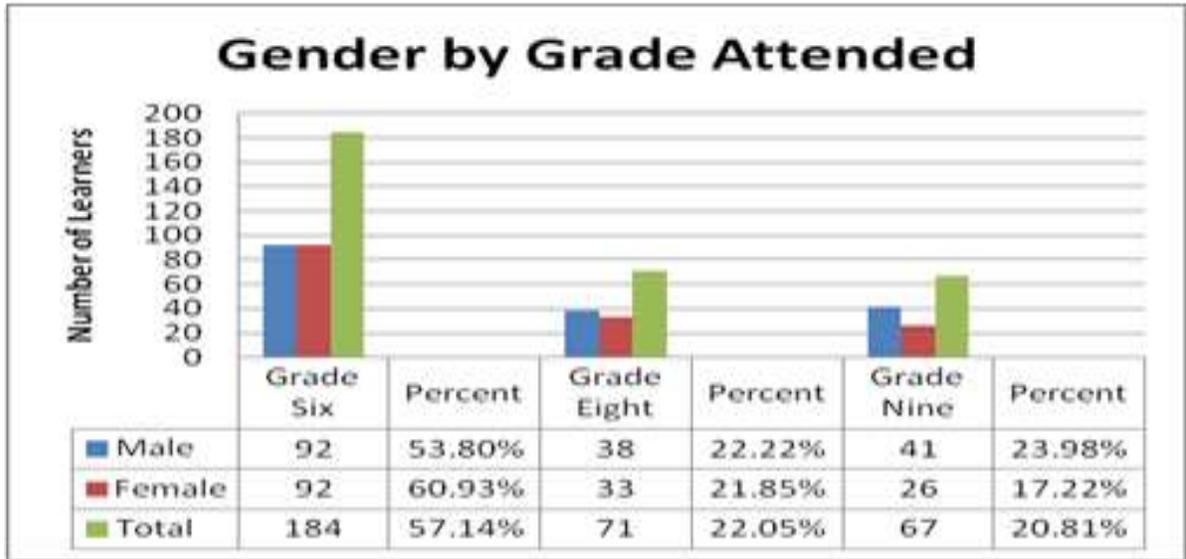
Figure 1: Distribution of learners



3.5 Learners level of class attendance

The majority of learners surveyed attended primary level grade six. **Figure 2** below shows the distribution of children attending school by sex and grade.

Figure 2: Gender by Grade Attended



3.6 Food intake

3.6.1 Main meal intake

Majority of learners (n=154) consumed two main meals in day. Those consuming one main meal in a day (n=12) were very few. **Figure 3** below, shows the distribution of learners indicating how many times they consumed a main meal. Overall, more boys than girls were found in each category, **Figure 4**

Figure 3: Intake of main meals

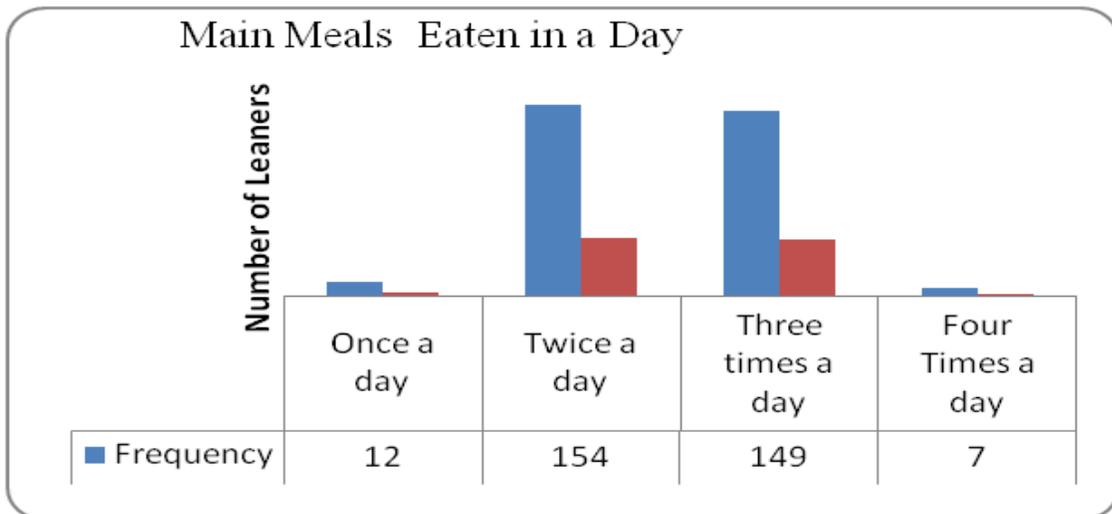
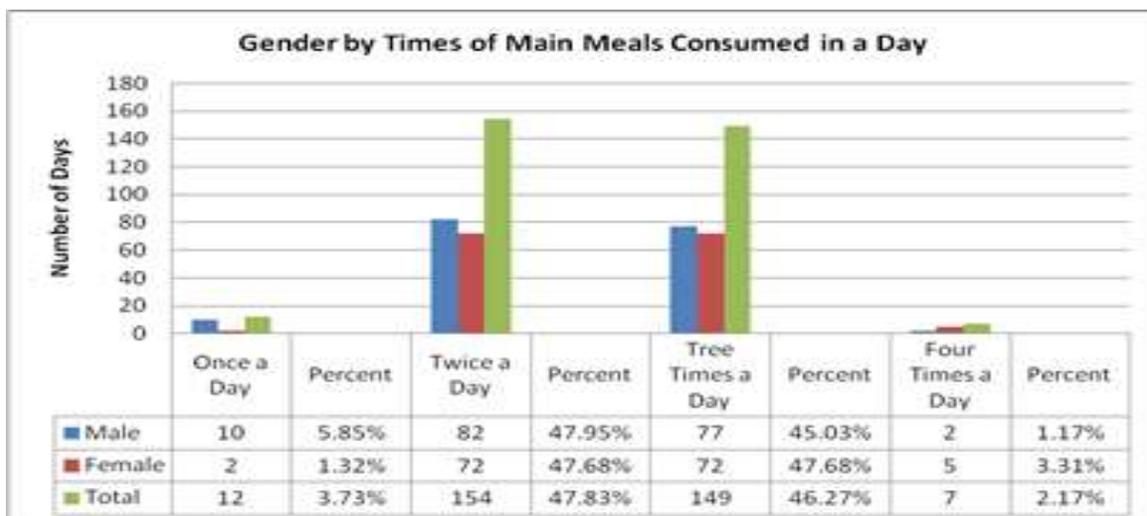


Figure 4: Distribution of consumption of main meals by sex



3.6.2 Dietary diversity

The food groups presented in **Table 1** were used to evaluate the quality of meals consumed by children.

