



Sustainable Nutrition for All Phase II

Report Baseline and KAP surveys

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This report presents the findings of baseline and Knowledge Attitude and Practises (KAP) surveys for the second phase of the Sustainable Nutrition for All (SN4A) project implemented by SNV Netherlands Development Organisation in Zambia and Uganda in collaboration with Wageningen Centre for Development Innovation (WCDI). The project is funded by the Swiss Agency for Development and Cooperation (SDC). The first phase of the SN4A project started in January 2015 and ended in December 2017, covering two districts in Uganda (Kasese and Kyenjojo) and two districts in Zambia (Isoka and Chinsali). A second phase of SN4A started in 2018, wherein the project will be scaled up to two new districts, Kakumiro in Uganda and Kasama in Zambia. In phase II, as in phase I, there will be a focus on improved nutrition and improved dietary diversity, and on the sustainability, scalability and replicability of the model. A baseline survey was conducted to assess dietary diversity, agro-biodiversity, gender dynamics and nutritional status in the new districts of intervention, alongside a KAP survey to build a more in-depth understanding of the critical behavioural components - knowledge, attitudes and practices – relating to the intervention strategy of SN4A Phase II. The report concludes with recommendations for the design of the activities planned for SN4A phase II corresponding to the key survey findings. Low dietary diversity was observed in women and children, emphasising WASH components in the intervention strategy is critical, and attention should be paid to mixed livelihood strategies, as poverty is a major concern in all districts.

Key words: Nutrition, Dietary Diversity, Agrobiodiversity, Nutrition Sensitive Agriculture, Behaviour change Communication, WASH, Market linkage, Gender dynamics

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Photo cover: Northern Zambia (May 2018, Chinsali district)

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Abbreviations and acronyms

ASF	Animal Source Food
BC	Behavioural Change
DDS	Dietary Diversity Score
DHS	Demographic and Health Surveys
ENA	Emergency Nutrition Assessment
FI	Food Insecurity
FIES	Food Insecurity Experience Security
HH	Households
IDDS	Infant Dietary Diversity Score
IPC	Interpersonal Communication
IYCF	Infant and Young Child Feeding
KAP	Knowledge, Attitude and Practices
LAZ	Length for Age Z-score
LHZ	Length for Height Z-score
MAD	Minimum Acceptable Diet
MDD	Minimum Dietary Diversity
MDD-W	Minimum dietary Diversity for Women
MMF	Minimum Meal Frequency
NSA	Nutrition Sensitive Agriculture
SBCC	Social Behaviour Change Communication
SD	Standard Deviation
SDC	Swiss Agency for Development and Cooperation
SN4A	Sustainable Nutrition for All
SU	Sample Unit
SNU	Scaling Up Nutrition
UDHS	Uganda Demographic and Health Survey
UNICEF	United Nation children's Fund
WASH	Water, Sanitation and Hygiene
WAZ	Weight for Age Z-score
WCDI	Wageningen Centre for Development Innovation, Wageningen University & Research
WDDS	Woman Dietary Diversity
WLZ	Weight for Length Z-score
WRA	Woman of Reproductive Age
WUR	Wageningen University & Research
ZDHS	Zambia Demographic and Health Survey

Executive summary

The SNV Netherlands Development Organization addresses undernutrition by improving dietary diversity and promoting access to nutritious food through innovative multi-sectoral solutions that built on SNV's experience of implementing projects in climate smart agriculture, gender, value chain development, and sanitation and hygiene.

In Uganda and Zambia, SNV is implementing the Sustainable Nutrition for All (SN4A) project. The first phase of the project started in January 2015 and ended in December 2017, covering two districts in each country. A second phase of SN4A has started in 2018, wherein the project will be scaled up to two new districts. The aim of phase II is to improve nutrition outcomes through adoption of agrobiodiversity and improved dietary diversity and hygiene practises at the intra-household level. The project is funded by the Swiss Agency for Development and Cooperation (SDC) and technical support is provided by Wageningen Centre for Development Innovation (WCDI).

The core structure of the SN4A phase II approach is the interconnection of four pillars. These four pillars include: i) triggering and maintaining demand for intra-household dietary diversity and improved hygiene at scale, ii) social and behavioural change at the intra-household level, iii) strengthen nutrition sensitive agriculture and market development and iv) strengthen governance for intra-household dietary diversity and hygiene and improved nutrition. Particularly, the promotion of Animal Source Foods (ASF) consumption, water, sanitation and hygiene (WASH) practices, nutrition sensitive agriculture (NSA), market linkages and intra-household gender dynamics will be further integrated into the project during its second phase.

Surveys objectives and methodology

As part of the initial assessments to inform the intervention strategy for SN4A Phase II, following a community mapping exercise reported separately, two types of household surveys were conducted:

1. A baseline survey in the new districts: In phase I, a baseline and end line survey were conducted in the four SNA districts in May 2015 and May 2017 respectively. Following the approach of phase I, a baseline survey was conducted in the new districts for SN4A phase II in May 2018. Anthropometric measurements were part of the baseline survey, as was done at baseline in 2015. In Uganda, additional anthropometric measurements were taken also for the old districts to complement the database.
2. A KAP survey for all districts (existing and new): Given the focus of the programme on behavioural change and the desire to monitor the project progress, a module with Knowledge, Attitude and Practises (KAP) questions around the SN4A Phase II targeted behaviours (WASH, dietary diversity and nutrition, and agro-biodiversity) was developed, in addition to the baseline survey. The KAP module has not been used in the existing districts yet. Therefore, during the round of data collection for the baseline survey and KAP module in the new districts, KAP data was collected in the existing district simultaneously.

The surveys were geared towards two main objectives: a) building a more in-depth understanding of the critical behavioural components - knowledge, attitudes and practices – relating to the intervention strategy of SN4A Phase II, and b) to assess the baseline dietary diversity, agro-biodiversity, gender equality, stunting levels and other factors influencing the diet and nutritional status of children 6-23 months in the two new districts of the SN4A Phase II.

A cross sectional cluster design without control group was used for both questionnaire-based surveys. The study areas were the villages targeted in SN4all phase I, in Kasese and Kyenjojo district in

Uganda, and in Isoka and Chinsali district in Zambia¹, and the villages that will be newly targeted in SN4all phase II, in Kakumiro (Uganda) and Kasama (Zambia)². In Kasama, two separate samples were used, representing the urban and rural areas. Within the villages, households with children of 6-23 months were randomly sampled. The sample unit was a household with a child of 6-23 months and the female caregiver.

In the *new districts*, a total number of 604 respondents were included in the survey, 97% of which were the mother of the index child. The mean age of the respondents was 27.0 years (sd 7.8). The majority of the respondents were the spouse of the head of the household (79%) and monogamous marriage was the most common marital status (74%). Main occupation was own farm in Kakumiro and Kasama Rural and non-agriculture employment in Kasama Urban. Main highest education level achieved was upper primary school in Kakumiro (44%), high school in Kasama Urban (37%) and lower primary school in Kasama Rural (34%). The average household size was 5.7 (sd 2.4) members and the mean number of children younger than 18 years old per household was 3.2 (sd 2.0).

In the *existing districts*, a total number of 803 respondents were included in the survey, 96% of which were the mother of the index child. The mean age of the respondents was 27.4 years (sd 7.8). The majority of the respondents were the spouse of the head of the household (85%) and monogamous marriage was the most common family formation (74%). The main occupation of the respondents was working on their own farm (86%). The highest educational level was upper primary education in all districts (38%). The average household size was 6.0 (sd 2.4) members and the mean number of children younger than 18 years old per household was 3.4 (sd 1.9).

Key findings at outcomes level

The baseline values for the outcome indicators are reported by outcome area:

Nutrition and dietary diversity

In the *new districts*, 33% of the children were found to be stunted in Kakumiro, 36% Kasama Urban and 36% in Kasama Rural, the majority of which were moderately chronically malnourished. In the *existing districts* in Uganda, 46% of the children were stunted in Kasese and 26% in Kyenjojo. The prevalence of wasting was lower than 5% in all districts in both countries. These figures are only representative for areas targeted by SN4all.

The infant dietary diversity score (IDDS) was based on a 24h-recall, using seven food groups. The mean IDDS is 3.7 (sd 1.1) in Kakumiro, 3.7 (sd 1.2) in Kasama Urban, and 3.8 (sd 1.3) in Kasama Rural. A cut-off of four food groups out of seven was used to establish dietary adequacy. The prevalence of children consuming an inadequate diet was 42% in Kakumiro, 38% in Kasama Urban and 35% in Kasama Rural. Food groups least consumed were eggs, and milk and dairy products in all districts. The percentage of children receiving the Minimum Acceptable Diet (MAD) was calculated for breastfed children 6-23 months of age, as the proportion who received both the minimum dietary diversity (at least four food groups) and the minimum meal frequency on the previous day. In all three districts, around 40-46% of the children aged 6-11 months receive a MAD. Among children from 12-17 months of age, 40% in Kasama Rural, 50% in Kakumiro, and 55% of the children in Kasama Urban receive MAD. For children 18-23 months however, Kasama Urban had a much lower percentage of children receiving MAD compared to the other districts, but also a very low proportion of children still being breastfed.

For women of reproductive age, the Women Dietary Diversity Score (WDDS) was 3.9 (sd 1.2) in Kakumiro, 3.9 (sd 1.3) in Kasama Urban, and 4.2 (sd 1.3) in Kasama Rural. For the minimum-WDD, a cut-off of 5 out of 10 food groups was used. The prevalence of women consuming an inadequate diet was 68% in Kakumiro, 69% in Kasama Urban and 63% in Kasama Rural. The food groups least consumed were organ meat, and eggs in all districts. In Zambia, there was a low consumption of milk and dairy products and other fruits. Overall, seasonality might have affected the results of the 24 hours recalls for women and children.

¹ From now on referred to as the *existing districts*

² From now on referred to as the *new districts*

Hygiene practices³

In the *new districts*, the prevalence of children 6-23 months of age who had diarrhoea in the two weeks prior to the survey was 42.7% in Kakumiro, 42% in Kasama Urban and 34% in Kasama Rural. In the *existing districts*, 32% of the children in Kasese suffered from diarrhoea, 29% in Kyenjojo, 44% in Isoka and 36% in Chinsali.

Agrobiodiversity

The overall farm production diversity was calculated based on the number of crops produced plus the number of livestock owned by the households. In the *new districts*, the average farm diversity was 5.5 (sd 4.3) in Kakumiro, 2.4 (sd 2.7) in Kasama Urban, and 5.2 (sd 2.9) in Kasama Rural. The crop diversity score – the sum of counts of total number of different crops – was 4.3 (sd 3.6) in Kakumiro and similarly 4.2 (sd 2.7) in Kasama Rural. Crop diversity was considerably lower (2.0 with sd 2.4) in Kasama Urban, which was expected due to the urban context. The crops most grown belong to the food groups of staples and legumes, nuts and seeds. These findings correspond with the results on food groups most consumed by women of reproductive aged and children 6-23 months. A small number of households reported to own livestock.