Table 1: Key food groups consumed by children

No.	Food Items	Food Group
1.	Maize, Cassava, Millet, Sweet potatoes etc.	Staple
2.	Beans, Groundnuts, cowpea etc.	Legumes and nuts
3.	milk, yogurt, cheese	Dairy products
4.	Meat, fish, chicken and liver/organ meats	Flesh foods
5.	Eggs	Poultry
6.	Mango, pawpaw, carrots, oranges,	Vitamin-A rich fruits and vegetables
7.	Wild fruits, etc.	Other fruits and vegetables

3.6.3 Pupils' daily meal intake

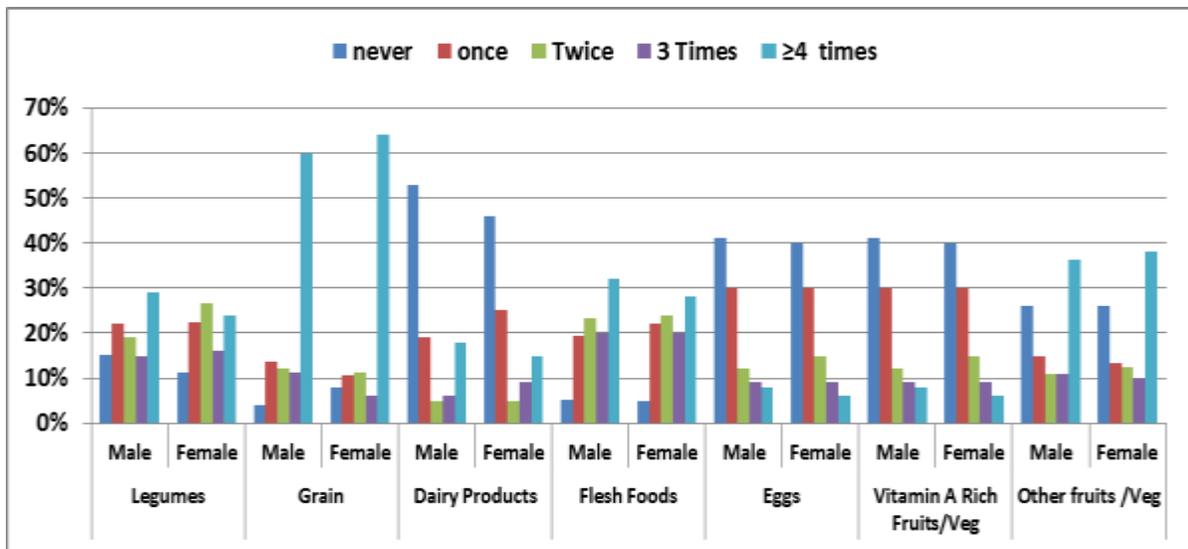
The results presented in **Table 2** show the distribution of learners consuming from various foods groups. The percent distribution of those consuming grain, roots and tubers and fruits and vegetables equal or more than four times was higher.

Table 2: Distribution of pupils' dietary patterns

Food Group	Number of Days Consumed Per Week											
	Never		Once		Twice		3 Times		≥4 times		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Grain, Roots & Tubers	19	6	39	12	37	12	28	9	199	62	322	100
Legumes & Nuts	44	13	71	22	72	22	49	15	86	27	322	100
Dairy Products	160	50	49	21	16	5	24	8	53	17	322	100
Flesh Foods	18	6	66	21	76	24	65	20	97	30	322	100
Eggs	131	41	97	30	43	13	28	9	23	7	322	100
Vitamin A Rich	60	19	55	17	42	13	26	9	138	43	322	100
Other fruits & Vegetables	84	26	46	14	38	12	34	11	120	37	322	100

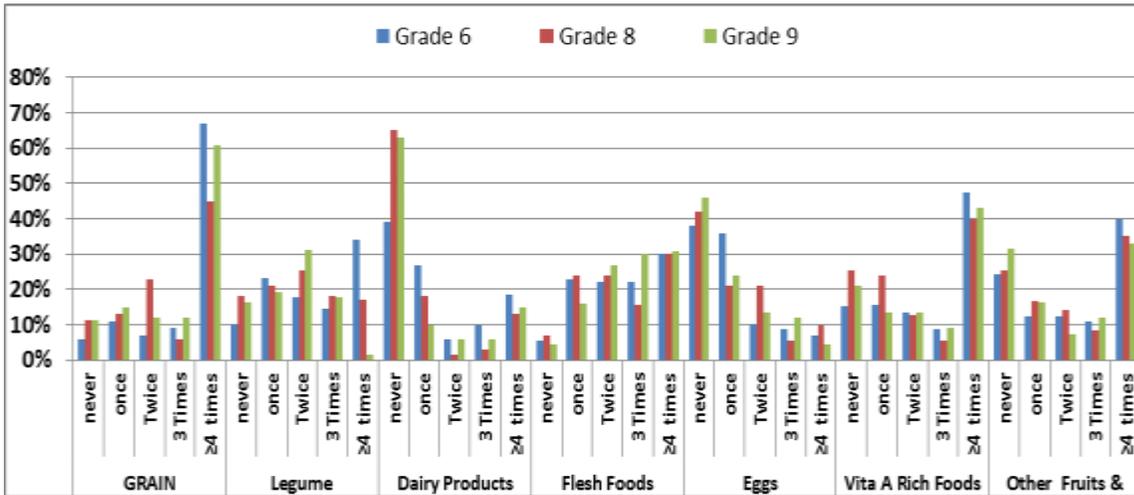
Both boys and girls were observed to have a low diverse diet with only 30% of the sampled pupils having had vitamin A rich fruits and vegetables at least once in the previous week prior to the survey (Figure 5).