Results Pillar 1: Triggering and maintaining demand for intra-household dietary diversity and improved hygiene at scale.

For Pillar 1, in the *new districts*, SN4A will start with awareness raising on stunting, and demand creation for dietary diversity and hygiene practices through triggering sessions in the community. The baseline results show that, 22% of the respondents do not know what stunting is or means in Kakumiro, 33% in Kasama Urban and 47% in Kasama Rural. Among the respondents who *did* know the meaning of stunting, the most frequently reported consequences of stunting were that the child is short for its age and, in Kakumiro, inactivity and susceptibility to illness. Not consuming diverse food was the most reported cause of stunting, followed by not consuming enough food, and lack of knowledge on balanced, diverse and nutritious diet. In all new districts, the majority of the respondents reported that to prevent stunting it is important to consume more diverse food and increase meal frequency. Interestingly, few respondents made the link between stunting, WASH and illness/infections.

The key source of information on child nutrition and health was is health clinic, especially in Zambia. Agriculture extension agents are the main source of information on agriculture, however respondents also frequently reported to not have received any information in the past 6 months.

In the *existing districts*, the project will focus on maintaining the demand and supporting the structures formed in phase I to become sustainable. There will be integration of the importance of improved hygiene and sanitation practices for nutrition outcomes. This will be supported by post-triggering activities at community level. *The results on the behaviours within the domains targeted by SN4A are mostly reported under Pillar 2 Social and behaviour change at intra household level, but relevant to both Pillar 1 and 2. As a result, some of the recommendations for Pillar 1 refer to results reported under Pillar 2.*

Conclusion and recommendations Pillar 1

In the *new districts*, some basic nutrition knowledge is already in place, but responses show that people do not consider poor water and sanitation practises as one of the causes of stunting. *It is recommended to emphasize the link between nutrition outcomes and WASH during the triggering activities.* In addition, diarrhoea prevalence is disturbingly high, and most of the households in the existing and new districts are using unimproved water sources, such as unprotected dug wells, ponds, rivers and streams (findings pillar 2). Nutrition outcomes are hard to achieve if people do not have access to clean water. *It is therefore recommended to include demand creation among communities for access to improved water sources.* The most common toilet is a pit latrine without a slab (findings pillar 2). *The triggering sessions should be geared towards getting people to invest in*

³ During the endline in the existing districts, the outcome level indicator for hygiene practises (prevalence of diarrhoea among children 6-23 months) was not included; it was therefore also incorporated in the KAP module for the existing districts.

their toilet and ensure that their household has access to an improved latrine, which reduces the chance that diseases are spread.

A quarter of the respondents in Kakumiro did not receive any information or support on agriculture during 6 months prior to the survey. *It is recommended to use the triggering sessions in Kakumiro to clarify the role of agriculture extension agents and trigger demand for nutrition sensitive agricultural support.*

Results Pillar 2: Social and behaviour change at the intra-household level

For pillar 2, in the *new districts*, the existing practices developed under SN4all phase I will be applied; SBCC will be employed using interpersonal communication (IPC) between the Nutrition Action Groups and the households; community sessions with demonstration of improved practices; and mass media campaigns using the radio. In the *existing districts*, phase II of the project will continue to focus on addressing behaviours of phase I integrating hygiene practices. The behaviour domains that will be addressed are dietary diversity, agrobiodiversity, intra-household dynamics and hygiene practices.

Looking into intra-household gender dynamics, in the *new districts* Kakumiro and Kasama Rural, mainly men decide whether food crops are sold or consumed, receive the money from the sales of cash and food crops, and decide how to spend the income. In Kasama Urban, it is not common to produce crops and decisions on allocation of household income are most often made jointly by male and female household members (33%). Almost all the respondents in all districts are the main responsible for food preparation in their household. Either adult men (53% in Kakumiro and 45% in Kasama Rural) or children (44% in Kasama Urban) are served first and animal source food (ASF) is unequally distributed in 67% of the households in Kakumiro, 39% in Kasama Urban, and 42% in Kasama Rural. In all three districts, the husband or male partner is most often the one receiving the main share of ASF. The most reported reasons for this practise were “as a sign of respect”, “ASF is bought with his/her money” (Kakumiro), and “cultural practice” (Kasama Urban and Kasama Rural). ASF were mainly purchased by the husband in Kakumiro and by the women in Zambia and the type of ASF purchased varied by district.

In the *existing districts*, in most households children are served first. Adult men receive the main share of ASF in Uganda, but in Zambia, it is the men and children. The most reported reasons to explain this type of intra-household food distribution were “sign of respect” and “cultural practice”. ASF are purchased by the men in all existing districts except Kasese, where this is most often done by the women.

In the *new districts*, most of the index children have received breastfeeding within one hour after birth and 73% in Kakumiro, 64% in Kasama Urban and 86% of the children in Kasama Rural are still breastfed. The most reported reasons to discontinue breastfeeding were “the child is too old for breast milk” in Kasama Urban (61%) and Rural (73%), and “mother is pregnant again” in Kakumiro. More than half of the respondents in all districts practised exclusive breastfeeding for six months, mostly because “they were advised to do so”. Across all districts, respondents find it difficult provide diverse and nutritious food to the child, because they lack money to purchase these foods.

In the *existing districts*, 88% of the children in Kasese, 67% in Kyenjojo, 83% in Isoka, and 91% in Chinsali were still breastfed. The most reported reason for discontinuation of breastfeeding was “not having enough milk” in Kasese, while in the other districts it was the age of the child. In Kasese, 58% of the children were exclusively breastfed for 6 months, which is lower than 81% in Kyenjojo, 82% in Isoka and 77% in Chinsali. The most reported reasons to practise exclusive breastfeeding for six months were “to prevent stunting”, “the milk is nutritious” and “advised to do so”. In Uganda, more women put the child to the breast within one hour after birth (82% in Kasese; 87% in Kyenjojo) compared to Zambia (64%, Isoka; 74% in Chinsali). In both countries, almost all the respondents think that the infants should start complementary food at six months and the percentage of women who reported difficulties in providing diverse and nutritious food was around 30% across all districts. Lack of money to buy diverse and nutritious food was also in the existing districts the most reported reason for this difficulty.

Regarding WASH indicators, in all *new districts*, it is commonly believed that diarrhoea is spread by unclean food (51% in Kakumiro, 69% in Kasama Urban, 62% in Kasama Rural). A number of respondents thought that teeth growth was causing diarrhoea.

Almost all respondents in the new districts have the habit of washing their hands with soap but only 2% in Kakumiro, 9% in Kasama Urban and 6% in Kasama Rural of people wash their hands on the five critical times⁴. Respondents in Kakumiro explained that handwashing is important for preventing diseases (52%), removing germs (49%) and having clean hands (46%). In Zambia, handwashing was considered to be important for preventing diseases (by 78% in Kasama Urban and 81% in Kasama Rural), followed by the prevention of diarrhoea (45% and 39% respectively). In Kakumiro, the majority of the respondents wash their hands anywhere (51%); whereas in Kasama Urban 55% have a fixed handwashing station, in Kasama Rural this is 84%.

The percentage of households using an improved source of drinking water (in most cases all year round) is only 44% in Kakumiro, 55% in Kasama Urban and 15% in Kasama Rural. Unprotected dug wells are the most common source of water. Women are mainly responsible for water collection and the time needed to collect water is on average 30 minutes in Kakumiro, 12 minutes in Kasama Urban, and 17 minutes in Kasama Rural. The majority of the households always treat their drinking water, mostly through boiling in Kakumiro, and using disinfectants and chemicals in Zambia. Almost all the households in both countries have a latrine and use it, but only 34.1% in Kakumiro, 29% in Kasama Urban, and 63% in Kasama Rural have access to an improved latrine.

In the *existing districts*, it is commonly believed that diarrhoea is spread by unclean food, dirty hands and dirty water. A small proportion of women did not know how diarrhoea is spread.

Almost all the respondents have the habit of washing their hands with soap but only 2% in Kasese, 1% in Kyenjojo, 12% in Isoka, and 5% in Chinsali do so at the five critical times. Most of the households have a fixed handwashing station (70% in Kasese, 81% in Kyenjojo, 64% in Isoka, and 64% in Chinsali). According to the majority of respondents in both countries, handwashing with soap is important for disease prevention and good hygiene.

An improved water source is used in only 28% of the household in Kasese, 52% in Kyenjojo, 42% in Isoka, and 34% in Chinsali. In Kasese, the main sources of water were pond, river or stream or tap water; in Kyenjojo, unprotected dug well, tube well or borehole; in Isoka the household connection or unprotected dug well; and in Chinsali, unprotected dug well. Mainly the women are responsible for collecting water in all districts and it takes on average 23 minutes in Kasese, 35 minutes in Kyenjojo, 18 minutes in Isoka, and 15 minutes in Chinsali to collect water. In the majority of the households, drinking water is treated, except for the households in Kasese (only 30%). Boiling water is the most common method for water treatment. However, across all existing districts respondents reported that treating drinking water is not consistently practised in their household.

Almost all the households in both countries have a latrine and use it all year round. However, only 53% of the households have an improved latrine in Kasese, 23% in Kyenjojo, 4% in Isoka and 53% in Chinsali.

Conclusions and recommendations Pillar 2

The survey results show that women often discontinue breastfeeding their under-two child because they think the child is too old to be breastfed. *It is recommended to encourage continuation of breastfeeding up to two years of age in the SBCC messaging.*

It was found that women find it difficult to provide diverse and nutritious complementary food for their children due to a lack of money. *It is recommended to investigate whether this concern is related to the level of household income, to women's access to income, or both. If the household income is simply too low, the project could intensify support to households to produce nutritious crops for home*

⁴ The five critical times for handwashing promoted in SN4all are "before feeding the child", "before eating", "after defecation", "before preparing food", and "after cleaning infant who has defecated".

consumption, or help facilitate market access for income generation. If it is more a matter of women's access to income, SBCC should focus on the intra-household dynamics. The findings also show that ASF are not equally distributed among the household members. Improved intra-household distribution could increase women and children's dietary diversity and thus the micronutrient adequacy of their diet. *It is recommended that SBCC messages focus on the intra-household distribution of animal source foods and the benefits for women and children, whereby current consumption patterns and practises should be explored and challenged.*

Diarrhoea prevalence is of high concern and poor WASH practices were observed in both existing and new districts. The diarrhoea prevalence is equally high in the new and existing districts. These findings underpin and substantiate the SN4A phase II strategy to intensify the WASH component in the project implementation. Even when diarrheal episodes are not fatal, illness early in life can have long-term effects on child growth and development. Only very few people have a fixed handwashing station and wash their hands on the five established critical moments. Despite the use of unprotected water sources, still not all households treat their water before drinking it. The risk for infection therefore is very high. *It is recommended that the SBCC messages – in line with the recommended triggering activities - promote handwashing practises, use of clean water and effective water treatment practises.*

Relating to the SBCC for agro-biodiversity, the common notion observed among respondents in the new districts was that crop diversity relates mainly to soil conditions, rather than household diets, as reported in the findings under pillar 3. *In the new districts, SBCC messages should be geared towards raising awareness on the important role of crop diversity for dietary diversity.*

Results Pillar 3: strengthen nutrition sensitive agriculture and market development

For pillar 3, the main activities planned are to establish hubs and community seed banks to demonstrate and support nutrition sensitive agriculture; develop market facilitation and linkages; support and strengthen extension officers in gender integrated nutrition sensitive agriculture and market development; engage agriculture extension service providers and link with government and other programmes.

In the *new districts*, 81% of the households in Kakumiro, 61% in Kasama Urban and 91% in Kasama Rural have access to land, which is most often a production plot. In all districts, the crops produced are typically staples and nuts/legumes/seeds, while a smaller proportion of households grow vegetables. In terms of livestock owned, the majority of the households in Kakumiro and Kasama Rural own poultry; in Kasama Urban this is only 28%. In Kakumiro, also goats and pigs are quite common. Regarding vegetable production, half of the households in Kakumiro and in Kasama Rural irrigate their vegetable plot during dry season, while in Kasama Urban all respondents reported to do so. The rest of the households do not irrigate, due to the distance to the water source, a lack of tools or because the soil is close to a wetland and hence is never dry. The main source of vegetable seeds is the local market in Kakumiro and the input store in Kasama Urban and Kasama Rural.

According to the majority of the respondents across all districts, it is important to grow different crops for soil quality. Almost all the respondents agreed that crop diversification could have an impact on the nutritional status of the household members.

In all *existing districts*, the majority of the households have access to land, for most households this is a production plot and a smaller proportion of the households have access to a vegetable garden or wetland. Staples are the main crops produced in the existing districts, but in Uganda households are also producing vegetables, fruits, nuts/legumes/seeds, and cash crops. Vegetable plots are irrigated by 62% of the households in Kasese, 58% in Kyenjojo, 96% in Isoka, and 87% in Chinsali. The most reported reasons as to not irrigate the vegetable plots, were the distance to the water source, lack of knowledge and lack of water.

In Uganda, respondents mostly use vegetable seeds from their neighbours and their own saved seeds, whereas in Zambia, most household source their vegetable seeds from the local market.

In the existing districts, growing different crops is considered important to diversify the diet, and as an income opportunity in both countries. It is recognised by most respondents that growing different crops can have an impact on the nutritional status of the household members.

Regarding gender dynamics around food production and livestock management, among respondents in the *new districts*, especially in Zambia, working in the vegetable garden is considered a shared activity between men and women. Decisions on what to produce in the vegetable garden are in Uganda often taken by the respondents themselves (48%), whereas in the districts in Zambia, the male partner seems to play a bigger role. Working on the production plots is in both countries considered by most respondents as a joint activity (40% in Kakumiro, 52% in Kasama Urban and 77% in Kasama Rural), and the same applies for decisions on what crops to grow.

In Uganda, it is the responsibility of the women to take care of goats, but the decisions are made by the partner (48%). In Zambia in about half of the goat owning households, the husband is the person responsible to take care of and make decisions about the goats (45% Kasama Urban; 54% Kasama Rural). Regarding the poultry and pigs, in Kakumiro, the respondents themselves are the main responsible for keeping the animals (64%, 49%). However, the partner of the respondents makes the decisions on the poultry. In both districts in Zambia, responsibilities and decision making on the poultry were mostly joint activities.

In the *new districts* Kakumiro and Kasama Urban, almost half of the respondents reported that there had been (a) time(s) when the members of the households went hungry in the past 12 months. Differently, in Kasama Rural around 35% of the households experienced hunger in the past 12 months. Food shortage was highest in April and May in Uganda, and in January and February in Zambia.

The household food security situation was further assessed using the Food Insecurity Experience Scale. The majority of the households in both countries were either moderately or severely food insecure: 59% in Kakumiro, 78% in Kasama Urban, and 62% in Kasama Rural. Severe food insecurity was more common than moderate food insecurity. Only less than a quarter of the respondents in the new districts perceived their household as being food secure.

Conclusions and recommendations Pillar 3

In Kakumiro and Kasama Rural, the average crop diversity score was four, and most of the crops produced were staples. Vegetable production is not very common. *It is recommended that activities under this pillar focus on enablers and barriers for crop diversification and production of nutritious crops, and – likewise- for keeping (small) livestock, in order to develop realistic action plans for implementation with the communities for significant changes.*

The cumulative prevalence of moderate and severe food insecure households is high. Several months per year households experience hunger. *In line with the above, it is recommended to compile a cropping calendar together with the communities in order identify crops for year round availability of food.*

The access to the market is difficult in all rural districts and the number of contracts is low. *A deeper assessment should be developed with the communities in order to identify the barriers to access the markets. SBCC messages should be delivered on the importance to sign contracts with traders or processors.*

1 Introduction

Worldwide, around 2 billion people are undernourished and 23% of the children under 5 years of age are stunted. Specifically, although stunting decreased in the last decade, it remains high mostly in Africa and Asia with a prevalence of 31% and 24%, respectively⁵. Stunting indicates chronic malnutrition, which is linked to impaired physical and cognitive development of the children, and deprivation of the chance to full their potential growth. Therefore, there are negative consequences for health, productivity and development at individual and national level.

In this context, the SNV Netherlands Development Organization addresses undernutrition by improving dietary diversity and promoting access to nutritious food through innovative multi-sectoral solutions that built on SNV's experience of implementing projects in climate smart agriculture, gender, value chain development, and sanitation and hygiene. SNV works at international level in the development sector collaborating with local partners in Asia, Africa and Latin America with the aim of providing tools, knowledge and connections needed to increase incomes and access to basic services. Specifically, the team of local and international advisors provide expertise in Agriculture, Energy and Water, Sanitation & Hygiene (WASH) to contribute to the reduction of poverty finding local solutions. SNV implements different projects over the countries involving governments, private sector and civil society⁶.

Among these projects, SNV is running Sustainable Nutrition for All (SN4A) project in Uganda and Zambia. The first phase of the project started in January 2015 and ended in December 2017. A second phase started in 2018 and it will run until 31st of December 2020. This project is funded by the Swiss Agency for Development and Cooperation (SDC). Technical support is provided by Wageningen Centre for Development Innovation (WC DI), supporting the monitoring and evaluation and generation of the evidence base between agrobiodiversity, improved dietary diversity and nutrition.

1.1 Background of SN4A project

Zambia and Uganda are countries with high rates of malnutrition, despite their recent economic growth, scoring 38.2 (alarming) and 32.0 (serious), respectively, on the Global Hunger Index⁷. Both countries have recognised their nutrition problems, indicated by the prevalence of stunting in children under age of five of 48.5%⁸ and 34.5%⁹ in Zambia and Uganda respectively. There are several interconnected causes of child malnutrition, which include inadequate dietary intake, infrequent consumption of nutritious food as well as quality and diversity of such foods and high disease burden.

Phase I of SN4A was implemented in four districts in Uganda and Zambia, Kasese and Kyenjojo, and Isoka and Chinsali, respectively. This first phase was successful in increasing both the average dietary diversity score (DDS) and minimum dietary diversity (MDD-W) for women of reproductive age (WRA) in the targeted districts. The prevalence of women of reproductive age consuming an inadequate diet (food from less than 5 groups) significantly dropped from 70% to 31% in Chinsali, from 78% to 30% in Isoka, and 79% to 15% in Kasese and Kyenjojo. The minimum dietary diversity for children 6-23 months also significantly improved (mean infant dietary diversity score (IDDS) of 3.3 improved to an IDDS of 4.7 at the endline). The number of children consuming an inadequate diet dropped from

⁵ FAO, IFAD, UNICEF, WFP and WHO. 2017. The State of Food Security and Nutrition in the World 2017. Building resilience for peace and food security. Rome, FAO

⁶ SNV available at: <http://www.snv.org/about-us/organisation>

⁷ IFPRI, 2017. Global Hunger Index. The inequalities of hunger. IFPRI, Washington DC / Dublin / Bonn

⁸ ZDHS, Zambia Demographic and Health Survey 2013/14

⁹ UDHS, Uganda Demographic and Health Survey 2016

68% to 21% in Chinsali; from 45% to 15% in Isoka; 46% to 7% in Kasese; and 63% to only 3% in Kyenjojo. Reported changes were statistically significant¹⁰.

SN4A's underlying hypothesis is that *improving nutrition outcomes through adoption of agrobiodiversity and improved dietary diversity at the intra household level, requires a combined approach*. This approach involves four interconnected pillars, namely:

1. triggering and maintaining demand for intra-household dietary diversity and improved hygiene at scale;
2. social and behavioural change at the intra-household level;
3. strengthen nutrition sensitive agriculture and market development;
4. strengthen governance for intra-household dietary diversity and hygiene and improved nutrition.

Improving the food environment through improved supply of and access to nutritious food needs to happen in parallel with triggering and improving intra-household dietary and hygiene practices. To be able to scale and replicate this pattern and ensure that populations beyond those targeted by the project will also continue to be triggered to improve their nutrition, it is also essential to build the capacity of local and national authorities in the same methodologies. Thus, the four main pillars of the SN4A model are demand creation, behavioural change, increased supply of nutritious rich foods and nutrition governance.

In phase II, as in phase I, there will be a focus on improved nutrition and improved dietary diversity, and on the sustainability, scalability and replicability of the model. SN4A will continue in the four existing districts and will roll out to two new districts, Kasama in Zambia and Kakumiro in Uganda. The new districts have been selected based on the criteria that they are different to the existing areas (i.e. more rural in Uganda and an urban/peri-urban setting in Zambia). Based on the findings of phase I, particularly concerning the dietary gaps in animal source food (ASF) consumption, phase II of the project will address this critical aspect. Furthermore, water, sanitation and hygiene (WASH) practices, nutrition sensitive agriculture (NSA) and market linkages will be integrated into the programme, specifically into the triggering social, and behaviour change communication (SBCC) pillar. Intra-household gender dynamics will also be further integrated and strengthened in the triggering and post triggering and SBCC.

Scaling up to new districts will provide insight into how a 'lighter' adaptation of the model (less intensive on project support) can deliver results, and what aspects of the SN4A pillars are taken up and to what effect. With the implementation of the model in two countries and six districts, SN4A aims to generate the evidence base that informs policy around effective models for improved nutrition, the links between agrobiodiversity and improved dietary diversity, and the key role of gender in enhancing improved nutrition.