Figure 5: Distribution of pupils' dietary patterns



Consumption of vitamin A rich foods and other fruits and vegetables was generally poor across the selected grades that participated in the survey. Less than half reported having eaten fruits and vegetables and/or other fruits and vegetables. However, 47% of grade 6 pupils consumed vitamin A rich foods compared to the other grades. Figure 6 below shows the distribution of dietary diversity frequency by grade.

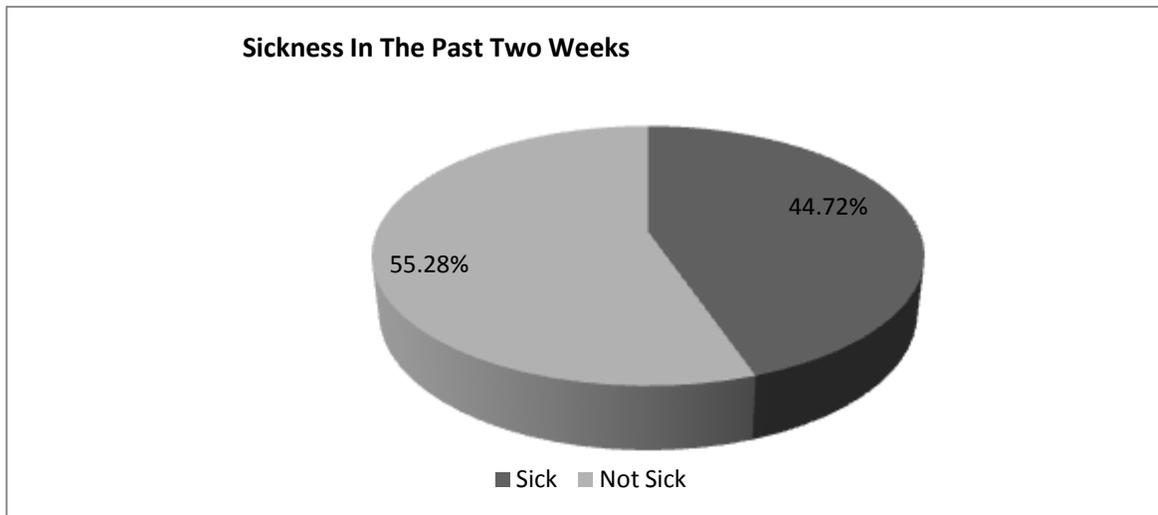
Figure 6: Distribution of dietary diversity frequency by grade.



3.7 Health Status

About 45 percent (n=144) of the learners reported having been sick two weeks before the survey (**Figure 7**). The major illnesses suffered by learners are indicated in (**Figure 8**). Diarrhea and fever were the main illnesses suffered by learners.

Figure 7: Learners indicating having suffered an illness in past two weeks



The results also show that of those who suffered illnesses 60 percent missed classes

Figure 8: Distribution of type of illness suffered by learners

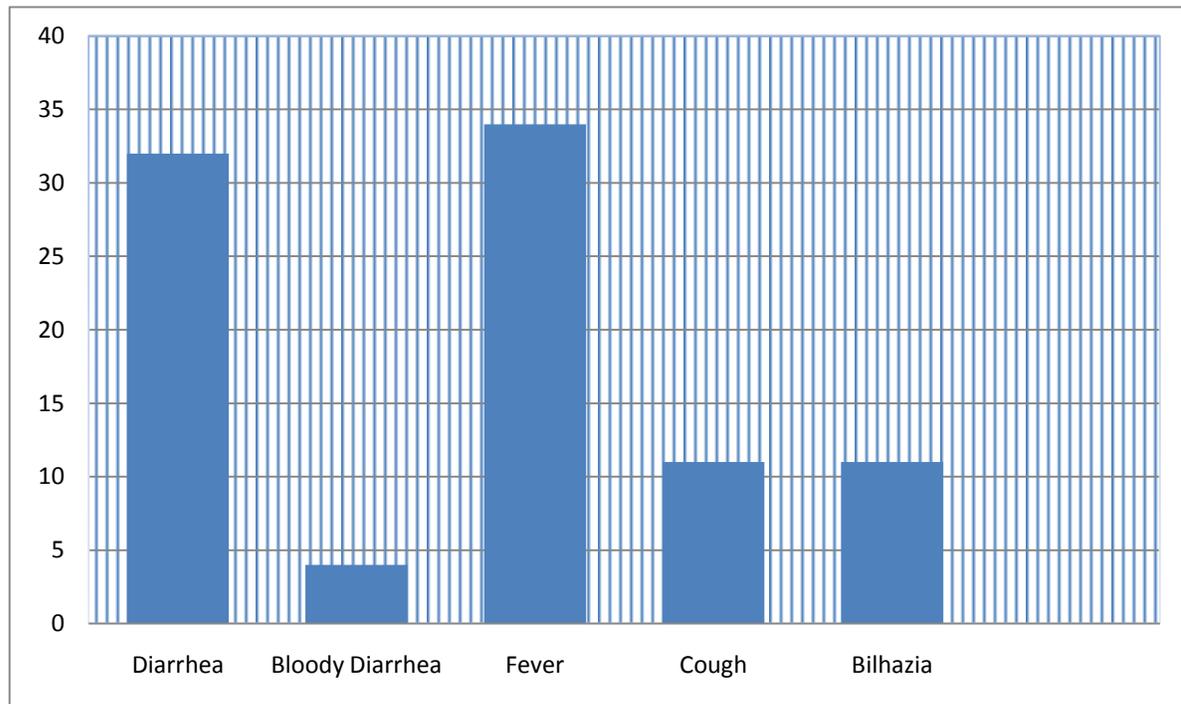


Table 3: Distribution of children missing class as a result of illness

Missed classes	Number	Percentage
Yes	86	59.72
No	58	40.28
Total	144	100

3.7.1 Treatment seeking

The majority of the sick children (78 percent, n=113) sought treatment for their illnesses (**Figure 9**). Of those who sought treatment, 71 percent (n=80) used the Health facility, 2.0 percent (n=2) used traditional healers and 20 percent (n=23) used home remedies (**Figure 10**)