As part of the initial assessments to inform the intervention strategy for SN4A Phase II, following a community mapping exercise reported separately, SN4A Phase II will build on two types of surveys:

- A Baseline survey in the new districts. In phase I, a baseline and end line survey were conducted in the four SNA districts in May 2015 and May 2017, respectively. Following the approach of phase I, a baseline survey was conducted in the new districts for phase II in May 2018. Anthropometric measurements were part of the baseline survey, as was done at baseline for phase I in 2015. In Uganda, additional anthropometric measurements were taken also for the old districts to complement the database.
- A Knowledge Attitude and Practices (KAP) survey for all districts (existing and new). Given the focus of the programme on behavioural change and the desire to monitor the project progress, a module with KAP questions around the SN4A Phase II targeted behaviours was developed, in addition to the baseline survey. The KAP module has not been used in the existing districts yet. Therefore, during the round of data collection for the baseline survey and KAP module in the new districts, KAP data was collected in the existing district simultaneously.

¹⁰ Herens M., Pittore K., 2017. SNV sustainable Nutrition for All. Endline evaluation Report Project Phase I – 2015-2017. Wageningen Centre for Development Innovation. Wageningen, the Netherlands

1.2 SN4A phase II project aim and objectives

The aim of the SN4A phase II project is to improve nutrition outcomes through adoption of agrobiodiversity and improved dietary diversity at the intra-household level. The five project objectives across the pillars are described in Table 1.1.

Table 1.1 Overview of objectives across SN4A four pillars

Pillar	Objectives	
1. Triggering and maintaining demand for intra-household dietary diversity and improved hygiene at scale	I. Build capacities among local leaders and district level service providers for triggering and maintaining demand for intra-household dietary diversity and hygiene practices at scale	V. Generate the evidence base to support the development of national, regional and global policies that support nutrition-sensitive interventions.
2. Social and behavioural change at the intra-household level	II. Strengthen social and behavioural change at intra-household level through communication targeted on the benefits of dietary diversity, hygiene practices at scale built	
3. Strengthen nutrition sensitive agriculture and market development	III. Strengthen nutrition-sensitive agriculture production and food systems.	
4. Strengthening governance for intra-household dietary diversity and hygiene and improved nutrition	IV. Strengthen national and local governance capacity for nutrition sensitive agriculture, intra-household dietary diversity, hygiene practices and improved nutrition.	

1.3 Objectives of baseline and KAP survey

The surveys are geared towards two main objectives:

- 1) To assess the baseline diet diversity, agro-biodiversity, gender equality, stunting levels and other factors influencing the diet and nutritional status of children 6-23 months in the two new districts of the SN4A Phase II.
- 2) To build a more in-depth understanding of the critical behavioural components - knowledge, attitudes and practices – relating to the intervention strategy of SN4A Phase II.

Baseline survey

The overall objective of the baseline survey is to assess the food and nutrition security situation at household level in the newly targeted districts in SN4A Phase II. The focus is assessing the nutritional status of children aged 6-23 months, dietary diversity of both child and mother/caregiver, agro-biodiversity, intra-household decision-making and water, sanitation and hygiene (WASH). The purpose is to provide insights for the adjustment of the intervention strategy to tailor it to the needs of the new districts, and the baseline serves critical evaluation purposes.

Specific objectives are:

- To assess the Dietary Diversity Score of children 6-23 months
- To assess the Dietary Diversity Score of women of reproductive age
- To describe household livelihood strategies (agricultural/non-agricultural)
- To assess agrobiodiversity of farm households
- To get insights in factors contributing to increased agro-biodiversity and diet diversity and possible barriers
- To assess gender dynamics in decision-making and responsibilities relating to access to food and nutrition in the household
- To assess gender dynamics in decision-making and responsibilities relating to agricultural production
- To assess Infant and Young Child Feeding (IYCF) practices in children 6-23 months
- To assess chronic malnutrition in the form of length for age Z-scores (LAZ) in children 6-23 months
- To assess acute malnutrition in the form of length for height z-scores (LHZ) in children 6-23 months
- To assess household food insecurity experience in the past 12 months

KAP Survey

The KAP module will serve as a surveillance tool to monitor behaviour change within the domains targeted by SN4A Phase II (WASH, dietary diversity and nutrition, and agro-biodiversity). The module will be administered on 6-months/1-year interval and inform programme focus. The objective of the KAP module is also to inform the Behaviour Change (BC) component of SN4A Phase II.

Specific objectives KAP survey are:

- To assess knowledge, attitude and practices, relating to dietary diversity & nutrition, agro-biodiversity situation and WASH in caregivers of children 6-23 months.

1.4 Outline of the report

This report presents the findings of baseline in the new and KAP module in the new and existing districts of the SN4A phase II project. As presented above, chapter 1 describes the background of the project and its aim and objectives. Chapter 2 describes the methodology of data collection and data analysis of both surveys. Chapter 3 presents the general characteristics of the sample population of both surveys. Chapter 4 presents the main findings for the outcome level indicators. The presentation of all results is ordered by following the SN4A pillar design and the division between new and existing districts presented in the project proposal. Chapter 5 describes the findings for pillar 1, trigger and maintain demand for intra-household dietary diversity and improved hygiene at scale. Chapter 6 describes the findings for pillar 2, behavioural change through the understanding of attitudes and practices related to nutrition and hygiene at intra-household level. Chapter 7 describes the findings of pillar 3, improving nutrition through agrobiodiversity and market linkages. Chapter 8 describes the overall conclusions and recommendations for project implementation in SN4A Phase II based on the survey results.

2 Methodology

2.1 Study design

A cross sectional cluster design without control group was used for both surveys. The surveys were done at one point in time, in parallel in both countries, in Uganda from 21st to 25th of May 2018, and in Zambia from 18th of May to 11th of June. The timeframe was selected to be in line with the base- and end-line survey of Phase I of the project.

2.2 Target population

The sample unit (SU) was a household with a child of 6-23 months and the female caregiver. Male respondents were excluded in order to have a homogeneous sample in both new and existing districts and to calculate the Women Dietary Diversity (WDDS) in the same interview. They were sampled in the new and existing districts in Uganda and Zambia, in six districts. For baseline, the total sample size was 600 households, 200 households in Uganda and 400 in Zambia, whereas, for KAP, the sample size was 400 households per country, 200 households per district.

2.3 Study area

Uganda

In Uganda, the *existing* districts targeted in SN4A phase I are Kasese and Kyenjojo in the Western part of Uganda (Figure 2.1, Figure 2.2). In Kasese, Kisinga Sub County was targeted; in Kyenjojo, Nyabuharwa Sub County was targeted. According to the Uganda census 2014, Kyenjojo has 422,204 people, while Kasese has 694,992 people. In Kasese, SN4A reached 10 nutritional hubs including 34 villages. In Kyenjojo district 8 nutritional hubs are reached including 30 villages. In both districts 20 villages were randomly selected for the KAP survey.

The *new* district that was included in SN4all phase II is Kakumiro, located in Bunyoro Region (Figure 2.3). It is selected for its different typology i.e. it is more rural, has poor road network and poor access to markets. The project is targeting Nkooko Sub County which has a total population of 27,266 people. Kakumiro district is one of the newly created districts in the country (as per 1st July 2016). The District has a total of 12 sub counties and 2 Town Councils, 55 parishes, 2 Town Boards and 416 villages. In Kakumiro, the study area was the sub-country Nkooko, and 10 villages were randomly selected for the baseline survey.



Figure 2.1 Kasese district



Figure 2.2 Kyenjojo district



Figure 2.3 Kakumiro district (Kibaale)

Zambia

In Zambia, the *existing* districts targeted by SN4A in Phase I are Isoka and Chinsali districts in Muchinga Province of Northern Zambia (Figure 2.4, Figure 2.5). As of the 2010 Zambian Census, Isoka district had a population of 72,189 people and Chinsali district had a population of 146,518 people. In Isoka, SN4A phase I reached 3 nutritional hubs (Mpandwa, Muyeleva, Londamaka) including 14 villages, 6 of which were randomly selected for the KAP survey. In Chinsali, the programme was implemented in 5 nutritional hubs (Kalela, Chungulo, Cheswa, Chembe Malata, Chunga), which included 25 villages, 12 of which were randomly selected for the study sample.

Kasama is the *new* selected district for upscaling of SN4A in Phase II, located in the north of the Northern Province, and it was selected as it represents both an urban and rural context (Figure 2.6). As of the 2010 Zambian Census, Kasama district had a population of 231,824 people. The SNV office is located in Kasama, and both Isoka and Chinsali districts are located within a 2-3 hours' drive from the office. In Kasama, the project area addresses 3 new hubs in the urban area of Kasama including 14 villages for the baseline survey. In addition, 31 villages in the peri-urban and rural areas of Kasama district were included for the baseline in order to create a comprehensive data set for Kasama District government to develop a district-wide nutrition policy.



Figure 2.4 Chinsali district

Figure 2.5 Isoka district

Figure 2.6 Kasama district

2.4 Sampling method

The target population and the data collection procedures were determined in accordance with the methodology and protocols of phase I endline and in consultation with SNV country teams.

Within the districts of the study areas explained above, villages were randomly selected for the study. Within the villages, households with children 6-23 months were randomly sampled in accordance with the sampling procedures used for the endline evaluation of SN4A phase I (2017). The desired sample size in each district was 200 observations. This means that in total 800 caregiver's children aged 6-23 months were sampled for this study. For Zambia, 200 children aged 6-23 months were included for anthropometrics in the new district; whereas in Uganda 200 children were sampled for anthropometrics in each of the existing and the new districts, resulting in a total sample of 600 children for anthropometrics in Uganda.

Random sampling selection were developed for both countries based on the list of households with children 6-23 months in each village, developed by the local teams active in the field for SNV. In Uganda, the subjects were randomly selected within existing nutrition hubs, while in the new districts villages were selected from a list of villages that will be included in the nutrition hubs for phase II. In both new and existing districts in Zambia, the villages and the subjects were selected randomly when possible. If not, a convenience sampling was applied.

To ensure that each hub was equally represented in the sample, the total number of households (HHs) required for the sample size was divided by the number of hubs. The number was different for each district. In Uganda, the target size was 50 households per hub in Kakumiro, 20 households in Kasese,

and 23 households in Kyenjojo. In Zambia, the target size was 34 households per hub in Kasama Urban, 50 households in Kasama Rural, 67 households in Isoka, and 40 households in Chinsali. In each hub, around 50% of the villages, 2-3 villages per hub, were randomly selected for the sampling frame. When there were ≤ 2 villages in the hub, all of them were selected; when there were from 3 to 5 villages, 2 villages were selected; and when there were ≥ 6 villages, 3 villages were selected.

Following the selection of villages, households were randomly selected in each hub from the list with names of households with children 6-23 months (provided by the SNV team) using the Emergency-Nutrition-Assessment (ENA) software. For the selection of the households, the following inclusion and exclusion criteria were applied:

Inclusion criteria household:

- Household with a child aged 6-23 months
- The caregiver who feeds the child should be present at time of the interview

Exclusion criteria household:

- The child or the caregiver were sick in the past 24h
- There was a holiday or event which changed food intake in the past 24h
- The caregiver who fed the children during the day prior to the survey is not present at the time of the interview

Due to inconveniences with mobilization, alternative strategies were sought. The enumerators went door to door asking for households with children in the right age range. In addition, on field a number of mothers/caregivers, who spontaneously showed up with a child in the eligible range but not present in the list, were included in the sample in order to reach the daily target. This was applied in both countries.