Figure 9: Distribution of sick learners seeking treatment

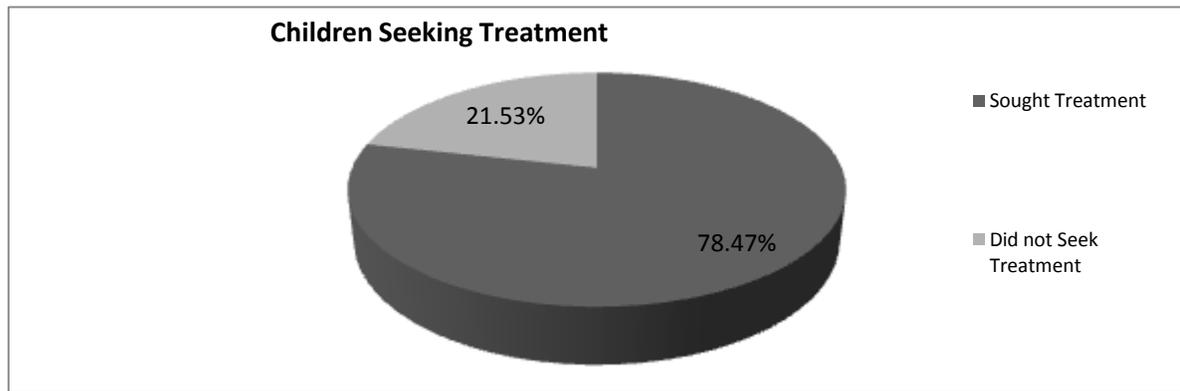


Figure 10: Facilities where Children Sought Treatment



Table 4 below shows the proportion of learners who sought treatment and were treated. Out of the 113 who sought treatment, 53 were male while 60 were females. 13 males and 18 females did not seek treatment. The proportion of males who sought treatment (80.30%) was almost equivalent to the proportion of females who did the same (79.92%).

Table 4 Percent distribution of children treated

Sex	Percentage sought Treatment	Percent who did not seek treatment
	Yes % (n)	No % (n)
Male	80.30 (53)	19.70 (13)
Female	79.92 (60)	23.08(18)
Total	78.47 (113)	21.53(31)

Table 5: Percent distribution of children seeking treatment by age group

Age Group (Years)	Percent distribution	
	Yes % (n)	No %(n)
< 12	78.95 (15)	21.05 (4)
13-18	79.51 (97)	20.49 (25)
> 18	33.33 (1)	66.67 (2)
Total	78.47 (113)	21.53 (31)

The largest Age group of those who reported being sick in the last 2 weeks was 13 to 18 years (122) followed by under 12 years (19) and the least was above 18 years with only three(3) reporting having been sick. Generally all age groups had high proportion of sick children seeking treatment but little difference existed between the age groups >12 and 13-18 Years. These results indicate that most school children when sick will seek treatment in one way or another despite the age group.

Table 4: Seeking Treatment by Grade

Grade	Distribution of learners seek and seeking treatment	
	Yes % (n)	No %(n)
6	88.61 (70)	11.31 (9)
8	62.86 (22)	37.14 (13)
9	70.0 (21)	30.0 (9)
Total	78.47 (113)	21.53(31)

The Table above shows those who sought treatment by Grade of the pupil. Out of 144 who reported to be sick, 79 (54.86%) were in grade 6, while 35(24.31%) were in grade 8 and 30(20.83%) were in grade 9. Majority of the pupils who sought treatment per grade were in grade 6 (88.61%) while the lowest proportion were in grade 8(62.86%). In general most of the pupils in all grades did seek treatment when they were sick.

3.7.2 Sources of information on health issues

The Ministry of Health was cited as the main source of information on health issues. The information is disseminated using a several channels including posters, Public Address system, TV (ZNBC), radio i.e. both national and community radio stations; information education communication talks for groups or individuals, by health providers at health facilities or community. Community meetings were reported to be widely used because they accommodate question and answer time. In some cases drama was used especially

during the commemoration days or agriculture shows on health and nutrition matters. At community level headmen, churches and chairmen, community health workers and traditional birth attendants were also identified as sources of health information. Print media such as newspapers were also identified as source of information. NGOs were cited as another source of information mainly on nutrition and HIV/AIDS issues.