2.5 Data collection methods

2.5.1 Questionnaires

WCDI designed the two questionnaires in collaboration with SNV SN4A project teams. Both questionnaires include closed questions with only one or multiple answers possible (Appendix 1, Appendix 2). They were built on the questionnaires used for base- and end-line evaluation of phase I of the project. The questionnaires were developed in English and then translated in the local languages. The translated version was used as a support during the interviews by the enumerators in Uganda. In Zambia only the consent form and the list of food for the 24h recall was translated. Data collection was conducted with paper and pencil.

SNV country teams arranged the coordination and logistics for the mobilisation of the teams and the respondents. In Uganda, the women were asked to come at a specific moment of the day to one central place in the village. This was done also in Zambia but it was not always possible. When the women were not showing up, the enumerators went around finding eligible respondents.

2.5.2 Baseline and KAP variables

Variables were selected based on the evaluation of phase I and the new focus areas for SN4A phase II (consumption of ASF, market linkage and WASH). The variables were grouped in modules; an overview is presented in Table 2.1.

Table 2.1 Overview of variables, target group and district of the surveys

Module	Variables	Target group	District
Selection of the index child	Gender of the caregiver	Women	New districts
	Selection criteria	Children	Existing districts
Consent form		Women	New districts
			Existing districts
Information on Index child	Name of the child	Children	New districts
	Date of birth of the child		Existing districts
	Verification of date of birth		
	Sex of the child		
Details on the household and respondents	Age of the respondent	Women	New districts
	Household size and composition		Existing districts
	Education level of the respondent		
	Marital status of the respondent		
	Employment status of the respondent		
	Relationship between respondent and head household		
Diet of child 6-23 months	Meal frequency	Children	New districts
	Food groups consumed		
Diet of caregiver of reproductive age	Pregnancy status	Women	New districts
	Breastfeeding status		
	Food groups consumed		
Source of health and nutrition information	Source of information on nutrition	Women	New districts
	Knowledge on stunting		
	Attitude towards prevalence of stunting in the community		
Gender and intra-household decision making	Responsibility on food preparation	Women	New districts
	Decision on crop: sell or consume		
	Who receive the money from selling the crop		
	Decision on how to spend the income		
	Decision on food purchased		
	Type of food purchased		
Agro-biodiversity	Access to the land used for production	Women	New districts
	Responsibility over the land		
	Decision on the production: consume or sell		
	Type of crops produced		
	Ownership of livestock		
	Responsibility of livestock		
	Decision on use the livestock: consume or sell		
	Source of information on agriculture and livestock		
	Advice or support received on agriculture and livestock		
Household food security	Months of food shortage	Women	New districts
	Food Insecurity Experience Scale (FIES)		
Infant and young child feeding	Duration of breastfeeding	Women	New districts
	Early initiation of breastfeeding	Children	Existing districts
	Knowledge on the initiation of complementary feeding		
	Barriers to providing diverse complementary feeding		

Module	Variables	Target group	District
	Support received to feed the child		
Purchase and intra-household distribution of animal source food (ASF)	Intra-household distribution of ASF	Women	New districts
	Attitude towards intra-household distribution of ASF		Existing districts
	Purchase of ANS		
Water, Sanitation and Hygiene (WASH)	Knowledge on the spread of diarrhoea	Women	New districts
	Practice of handwashing		Existing districts
	Use and presence of facilities for handwashing		
	Knowledge on the importance of handwashing		
	Main source of water		
	Responsible for the collection of drinking water		
	Distance of the source of drinking water		
	Access and use of latrine		
	Type of latrine used		
	Location of defecation during the year		
Agro-biodiversity and market linkages	Access to the land used for production	Women	New districts
	Irrigation practices for vegetable cultivation		Existing districts
	Source of vegetable seeds		
	Knowledge on the importance of diverse production		
	Knowledge on the impact of diverse production on nutritional status		
	Distance to the main road		
	Distance to the market		
Anthropometry	Weight	Children	New districts
	Length		Existing district (Uganda)

2.5.3 24 hours recall

Data on dietary diversity of children and women was collected with 24h recall. The women were asked to mention all the foods and drinks consumed the previous 24 hours. All meals and snacks are reported but breastmilk. It is a very sensitive method because sometimes it is hard for the subject to remember the exact food provided to the child. Additionally, people might give socially desirable answers. To ensure accurate data collection, thorough training in the methodology was done for the enumerators.

2.5.4 Anthropometry

Anthropometric measurements for the baseline survey included weight and length taken two times each by nutritionists, immediately after the interview. Anthropometric measurements in Uganda were not only taken in the new district Kakumiro, but also in the existing districts Kasese and Kyenjojo. The rationale behind this was the lack of specific data on stunting because:

- During baseline 2015 different sub counties were included that those eventually targeted by the SN4A phase I project.
- The Uganda Demographic and Health Survey (UDHS) reports stunting rate only by region.

In both countries, a length/height board was used but a SECA weighting scale was used in Uganda whereas a salter scale was used in Zambia. These different tools were chosen for reason of comparison with baseline 2015. The majority of the times the children were weighted without clothes. If it was not the case, it was noted in the questionnaire.

2.6 Enumerators

Country teams of enumerators collected data. The enumerators were recruited locally and trained by WCDI and SNV. The enumerators, recruited for only the KAP module in the existing districts, were generally the same who were involved in data collection of the evaluation of phase I. New enumerators were recruited for data collection in the new districts. The team of enumerators also included nutritionists who were recruited to take the anthropometric measurements. The teams consisted of a supervisor (when possible), enumerators and nutritionists.

The training of the enumerators and data entry clerks adopted an interactive approach and the enumerators who were involved for phase I of the project were asked to share experience with the new enumerators and to help with the training. Both the enumerators and the supervisors appreciated this participatory approach. The training focused on the interview technique, anthropometric measurements, practice, and pre-test on field. WCDI and SN4A project team developed a day-by-day programme with the topics of the training (Appendix 3). A data collection and supervision manual was prepared by WCDI and shared with enumerators and supervisors.

2.7 Data entry

The data collected on field were entered in KOBOToolbox¹¹, an online data collection tool. The templates of the two surveys were developed by WCDI prior to data collection. The same software was used for the data collected at endline of phase I. Data entry was performed by local data entry clerks, who were trained by WCDI. In Zambia, data entry was done by a company called Open Office; whereas in Uganda a local information network called RICNET did it. Data entry started during the fieldwork in both countries.

2.8 Data quality assurance

To ensure data quality, some measurements were in place. During the training ample time was spent on the translation and interpretation of the questions. With the trainings, the enumerators could familiarize with the methods of data collection and the meaning of new concepts. When it was possible, the questionnaires were reviewed on the spot or within the same day by the supervisor or WCDI in order to be able to reach the respondent or the enumerator for clarification. Data entry started the day after the first day of collection to facilitate correction in case of mistakes in the template or in the hard copies. The anthropometry measurements were repeated twice to check for errors and the mean value was used for data analysis.

Anthropometric data was analysed using ENA for SMART 2011. The summary table for overall data quality of the district specific data sets can be found in Appendix 4. According to the SMART criteria¹², the quality of the anthropometric data was good/excellent, apart for Kasama Rural where the score for data quality was acceptable.

Extreme values, which were so abnormal that they are very unlikely to be correct, were excluded from the analysis. WHO recommended flags were applied, meaning that the ENA software detects and excludes observations with Z scores higher or lower than -5 to 5 for WHZ, HAZ -6 to 6 for HAZ, and -6 to 5 for WAZ. As a result, two cases were excluded in Kakumiro, 2 in Kyenjojo, 1 in Kasama Urban and 2 in Kasama Rural.

¹¹ KOBOToolbox available at: <http://www.kobotoolbox.org/>

¹² SMART, 2015. The SMART Plausibility Check for Anthropometry. Action against Hunger-Canada and Technical Advisory Group

2.9 Data analysis

Data analysis was done by WCDI using SPSS (SPSS version 23). The data were exported from Kobo into Excel and subsequently exported to SPSS. The database was cleaned for incomplete interviews and observations for which selection criteria were not met. The analysis was done in two different databases, one for baseline survey in the new districts and the other for KAP module in the existing districts. A descriptive analysis for each indicator was performed at district level. For calculating the DDS, WHO guidelines¹³ were used for children, whereas FANTA and FAO guidelines¹⁴ were used for DDS of women of reproductive age. Anthropometric analysis was performed with ENA software.

¹³ WHO, 2008. Indicators for assessing infant and young child feeding practices. Part 1 definitions. Conclusions of a consensus meeting held 6–8 November 2007 in Washington D.C., USA

¹⁴ FAO and FHI 360, 2016. Minimum Dietary Diversity for Women: A Guide for Measurement. Rome

3 Respondent and household characteristics

3.1 Characteristics baseline population

In the **new districts**, a total number of 605 respondents – mother or caregivers of children between 6-23 months – were included in the survey, 211 in Kakumiro, 203 in Kasama Urban and 191 in Kasama Rural (Table 3.1). The majority of the respondents were the mother of the index child, in Uganda 97.2% (n=205) in Kakumiro, in Zambia 93.6% (n=190) in Kasama Urban, 99.5% (n=192) in Kasama Rural.

The other most common relationship was grandmother (2.1%, n=13). The mean age of the respondents in the sample for the baseline was 27.0 (sd 7.8), ranging from 26.0 (sd 7.1) in Kasama Rural to 27.6 (sd 8.2) in Kasama Urban.

The findings from baseline survey show that 9.6% (n=58) of the respondents were the head of the household. Overall, the majority of the respondents were the spouse of the head of the household, 84.4% (=178) in Kakumiro (Uganda), 69.5% (n=141) in Kasama Urban, and 69.3% (n=158) in Kasama Rural (Zambia). Monogamous marriage was the most common marital status, (73.6%, n=445), 8.7% (n=53) of the respondents were in a polygamous marriage, 7.7% (n=47) were single or never married, and 4.8% (n=29) were divorced.

In the new districts, the majority of respondents were working on their own farm, 77.3% (n=163) in Kakumiro, and 49.7% (n=95) in Kasama Rural. In Kasama Urban the majority of respondents were homemaker (34.5%, n=70). The non-agriculture employments were mainly businesses such as hotel, restaurants, and saloons.

The highest education level achieved by the respondents ranged from no schooling to diplomas (other). In Uganda, in Kakumiro the majority of respondents finished lower (27.5%, n= 58) or upper primary education (44.5%, n=94). In Zambia, in Kasama Urban there was a more or less equal distribution of respondents with lower primary (26.6%, n=54) and upper primary education (28.1%, n= 57). Over a third had high school education (37.4%, n=76). In Kasama Rural the distribution was reversed, with a third of the respondents having lower primary education (34.0%, n= 65), and a more or less equal distribution of respondents having upper primary education (26.9%, n=52) or high school (26.4%, n=50).