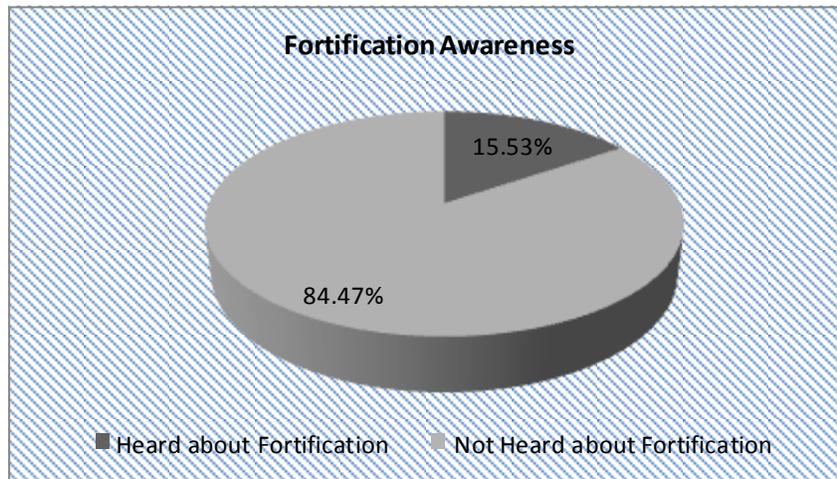
Table 5: distribution of illnesses

District	Illness									
	Diarrhea		Bloody Diarrhea		Fever		Cough		Bilharzia	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Mkushi	0	11	0	11	2	9	1	10	2	9
Mumbwa	3	10	0	13	3	10	0	13	3	10
Lufwanyama	0	6	0	6	3	3	1	5	0	6
Masaiti	0	4	0	4	2	2	1	3	0	4
Chadiza	1	10	0	11	0	11	1	10	0	11
Katete	0	1	0	1	0	1	0	1	0	1
Chienge	10	12	0	22	2	20	1	21	3	19
Chilubi	5	9	1	13	5	9	0	14	0	14
Kaputa	7	5	2	10	5	7	0	12	0	12
Luwingu	6	9	1	14	4	8	2	13	0	15
Mwinilunga	0	15	0	15	4	11	1	14	1	14
Kazungula	0	3	0	3	0	3	0	3	0	3
Namwala	0	2	0	2	0	2	0	2	0	2
Kalabo	0	2	0	2	0	2	0	2	0	2
Senanga	0	3	0	3	0	3	1	2	0	3
Sesheke	0	10	0	10	1	9	2	8	2	10
Total	32	112	4	140	34	110	11	133	11	133

3.8 Food Fortification awareness

The Majority of learners (84 percent, n=272), had never heard about fortification. Only 16 percent had heard about fortification **Figure 11** below shows the distribution of learners indication where or not they have heard about fortification.

Figure 11: Levels of awareness on fortification



In line with this, focused group discussions revealed contrasting views of knowledge and awareness on food fortification. **Box 1** shows the findings from focused group discussions.

BOX 1: Description of food fortification

Some defines food fortification as that of value addition to meals such as encouraging additional of groundnuts to relish improving its nutrition value or mixing maize SAMP with beans. Others described Food fortification as adding additives like vitamin A to mealie meal or sugar, and where table salt is fortified with iodine. This process could then help consumers to get the nutrients they are lacking. Some stated the food fortification involved adding ingredients which might be missing in a particular food. Foods identified to be fortified included mealie meal, sugar, rice, High Energy Protein Supplements (HEPS).

3.8.1 Knowledge about food fortification

At district level Food fortification was defined in several ways. Some respondents indicated as that of value addition to meals such as encouraging additional of groundnuts to relish improving its nutrition value or mixing maize samp with beans. Others described Food fortification as adding additives like vitamin A to mealie meal or sugar, and where table salt is fortified with iodine. By doing so some respondents indicated that people are then helped to get the nutrients they are lacking. Some stated the food fortification involved adding ingredients which might be missing in a particular food. Foods identified to be fortified included mealie meal, sugar, rice, High Energy Protein Supplements (HEPS).

3.8.2 Preferred method to receive information

Community meetings were preferred because the audience are able to ask questions and responded to immediately. Drama groups were also identified as good sources because the audiences tend to learn a lot from the performances. Traditional ceremonies were also preferred since they attract a lot of people. Others indicated they preferred getting information from headmen because they are community leaders.

Stakeholders and community had an understanding of what HGSF especially in areas where the programme was being implemented, as they were able to state its relevance and benefit to the learners. Although this was multi-sectoral initiative there seemed inadequate involvement of other sector beside MoE. This was explained that the Ministry of Agric and Ministry of Health though aware of the programme were not actively involved with respected to their expected roles and responsibilities in relation to HGSF programme. This also pointed to a rather weak coordination mechanism for the initiative.

3.8.3 Fortified maize meal concerns

In most of the districts surveyed maize meal fortification was not well understood at both district and community levels. Most of the communities indicated they were not conversant with it in terms of what it is and its intentions. Others indicated they had previously heard some information about maize meal that would be fortified but nothing followed after that. While others indicated they had no idea about maize meal fortification.

3.8.4 Relevance of maize meal fortification

In Some districts surveyed it was stated that maize meal fortification was not necessary if households ate well balanced meals or diets which could be achieved by increasing production of crops like maize and legumes. However, they indicated that with poor productivity and school children were not supplemented with iron and vitamin A maize meal fortification would be needed. It was therefore indicated that if truly fortified maize meal was beneficial than it would provide vital vitamins which are lacking in children. Others further indicated that maize meal fortification would be relevant in rural settings to improve nutrition status especially in young children than adults.

3.9 Home grown school feeding programme awareness (HGSF)

3.9.1 What is HGSF?

There were various interpretation of HGSF in the districts at both district and community levels, but the common finding was that HGSF was government programme where school children in primary schools areas are provided with a meal. In general respondents

indicated that government procures food stuffs from the local producers including maize grain and beans or cowpeas which was prepared by parents or community members and given to the school children at school, as well as ensuring learners are fed. In Kazungula it was reported that some schools charge 50 ngwee or K1.00 per child to raise money to pay parents who prepare the food.

It was also indicated that this programme was implemented by government in partnership with the World Food Programme (WFP) targeting vulnerable rural areas or where poverty is high. However in Kalabo respondents stated they did not know how the difference between school feeding programme and home grown school feeding programme was, while in Sesheke respondents were not sure of the source of the food whether it was bought by government from FRA and given to schools or t bought food directly from farmers.

3.9.2 Why HGSF?

According to respondents the programme enhanced regularly attendance of learners in school. In general respondents indicated that school meals help improve school attendance and reduced absenteeism in schools. This was stated to be very helpful especially to children that came from poor families. In Sesheke it was reported that school feeding has reduced the number of learners that used to cross over to Namibia to look for piecework for food. Others also indicated that pupils were able to concentrate in class and enabled them to attain basic education. Other stated HGSF improved school performance because of increased teacher- pupil contact time since the children regularly attend school as result of school feeding.

3.9.3 Stakeholder actual and perceived roles on HGSF

Box 2 below shows what was indicated as the stakeholder roles in Home Grown School Feeding.

BOX 2: Roles and responsibilities of stakeholders

MOESVTEE

The roles of **MESVTEE** were reported to include ensuring that food is purchased, distributed and reached the intended beneficiary i.e. pupils, and ensuring that the food was safely stored as well as accounted for by the schools. The ministry was also reported to be responsible for supplementing government supplies by encouraging schools to produce crops like beans, maize, sweet potatoes or groundnuts. Others further indicated the ministry was involved in initiate rapport between school and community involving teachers, local area chief opinion leaders, and faith based organization. Such provided

forum so that the myths around the food are dealt with as well as sensitizes pupils on the need of education.