The overall mean age of children was 12.9 months (sd 5.1) in the baseline, ranging from 12.7 (sd 5.3) in Kakumiro district to 13.2 (sd 5.1) in Kasama Urban. The baseline survey included 48.8% girls (n=296) and 51.2% boys (n=309).

The average household size was 5.7 (sd 2.4) members, ranging from 2 to 18 members. In Uganda, the average household size was 5.6 (sd 2.8). In Zambia the average household size was 5.9 (sd 2.1) in Kasama Urban, and 5.5 (sd 2.3) in Kasama Rural. The average number of children per household under 18 years of age was 3.2 (sd 2.0), ranging from 3.0 (1.8) in both areas in Kasama to 3.2 (sd 2.1) in Kakumiro.

Table 3.1 Respondents and households characteristics of new districts

	Uganda	Zambia		Overall
	Kakumiro	Kasama Urban	Kasama Rural	
<i>Total respondents, n</i>	<i>211</i>	<i>202</i>	<i>191</i>	<i>605</i>
Index child				
Age in months, mean (sd)	12.7 (5.3)	13.2 (5.1)	12.9 (4.9)	12.9 (5.1)
Range	(6-23)	(6-23)	(6-23)	(6-23)
Age groups, n (%)				
6 to 11 months	107 (50.7)	90 (44.3)	90 (47.1)	287 (47.3)
12 to 17 months	52 (24.6)	61 (30.0)	63 (33.0)	176 (29.2)
18 to 23 months	52 (24.6)	52 (25.6)	38 (19.9)	142 (23.6)
Sex, n (%)				
Girl	105 (49.8)	96 (47.3)	95 (49.7)	296 (48.8)
Boy	106 (50.2)	107 (52.7)	96 (50.3)	309 (51.2)
Respondents				
Age in years, mean (sd)	27.3 (8.1)	27.6 (8.2)	26.0 (7.1)	27.0 (7.8)
Range	(17-75)	(16-65)	(14-50)	(14-75)
Respondent HH head, n (%)	21 (10.0)	21 (10.3)	16 (8.3)	58 (9.6)
Relation to the HH head, n (%)				
Spouse	178 (84.4)	141 (69.5)	158 (69.3)	477 (78.9)
Mother	1 (0.5)	14 (6.9)	5 (2.6)	20 (3.3)
Daughter	7 (3.3)	20 (9.9)	9 (4.7)	36 (5.9)
Sister	2 (0.9)	-	1 (0.5)	3 (0.5)
Sister-in-law	1 (0.5)	3 (1.5)	-	4 (0.7)
Aunt	-	-	-	-
Niece/cousin	-	1 (0.5)	-	1 (0.2)
Other	1 (0.5)	2 (1.0)	2 (1.0)	5 (0.8)
Don't know	-	1 (0.5)	-	1 (0.2)
Relation to the index child, n (%)				
Mother	205 (97.2)	190 (93.6)	190 (99.5)	585 (96.7)
Sister	-	1 (0.5)	-	1 (0.2)
Grandmother	5 (2.4)	8 (3.9)	-	13 (2.1)
Auntie	-	1 (0.5)	-	1 (0.2)
Other	1 (0.5)	3 (1.5)	1 (0.5)	5 (0.8)
Educational level, n (%)				
No schooling	17 (8.1)	9 (4.4)	8 (4.1)	34 (5.6)
Lower primary	58 (27.5)	54 (26.6)	65 (34.0)	177 (29.3)
Upper primary	94 (44.5)	57 (28.1)	52 (26.9)	203 (33.4)
Ordinary level	26 (12.3)	7 (3.4)	9 (4.7)	42 (6.9)
High school	5 (2.4)	76 (37.4)	50 (26.4)	131 (21.7)
Unknown	3 (1.4)	-	1 (1.6)	4 (0.7)
Other	8 (3.8)	-	3 (1.6)	11 (1.8)
Not applicable	-	-	3 (1.6)	3 (0.5)
Employment status, n (%)				
Agriculture - own farm	163 (77.3)	24 (11.8)	95 (49.7)	282 (46.6)
Agriculture - wage labour	5 (2.4)	2 (1.0)	12 (6.2)	7 (1.2)
Non-agriculture	23 (10.9)	37 (18.2)	43 (22.8)	71 (11.9)
Business and trade	8 (3.8)	24 (11.8)	9 (4.7)	41 (6.8)
Education	1 (0.5)	-	3 (1.6)	4 (0.7)
Health	4 (1.9)	-	-	4 (0.7)
Homemaker	2 (0.9)	70 (34.5)	2 (1.0)	116 (19.1)
Student	1 (0.5)	13 (6.4)	35 (18.1)	16 (2.6)
Unemployed	3 (1.4)	52 (25.6)	4 (2.1)	90 (14.8)
Not applicable	14 (6.6)	3 (1.5)	4 (2.1)	21 (3.5)
Don't know	-	2 (1.0)	-	2 (0.3)
Marital status, n (%)				
Single/never married	8 (3.8)	30 (14.8)	9 (4.7)	47 (7.7)
Divorced	7 (3.3)	19 (9.4)	3 (1.6)	29 (4.8)
Separated (temporary)	7 (3.3)	3 (1.5)	6 (3.1)	16 (2.6)

	Uganda	Zambia		Overall
	Kakumiro	Kasama Urban	Kasama Rural	
<i>Total respondents, n</i>	<i>211</i>	<i>202</i>	<i>191</i>	<i>605</i>
Spouse migrated for work	2 (0.9)	2 (1.0)	2 (1.0)	6 (1.0)
Widowed	3 (1.4)	4 (2.0)	2 (1.0)	9 (1.5)
Marriage, monogamous	141 (66.8)	138 (68.0)	166 (87.0)	445 (73.6)
Marriage, polygamous	43 (20.4)	7 (3.4)	3 (1.6)	53 (8.7)
Not applicable	-	-	-	-
Household				
Household size, mean (sd)	5.6 (2.8)	5.9 (2.1)	5.5 (2.3)	5.7 (2.4)
Range	(2-18)	(3-12)	(2-12)	(2-18)
Children <18y, mean (sd)	3.2 (2.1)	3.0 (1.9)	3.0 (1.8)	3.1 (2.0)
Range	(1-16)	(1-18)	(1-8)	(1-18)

3.2 Characteristics of the KAP survey population

For the KAP survey, conducted in the **existing districts**, a total number of 803 respondents were included: 206 in Kasese, 212 in Kyenjojo, 165 in Isoka and 220 in Chinsali (Table 3.2). The majority of the respondents were the mother of the index child, in Uganda 96.6% (n=199) in Kasese, and 93.4% (n=198) in Kyenjojo, in Zambia 98.8% (n=163) in Isoka, and 97.7% (n=215) in Chinsali. Other relationships were grandmothers (1.7%, n=14), sisters (1.2%, n=10), and aunts (0.4%, n=3). The mean age of the respondents was 27.4 (sd 7.8), ranging from a mean age of 26.8 (sd 6.8) in Kasese to 28.0 (sd 8.6) in Chinsali.

Overall 6.1% (n=49) of the respondents in existing districts were the head of the household. The majority of the respondents were the spouse of the head of the household, 80.1% (n=165) in Kasese, 80.7% (n=171) in Kyenjojo, 90.9% (n=150) in Isoka, and 88.2% (n=194) in Chinsali. Monogamous marriage was the most common family formation (74.2%, n=596), 12.2% (n=98) of the respondents were married polygamously, 5.6% (n=45) were single or never married and 4.2% (n=34) were divorced.

In the existing districts, the main occupation of the respondents was working on their own farm. In Uganda, the percentage was 73.8% (n=152) in Kasese, 76.9% (n=163) in Kyenjojo. In Zambia, the percentage was 95.8% (n=158) in Isoka, 98.6% (n=217) in Chinsali. The non-agriculture employments were mainly in businesses such as tailors, retailers and hairdresser (business and trade).

Regarding the highest educational level, the majority of the respondent had an upper primary education (overall 38.5%, n=308), specifically 35.0% (n=72) in Kasese, 46.2% (n=98) in Kyenjojo (Uganda), and 36.4% (n=60) in Isoka, and 35.5% (n=78) in Chinsali (Zambia).

The overall mean age of children was 13.3 months (sd 5.1), ranging from a mean age 12.9 months (sd 5.2) in Kyenjojo (Uganda) and Chinsali (Zambia) districts to 14.0 months (sd 4.9) in Kasese district (Uganda). The survey included 51.1% girls (n=410) and 48.9% boys (n=393).

The average household size was 6.0 (sd 2.4) members, ranging from 2 to 16 members. In Uganda, the average household size was 6.3 (sd 2.5) in Kasese, and 6.2 (sd 2.6) in Kyenjojo. In Zambia, the average household size was 6.0 (sd 2.4) in Isoka, and 5.5 (sd 2.1) in Chinsali. The average number of children under 18 years of age per household was 3.4 (sd 1.9), ranging from an average of 3.1 (sd 1.8) in Chinsali to 3.5 (sd 2.0) in both Kasese and Kyenjojo.

Table 3.2 Respondents and households characteristics of existing districts

	Uganda		Zambia		Overall
	Kasese	Kyenjojo	Isoka	Chinsali	
<i>Total respondents, n</i>	206	212	165	220	803
Index child					
Age in months, mean (sd)	14.0 (4.9)	12.9 (5.0)	13.4 (5.3)	12.9 (5.2)	13.3 (5.1)
Range	(6-23)	(6-23)	(6-23)	(6-23)	(6-23)
Age groups, n (%)					
6 to 11 months	73 (35.4)	95 (44.8)	71 (43.0)	102 (46.4)	341 (42.5)
12 to 17 months	77 (37.4)	65 (30.7)	51 (30.9)	66 (30.0)	259 (32.3)
18 to 23 months	56 (27.2)	52 (24.5)	43 (26.1)	52 (23.6)	203 (25.3)
Sex, n (%)					
Girl	107 (51.9)	113 (53.3)	78 (47.3)	112 (50.9)	410 (51.1)
Boy	99 (48.1)	99 (46.7)	87 (52.7)	108 (49.1)	393 (48.9)
Respondents					
Age in years, mean (sd)	26.8 (6.8)	27.4 (7.9)	27.4 (7.8)	28.0 (8.6)	27.4 (7.8)
Range	(13-46)	(11-70)	(17-72)	(14-70)	(11-72)
Respondent HH head, n (%)	5 (2.4)	16 (7.5)	10 (6.1)	18 (8.2)	49 (6.1)
Relation to the HH head, n (%)					
Spouse	165 (80.1)	171 (80.7)	150 (90.9)	194 (88.2)	680 (84.7)
Mother	9 (4.4)	5 (2.4)	1 (0.6)	6 (2.7)	21 (2.6)
Daughter	12 (5.8)	9 (4.2)	4 (2.4)	1 (0.5)	26 (3.2)
Sister	-	1 (0.5)	-	-	1 (0.1)
Sister-in-law	2 (1.0)	-	-	-	2 (0.2)
Auntie	-	3 (1.4)	-	-	3 (0.4)
Niece/cousin	1 (0.5)	3 (1.4)	-	-	4 (0.5)
Other	12 (5.8)	4 (1.9)	-	1 (0.5)	17 (2.1)
Relation to the index child, n (%)					
Mother	199 (96.6)	198 (93.4)	163 (98.8)	215 (97.7)	775 (96.5)
Sister	5 (2.4)	4 (1.9)	1 (0.1)	-	10 (1.2)
Grandmother	1 (0.5)	7 (3.3)	1 (0.1)	5 (2.3)	14 (1.7)
Auntie	1 (0.5)	2 (0.9)	-	-	3 (0.4)
Other	-	1 (0.5)	-	-	1 (0.1)
Educational level, n (%)					
No schooling	20 (9.7)	29 (13.7)	30 (18.2)	20 (9.1)	99 (12.3)
Lower primary	53 (25.7)	42 (19.8)	48 (29.1)	102 (46.4)	245 (30.5)
Upper primary	72 (35.0)	98 (46.2)	60 (36.4)	78 (35.5)	308 (38.5)
Ordinary level	54 (26.2)	41 (19.3)	4 (2.4)	6 (2.7)	105 (13.1)
High school	5 (2.4)	2 (0.9)	22 (13.3)	13 (5.9)	42 (5.2)
Unknown	-	-	1 (0.6)	1 (0.5)	2 (0.2)
Other	2 (1.0)	-	-	-	2 (0.2)
Employment status, n (%)					
Agriculture - own farm	152 (73.8)	163 (76.9)	158 (95.8)	217 (98.6)	690 (85.9)
Agriculture - wage labour	4 (1.9)	5 (2.4)	-	-	9 (1.1)
Non-agriculture	23 (11.2)	16 (7.5)	-	1 (0.5)	40 (5.0)
Business and trade	20 (9.7)	13 (6.1)	-	1 (0.5)	34 (4.2)
Education	2 (1.0)	1 (0.5)	-	-	3 (0.4)
Health	1 (0.5)	1 (0.5)	-	-	2 (0.2)
Homemaker	7 (3.4)	10 (4.7)	3 (1.8)	1 (0.5)	21 (2.6)
Student	8 (3.9)	6 (2.8)	-	1 (0.5)	15 (1.9)
Unemployed	12 (5.8)	12 (5.7)	4 (2.4)	-	28 (3.5)
Marital status, n (%)					
Single/never married	17 (8.3)	24 (11.3)	2 (1.2)	2 (0.9)	45 (5.6)
Divorced	10 (4.9)	6 (2.8)	7 (4.2)	11 (5.0)	34 (4.2)
Separated (temporary)	4 (1.9)	6 (2.8)	1 (0.6)	2 (0.9)	13 (1.6)
Spouse migrated for work	-	1 (0.5)	-	1 (0.5)	2 (0.2)
Widowed	1 (0.5)	4 (1.9)	4 (2.4)	4 (1.8)	13 (1.6)
Marriage, monogamous	144 (69.9)	146 (68.9)	128 (77.6)	178 (80.9)	596 (74.2)
Marriage, polygamous	29 (14.1)	24 (11.3)	23 (13.9)	22 (10.0)	98 (12.2)

	Uganda		Zambia		Overall
	Kasese	Kyenjojo	Isoka	Chinsali	
<i>Total respondents, n</i>	206	212	165	220	803
Not applicable	1 (0.5)	1 (0.5)	-	-	2 (0.2)
Household					
Household size, mean (sd)	6.3 (2.5)	6.2 (2.6)	6.0 (2.4)	5.5 (2.1)	6 (2.4)
Range	(3-15)	(2-16)	(3-13)	(2-15)	(2-16)
Children <18y, mean (sd)	3.5 (2.0)	3.5 (2.0)	3.4 (1.9)	3.1 (1-8)	3.4 (1.9)
Range	(1-9)	(1-10)	(1-11)	(1-8)	(1-11)

In comparison: in the new SN4A phase II districts, less respondents work on their own farm than in the existing districts. In particular, in Kasama Urban, the majority of the women were homemakers or involved in businesses. Another major difference between the two sample groups was the highest level of education. Many more women in the new districts went to high school, while in the existing districts reported upper primary school as highest level of education.

4 Key findings outcome level

The overall goals of SN4A phase II project are to improve nutrition outcomes, increase access to nutritious crops and women's decision making about nutrition, and improved hygiene practises. The primary outcomes indicators for the goals of SN4A phase II are:

- **Improved nutrition:** Stunting prevalence (LAZ scores), Percentage of children with Minimum Acceptable Diet (MAD), Percentage of children with infant dietary diversity score (IDDS) >4, percentage of woman of reproductive ages with dietary diversity score (WDDS) >5
- **Increased access to nutritious crops:** agro-biodiversity score (crop diversity, livestock diversity, farm diversity).
- **Improved hygiene practices:** prevalence of diarrhoea among children 6-23 months in the past 2 weeks.
- **Increased women' decision-making about nutrition:** Change on this outcome area will be assessed with as set of questions on decision making around food preparation, food purchase, use of income and intra-household distribution of food (reported under 6.1 and 6.2).

4.1 Nutrition and Diet

4.1.1 Children nutritional status

New districts

The nutritional status of children 6-23 months was assessed by LAZ scores, as indicator of chronic malnutrition, WLZ scores, as indicator of acute malnutrition and WAZ scores for underweight.

In Uganda, the following results (Table 4.1) are representative for only one sub-county of the districts, therefore cannot be generalised neither to the district nor to the country. In Kakumiro 32.7% (n=68) of the children were stunted, in Zambia, 35.8% (n=72) of the children in Kasama Urban and 36.5% (n=69) in Kasama Rural. The majority of the chronically malnourished children in all districts were moderately chronically malnourished.

In Uganda, the prevalence of wasting was 3.9% (n=8). All of them presented moderate wasting. In Zambia, 1.0% (n=2) of the children were moderately wasted in Kasama Urban, and 2.6% (n=5) in Kasama Rural. The prevalence of underweight was 14.4% (n=30) in Kakumiro, and 12.9% (n= 26) in Kasama Urban, 8.9% (n=17) in Kasama Rural.

Table 4.1 Prevalence of malnutrition in new districts

<i>n</i>	Uganda	Zambia	
	Kakumiro 211	Kasama Urban 202	Kasama Rural 191
Stunting, n (%)			
Overall	68 (32.7)	72 (35.8)	69 (36.5)
Severe	24 (11.5)	29 (14.4)	20 (10.6)
Moderate	44 (21.2)	43 (21.4)	49 (25.9)
Wasting, n (%)			
Overall	8 (3.9)	2 (1.0)	5 (2.6)
Severe	-	-	-
Moderate	8 (3.9)	2 (1.0)	5 (2.6)
Underweight, n (%)			
Overall	30 (14.2)	26 (12.9)	17 (8.9)
Severe	12 (5.7)	5 (2.5)	4 (2.1)
Moderate	18 (8.5)	21 (10.4)	13 (6.8)

Existing districts

In addition to the KAP module, anthropometric measurements were also taken in the existing districts Kasese and Kyenjojo. A larger proportion of children were stunted in Kasese, 46.3% (n=95), compared to 25.9% (n=53) in Kyenjojo. The prevalence of acute malnutrition (wasting) was 3.4% (n=7) in Kasese, and 4.3% (n=9) in Kyenjojo. In Kyenjojo, two of the cases of wasting, were severely wasted. In Kasese, 16.1% (n=33) of the children were found to be underweight, and 10.0% (n=21) in Kyenjojo (Table 4.2).

Table 4.2 Prevalence of malnutrition in existing districts

<i>n</i>	Uganda	
	Kasese 205	Kyenjojo 209
Stunting, n (%)		
Overall	95 (46.3)	53 (25.9)
Severe	30 (14.6)	18 (8.8)
Moderate	65 (31.7)	35 (17.1)
Wasting, n (%)		
Overall	7 (3.4)	9 (4.3)
Severe	-	2 (1.0)
Moderate	7 (3.4)	7 (3.4)
Underweight, n (%)		
Overall	33 (16.1)	21 (10.0)
Severe	4 (2.0)	8 (3.8)
Moderate	29 (14.1)	13 (6.2)

4.1.2 Child dietary diversity score

New districts

The infant dietary diversity score (IDDS) was based on the 24h-recall, and on the 7 food groups (Table 4.3). Dietary diversity is a proxy for adequate micronutrient-density of foods. The food groups are 1. Grains, roots and tubers; 2. Legumes and nuts; 3. Dairy products; 4. Flesh foods; 5. Eggs; 6. Vitamin-A rich fruits and vegetables; 7. Other fruits and vegetables. The mean IDDS is 3.7 (sd 1.1) in Kakumiro, 3.7 (sd 1.2) in Kasama Urban, and 3.8 (sd 1.3) in Kasama Rural.

In order to calculate the proportion of children meeting Minimum Dietary Diversity (MDD), a mean IDDS of 4 was used as benchmark for adequacy. In Kakumiro, the prevalence of children with an IDDS of less than 4 was 42.2% (n=89); in Kasama Urban was 38.1% (n=77); and in Kasama Rural was 35.1% (n=67). There was no large difference in adequacy between girls and boys in Kakumiro, whereas in Zambia in Kasama Urban more boys had an inadequate IDDS (40.2%, n=43) and in Kasama Rural more girls (40.0%, n=38).