Ministry of Health

The health ministry was expected to ensure that the food was prepared under sanitary conditions in the schools as well as ensure that the people serving food were medically examined. Other also stated the health officials were supposed to inspect the food before it is given to the children. However these measures were reported to be rarely done. Further the ministry was responsible for monitoring, assessing and evaluating quality and quantity of food given to the learners to ensure they **are healthy**. Other roles that the ministry was expected to do included ensuring that drug administration is done and screening of children for iodine deficiency.

Ministry of Agriculture

The agriculture ministry was expected to promote production crops sufficient food crops such as legumes and grains to cater for general population as well as enough to meet demand for school feeding. In addition the ministry was required to promote value addition through food processing to ensure that the food given to the pupils is the right food. Further the ministry was expected to provide agricultural services to school production unit and assist in marketing in cases where farmers produce more than what they need.

Ministry of Community Development Mother and Child Health

Respondent identified the roles on the MCDMCH mainly in community mobilization and sensitization using community agents. Community mobilization and sensitization were perceived to be important in order to remove misconceptions and fear of Satanism from the school feeding. In addition the ministry was reported to be involved empowering women's groups, youth and some other groups on the Food Security Pack programme by providing seeds and fertilizer to boost production.

The Social welfare under the ministry was expected to ensure vulnerable children attended school, by assist paying for school fees as well as provision of clothes and other basic needs

NGOs

Some NGO were reported to be involved with putting up infrastructure to ensure enrolment of children into school and in extending early childhood nutritional centres. Other were reported to be engaged with sensitizing communities through community groups while some were involved in the provision of safe and clean water to the schools.

3.9.4 Factors required for success HGSFP

Some factors required to ensure success of the HGSF included Creation of a sense of ownership among the community members as well as providing training of various leaders in the community; putting in place committee to spearhead coordination or strengthen involvement of other departments through meetings and joint planning and also having well defined roles and responsibilities of the different stakeholders.

Others further stated the need for capacity building for all departments such as training in food handling and management. Further other indicated the need to improve funding to DEBS office to manage transportation costs for food. Other also recommended erection of feeding shelters in all schools or carrying rehabilitation for run down feeding structures. Community sensitisation needed to be strengthened especially among faith based NGOs, stakeholders involved in the distribution of food, and to local communities to raise awareness of the HGSF programme. Some indicated that creating awareness to could help the communities understand what fortification was all about. Couple with awareness creation was the need to strengthen documentation of the programme and dissemination through community radio stations and meetings.

Provide training for cooks in conjunction with MoH

Concerning food supplies some recommended provision of maize meal instead of maize grain and that food supplies needed to be delivered at once and not in piece meals while food supplies for third term should be delivered before the onset rains. It also recommended providing IEC materials translated into local languages on implementing HGSFP.

3.9.5 Perceived Challenges for districts and communities to participate in HGSF

Some of the common challenges identified by respondents were that the programme was highly centralized where decisions are just passed down to grass root level. In Sesheke because of lack of involvement of grassroots in decision making, parents were refusing to cook for their children resulting in stock piling despite being a hunger stricken area. Other respondents stated fortified maize meal would face some resistance especially in cassava consuming areas like Kaputa. In other district lack of knowledge was cited as potential challenge .i.e. people associated fortification with Satanism which would result in rejection of the programme. Fear of body reaction to fortified foods such as abnormal weight gain was cited in one district.

In other districts they indicated that fortified mealie meal could have a short shelf life span and as such might pose a challenge to store. In some district like Chadiza cited

vandalism because of food insecurity in the communities. Coordination was identified to be weak in most of the district where some sectors were not actively involved or undertaking their expected roles and responsibilities in relation to HGFS. Non availability of system to monitor changes in learners benefitting from this programme was identified as one of the major challenge. In addition other cited poor monitoring of funds even though food distribution was on going.

Other challenges identified included:

- In some district the programme did not include salt and sugar, however, these were deemed to increase programme cost if included in the HGFS package.
- In one district it was felt free provision of feed to pupils would perpetuate dependency syndrome and hence raised questions on sustainability of the programme
- Provision of maize grain instead of maize meal added costs on schools to grind the maize especially that hammer meals were not enough in the areas.

3.9.6 Opportunities to mitigate challenges

This part was poorly responded to in most of the districts with only one district identifying the good rapport between the community members and the school the teachers as one that could help address some of the issues such as averting any myths and misconceptions about HGFS.

DISCUSSION

School attendance in this survey was mainly affected by illnesses of the learners. Almost 45 percent of the learners surveyed had an illness two weeks before the survey. The illnesses suffered by the children include, diarrhoea, cough, fever and bilharzia. Diarrhoea and fever were the major illnesses suffered by the children. The majority of sick children surveyed sought treatment from the Health Facilities. However there was also a large proportion that depended on home remedies. While the survey did not probe the type of treatment that is sought in all responses, the adequacy of treatment from homes may be a subject for interrogation. This is in order to establish the quality of treatment that home remedies are offering. Very few children sought treatment from traditional healers. Contrary to earlier thoughts of absenteeism being due to food insecurity, illnesses were the main cause of absenteeism among children.

In addition, food intake among the learners was generally reasonable. Majority of learners consumed two main meals in day. Those consuming one main meal in a day were very few. There was no major difference in meal consumption between boys and girls. In addition, the survey also revealed very narrow differences in the pattern of foods consumed by the children. Staples, legumes, and green leafy vegetables were the major food items consumed. Relatively small numbers of children took eggs, milk or meats were consumed. In addition, both boys and girls were observed to have a low diverse diet with only 30% of the sampled pupils having had vitamin A rich fruits and vegetables at least once in the previous week prior to the survey.

Although discussions on maize meal fortification have been going on for quite some time in Zambia, this survey show that in most of the districts surveyed maize meal fortification was not well understood at both district and community levels. Most of the communities indicated they were not conversant with it in terms of what it is and its intentions. Others indicated they had previously heard some information about maize meal that would be fortified but nothing followed after that. While others indicated they had no idea about maize meal fortification. Due to the lack of adequate awareness on the subject, some districts stated that maize meal fortification was not necessary particularly if households ate well balanced meals or diets which could be achieved by increasing production of crops like maize and legumes. However, they indicated that with poor productivity and school children were not supplemented with iron and vitamin A maize meal fortification would be needed

There were various interpretation of HGSP in the districts at both district and community levels, but the common finding was that HGSP was government programme where school

children in primary schools areas are provided with a meal. In general respondents indicated that government procures food stuffs from the local producers including maize grain and beans or cowpeas which was prepared by parents or community members and given to the school children at school, as well as ensuring learners are fed. In Kazungula it was reported that some schools charge 50 ngwee or K1.00 per child to raise money to pay parents who prepare the food.

The survey also shows that there is no clear understanding among districts on Home grown School feeding programme and school feeding programme.

Conclusion

This baseline survey provides some useful insights on strengthening the programme. The survey has shown that absenteeism from school by majority children was as a result of illnesses with diarrhea and fever being the major illnesses. The survey has also shown that although consumption of staple and vegetables was high with a frequency of almost 3-4 times in the day, the quality of the meals was poor. The survey also found that there was very little awareness on the meaning of maize meal fortification and home grown school feeding. The survey however, shows that districts and communities recommend various and multiple sources of information that include community levels sources and national sources.

Recommendation

The observations from this survey lead to several suggestions:

- 1) Strengthen national wide awareness on healthy diets particularly for children
- 2) Strengthen prevention of and treatment seeking behavior among children
- 3) Integrate nutrition education in the project to promote consumption of a diverse diet among school children and school communities.
- 4) Create platforms and linkages for HGSFP and maize meal fortification at all levels
- 5) Enhance Community participation in HGSFP implementation to assure programme ownership and sustainability
- 6) Review messages and awareness strategies in the current project.

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ANNEXES

Annex 1 Learners' Questionnaire

MESVTEE / NFNC/ WFP

HOME GROWN SCHOOL FEEDING PROGRAMME

MAIZE MEAL FORTIFICATION BASELINE STUDY

LEARNERS QUESTIONNAIRE

QSN: PROV DIST SCH
[] [][] [][]

Interviewer's name: [.....]

Date of Interview: DD MM YY
[][]/[][]/[][][][]



OCTOBER 2013

SECTION A: IDENTIFICATION PARTICULARS

PROVINCE	
----------	--

DISTRICT	
NAME OF SCHOOL	
NAME OF LEARNER	
SEX	<i>1=Male, 2=Female</i> []
AGE IN YEARS	[][]
GRADE ATTENDED BY LEARNER	[]

SECTION B: EATING PATTERN OF LEARNER

No.	Question	Response	Coding
B1	How many times do you usually eat (Main Meals) in a day	1. Once a day 2. Twice a day 3. Three times a day 4. Four times a day	[]
B2	In the past one week, did you ever eat less than you should have eaten for a day (<i>refer to above response</i>)	1. Yes 2. No (<i>Go to B4</i>)	[]
B3	If yes, what was the main reason for eating less than usual	1. Illness 2. Loss of appetite 3. Lack of food 4. Other, specify	[]
B4	Do you usually take snacks in between main meals	1. Yes 2. No (<i>Go to B6</i>)	[]
B5	If yes, how many times do you usually take snacks in a day	1. Once a days 2. Twice a day 3. Three times a day 4. Four times a day	[]
B6	Do you usually come to school with some snacks from your home	1. Yes 2. No	[]
B7	If yes, what type of snacks		

SECTION C: DIETARY INTAKE

In the past 7 days, tell me the number of times you ate the following foods

Food Group	Number of times per week
	0. Never 1. Once 2. Twice 3. Three Times 4. Four or more
C1 Grains, roots and tubers (Maize, Cassava, Millet, Sweet potatoes etc.)	[]
C2 Legumes and nuts (Beans, Groundnuts, cowpea etc.)	[]
C3 Dairy products (milk, yogurt, cheese)	[]
C4 Flesh foods (meat, fish, chicken and liver/organ meats)	[]

C5 Eggs	[]
C6 Vitamin-A rich fruits and vegetables (e.g. Mango, pawpaw, carrots, etc.)	[]
C7 Other fruits and vegetables (oranges, wild fruits, etc.)	[]

SECTION D: CONSUMPTION OF FORTIFIED FOODS

D1	Have you ever heard about fortified foods	<ol style="list-style-type: none"> 1. Yes 2. No (<i>Go to Section E</i>) 	[]
D2	If yes, state that type of food		

SECTION E: HEALTH STATUS

No.	Question	Response	Coding
E1	In the past two weeks, have you been sick?	<ol style="list-style-type: none"> 1. Yes 2. No (<i>End Interview</i>) 	[]
E2	If yes, tell me what you suffered from	<ol style="list-style-type: none"> 1. Diarrhea 2. Bloody Diarrhea 3. Fever 4. Cough 5. Bilharzia 6. Other, specify..... 	 [] [] [] []
E3	Because of this illness, did you ever miss classes during the time you were sick	<ol style="list-style-type: none"> 1. Yes 2. No 	[]
E4	Did you seek treatment	<ol style="list-style-type: none"> 1. Yes 2. No 	[]
E5	If yes, where did you seek the treatment	<ol style="list-style-type: none"> 1. Health facility 2. Traditional healer 3. Home remedy 4. Other, specify..... 	[]

Annex 2: FGD Guide for community



MOESVTEE/NFNC/WFP

FGD GUIDE FOR COMMUNITY

Home Grown School Feeding Programme

Maize meal Fortification Baseline Study

Maize Meal Fortification Focus Group Discussion Guide with community members
surrounding selected schools

Province: _____
District: _____
Name of School: _____
Date: _____
Start Time: _____ End Time _____
Moderator: _____
Recorder: _____



Introduction

Welcome

Welcome the participants and thank them for agreeing to participate.

Introduction of moderator and recorder

Introduce yourselves

Confidentiality

This discussion will be confidential. We will not tell anyone that you participated in this focus group discussion. Your name and position will not appear in reports and presentations. All your comments will be used for research purpose only. We will take notes throughout the session to make sure that all of your ideas are correctly included in the analyses. Can we proceed with the session?

Review of the program and participation

The Ministry of Education in collaboration with the National food and Nutrition Commission and the World Food Programme; with support from GAIN is conducting an assessment of the school community's knowledge, perceptions and attitudes in relation to food fortification.

Your sincere participation with interesting and practical suggestions will help us develop useful ideas for recommendations to the government on ways of food fortification program implementation in the future.

Icebreaker

You are involved in this study as a member of this community. We would like to ask questions regarding food fortification in Zambia. Please introduce yourself and briefly tell us about yourself.

A. Discussion on Knowledge about Micronutrient Deficiencies

1. Tell us what you know about vitamin A. **Probes:** What are the causes, symptoms and signs, consequences? Who are mostly affected? How can one prevent and treat vitamin A deficiency? When does it mostly occur i.e. period or season? Are there particular areas where deficiency occurs?
2. Tell us what you know about iron deficiency. **Probes:** what are the causes, symptoms and signs, consequences? Who are mostly affected? How can one prevent and treat iron deficiency? When does it mostly occur i.e. period or season? Are there particular areas where deficiency occurs?

B. Discussion on Home Grown School Feeding Programme

1. Tell us what you know about the Home Grown School Feeding Programme (HGSFP)? **Probes:** What is it and what is its purpose? What activities are involved in this programme? Who is involved in the management? Whom does it target?

2. Please share with us what you think are your roles as a community in the HGSFP (both actual and perceived)
 3. Kindly inform us what you know about food fortification in general? **Probes:** What is the purpose of food fortification? What kind of food do you know is fortified in Zambia? Is there any other food that could be fortified, if yes please specify?
- C. Discussion on Maize Meal Fortification in the context of HGSFP**
4. Do you know anything about the maize meal fortification?
 5. Do you think that maize meal fortification in the HGSFP is relevant? **Probes:** Why is it relevant or why is it not relevant? In your opinion what do you think would be the concerns and that would be associated with fortified maize meal for the school feeding?
- D. Discussion on Community Contribution to HGSFP**
6. In order for this community to positively contribute to successful running of this HGSFP programme, tell us what is required? (**Probes:** Capacity building, training in food handling and management, community sensitization and advocacy, dissemination and documentation)
 7. Let us discuss the challenges that you as a community is likely to face once this fortification of the HGSFP begins? **Probes:** What do you think are some of the opportunities that are available to mitigate these challenges?, what will you do as a community to make use of these opportunities
 8. Tell us how you will be able to sustain the Home Grown School Feeding Program.
- E. Discussion on Sources of nutrition information in the community**
9. Kindly inform us about source of information on health related issues. (**Probes:** What are these sources, do they discuss any issues pertaining to nutrition, what nutrition issues are discussed).
 10. In your opinion, how should people be informed about maize meal fortification? **Probes:** Why? What means of communications for effective dissemination of such information could be used in this particular community (TV, radio, newspapers, printed materials, and community meetings, public addresses systems, drama performances etc.)? Why do you think these means of communications would be effective?



MOESVTEE/NFNC/WFP
FGD GUIDE FOR COMMUNITY
Home Grown School Feeding Programme
Maize meal Fortification Baseline Study
Maize Meal Fortification Focus Group Discussion Guide with community members
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Icebreaker

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F. Discussion on Knowledge about Micronutrient Deficiencies

3. Tell us what you know about vitamin A. **Probes:** What are the causes, symptoms and signs, consequences? Who are mostly affected? How can one prevent and treat vitamin A deficiency? When does it mostly occur i.e. period or season? Are there particular areas where deficiency occurs?
4. Tell us what you know about iron deficiency. **Probes:** what are the causes, symptoms and signs, consequences? Who are mostly affected? How can one prevent and treat iron deficiency? When does it mostly occur i.e. period or season? Are there particular areas where deficiency occurs?

G. Discussion on Home Grown School Feeding Programme

11. Tell us what you know about the Home Grown School Feeding Programme (HGSFP)? **Probes:** What is it and what is its purpose? What activities are involved in this programme? Who is involved in the management? Whom does it target?
12. Please share with us what you think are your roles as a community in the HGSFP (both actual and perceived)

13. Kindly inform us what you know about food fortification in general? **Probes:** What is the purpose of food fortification? What kind of food do you know is fortified in Zambia? Is there any other food that could be fortified, if yes please specify?

H. Discussion on Maize Meal Fortification in the context of HGSFP

14. Do you know anything about the maize meal fortification?

15. Do you think that maize meal fortification in the HGSFP is relevant? **Probes:** Why is it relevant or why is it not relevant? In your opinion what do you think would be the concerns and that would be associated with fortified maize meal for the school feeding?

I. Discussion on Community Contribution to HGSFP

16. In order for this community to positively contribute to successful running of this HGSFP programme, tell us what is required? (**Probes:** Capacity building, training in food handling and management, community sensitization and advocacy, dissemination and documentation)

17. Let us discuss the challenges that you as a community is likely to face once this fortification of the HGSFP begins? **Probes:** What do you think are some of the opportunities that are available to mitigate these challenges?, what will you do as a community to make use of these opportunities

18. Tell us how you will be able to sustain the Home Grown School Feeding Program

J. Discussion on Sources of nutrition information in the community

19. Kindly inform us about source of information on health related issues. (**Probes:** What are these sources, do they discuss any issues pertaining to nutrition, what nutrition issues are discussed)

20. In your opinion, how should people be informed about maize meal fortification? **Probes:** Why? What means of communications for effective dissemination of such information could be used in this particular community (TV, radio, newspapers, printed materials, and community meetings, public addresses systems, drama performances etc.)? Why do you think these means of communications would be effective?

Annex 4: List of districts in the survey

SN	District
1	Mkushi
2	Mumbwa
3	Lufwanyama
4	Masaiti
5	Chadiza
6	Katete
7	Chienge
8	Chilubi
9	Kaputa
10	Luwingu
11	Mwinilunga
12	Kazungula
13	Namwala
14	Kalabo
15	Senanga
16	Sesheke