Table 4.3 Mean IDDS per sex, age categories, IDDS inadequacy and consumption of specific food groups in new districts

	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
<i>Total respondents, n</i>	<i>211</i>	<i>202</i>	<i>191</i>
IDDS, mean (sd)			
Overall	3.7 (1.1)	3.7 (1.2)	3.8 (1.3)
Range	(0-6)	(0-6)	(0-7)
Sex			
Girls	3.7 (1.1)	3.8 (1.1)	3.6 (1.4)
Boys	3.7 (1.1)	3.7 (1.2)	3.9 (1.2)
Age groups			
6 to 11 months	3.5 (1.1)	3.6 (1.2)	3.4 (1.4)
12 to 17 months	3.7 (1.1)	3.9 (1.1)	4.1 (1.2)
18 to 23 months	4.0 (1.0)	3.7 (1.1)	3.9 (1.0)
IDDS inadequacy (<4), n (%)			
Overall	89 (42.2)	77 (38.1)	67 (35.1)
Sex			
Girl	45 (42.9)	34 (35.8)	38 (40.0)
Boy	44 (41.5)	43 (40.2)	29 (30.2)
Food groups, n (%)			
Grains, tubers and roots	207 (98.1)	200 (99.0)	185 (96.9)
Legumes, nuts and seeds	182 (86.3)	94 (46.5)	123 (64.4)
Milk and dairy products	62 (29.4)	37 (18.3)	31 (16.2)
Meat and fish	59 (28.0)	111 (55.0)	88 (46.1)
Eggs	8 (3.8)	26 (12.9)	23 (12.0)
Vitamin-A rich foods	105 (49.8)	131 (64.9)	132 (69.1)
Other fruits and vegetables	156 (73.9)	158 (78.2)	138 (72.3)

Food groups consumed, divided by districts, are showed in Figure 4.1. In all districts, two food groups least consumed were eggs, and milk and dairy products, with egg consumption ranging from 3.8% in Kakumiro to 12.9% in Kasama Urban, and milk and dairy product consumption from 16.2% in Kasama Rural to 29.4% in Kakumiro. In both countries, and in all districts, grains, tubers and roots were consumed by the highest percentage of children, ranging from 99.0% in Kasama Urban to 96.9% in Kasama Rural. The highest consumption of legumes (86.3%, n=182) was observed in Kakumiro district. In Kasama Urban 55.0% (n=111) of the children consumed flesh food (meat and fish). Consumption of other fruits and vegetables is also relatively high in all districts, 73.9% (n=156) in Kakumiro, 78.2% (n=158) in Kasama Urban, and 72.3% (n=138) in Kasama Rural. The consumption of Vitamin-A rich foods (fruits and vegetables) was lowest (49%, n=105) in Kakumiro, 64.9% (n=131) in Kasama Urban, and 72.3% (n=138) in Kasama Rural.

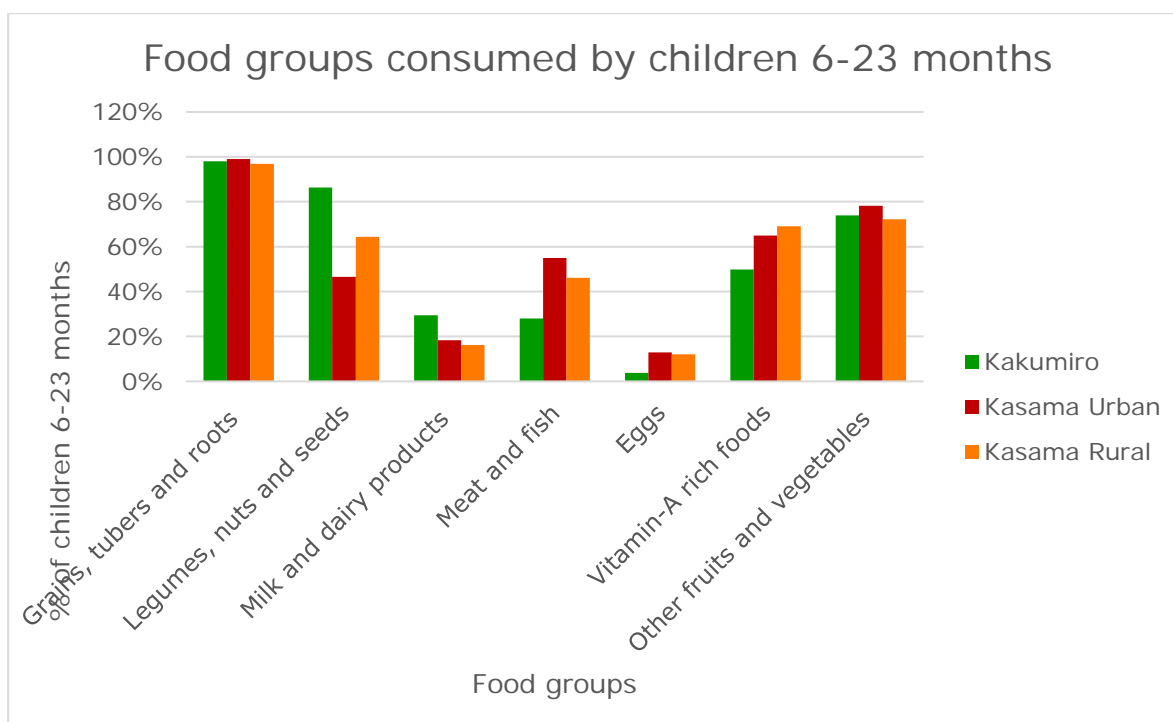


Figure 4.1 Food groups consumed by children aged 6 to 23 months in the new districts

Minimum meal frequency (MMF) is a proxy of energy intake from food other than breast milk. In order to calculate the proportion of children meeting the minimum meal frequency, the definition of the indicator from UNICEF was used: "proportion of breastfed and non-breastfed children 6-23 months of age, who received solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more". The minimum number of meals is defined as:

- 2 meals per day for breastfed children 6-8 months;
- 3 meals per day for breastfed children 9-23 months;
- 4 meals for non-breastfed children 6-23 months.

The term "meals" refers to both meal and snacks and the frequency is based on the question how many meals were consumed by the child the previous day.

The findings are reported by age groups and breastfed and non-breastfed children (Table 4.4). Overall, compliance to recommended minimum meal frequency is more common among breastfed children than compliance among non-breastfed children in all districts (Figure 4.2). In Kakumiro, around 80% of breastfed children in each age group had a minimum meal frequency; while in Zambia the percentage fluctuate more across the age groups. Among non-breastfed children, the findings show that around 60% of the children in Kakumiro, 40% in Kasama Urban, and 25% in Kasama Rural had a minimum meal frequency. There are not large differences across the age groups.

Table 4.4 Minimum Meal Frequency breastfed and non-breastfed children in new districts by age groups

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
Adequate minimum meal frequency, n (%)	162 (76.8)	116 (57.4)	116 (60.7)
N	159	131	165
Adequate minimum meal frequency in breastfed children, n (%)	133 (83.6)	91 (69.5)	108 (65.5)
N	52	71	26
Adequate minimum meal frequency in non-breastfed children, n (%)	29 (55.8)	25 (35.2)	8 (30.8)

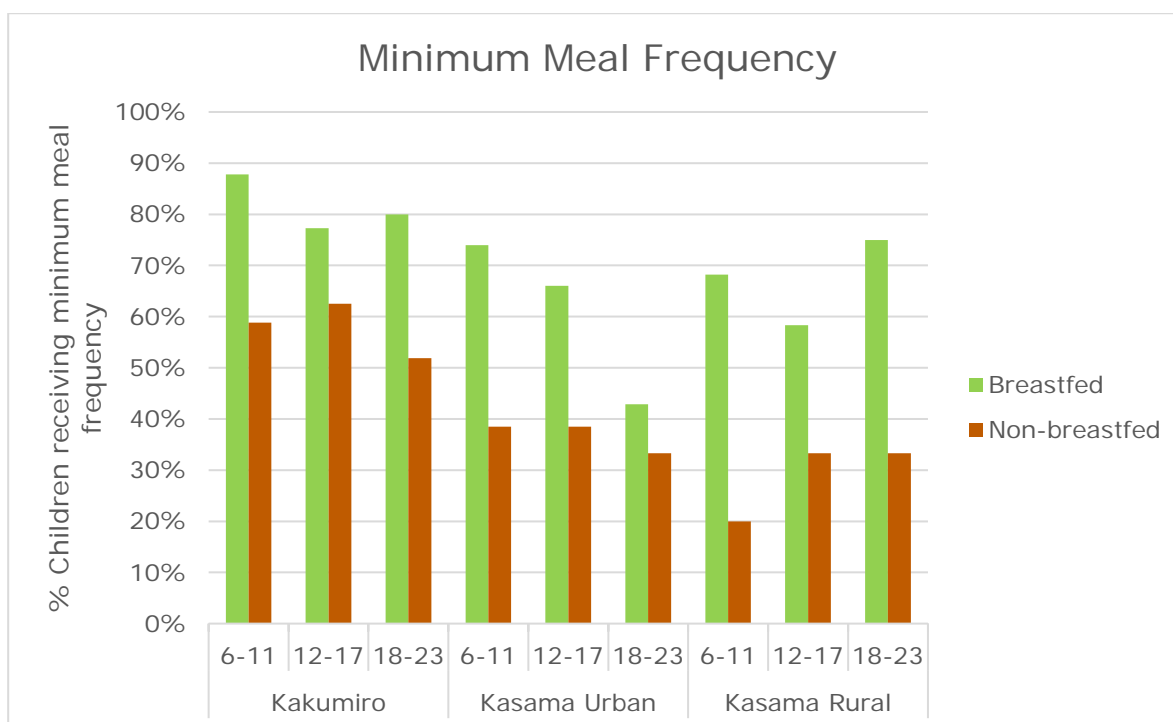


Figure 4.2 Prevalence of minimum meal frequency of breastfed and non-breastfed children by age category in months, in new districts

Minimum Acceptable diet (MAD) is a composite indicator calculated as the proportion of breastfed children 6-23 months of age who had at least the minimum dietary diversity and the minimum meal frequency on the previous day. For the baseline survey, it was not possible to calculate the minimum acceptable diet for non-breastfed children because the number of (non-breast) milk feedings was not reported.

The findings show percentages of 50% or lower of breastfed children with a minimum acceptable diet across all districts until the age group 18 to 23 months. Around 40-46% of the children from 6-11 months of age had a minimum acceptable diet in all three districts. Among children from 12 to 17 months of age, the percentages ranged from 40.0% in Kasama Rural (lowest), 50% in Kakumiro, to 55.3% in Kasama Urban. For age group 18-23 months however, Kasama Urban showed a much lower percentage of minimum acceptable diet compared to the other districts. In addition, a very low prevalence of children was still being breastfed (Table 4.5).

Table 4.5 Minimum Acceptable Diet in breastfed children by age groups in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	159	131	165
Minimum Acceptable Diet in breastfed children, n (%)	78 (49.1)	61 (46.6)	76 (46.1)
6 to 11 months	40 (44.4)	33 (42.9)	39 (45.9)
12 to 17 months	22 (50.0)	26 (55.3)	24 (40.0)
18 to 23 months	16 (64.0)	2 (28.6)	13 (65.0)

4.1.3 Women dietary diversity score

New districts

The woman dietary diversity score (WDDS) was based on the 24h-recall, and on the 10 food groups (Table 4.6). Only respondents of reproductive age (15 to 49 years) were included in the analysis. The food groups are 1. Grains, roots and tubers; 2. Legumes and nuts; 3. Dairy products; 4. Flesh foods (meat and fish); 5. Organ meat; 6. Eggs; 7. Vitamin-A rich fruits and vegetables; 8. Dark green leafy vegetables; 9. Other fruits; 10. Other vegetables. The mean WDDS is 3.9 (sd 1.2) in Kakumiro, 3.9 (sd 1.3) in Kasama Urban, and 4.2 (sd 1.3) in Kasama Rural.

In order to calculate the percentage of women achieving Minimum Dietary Diversity for Women (MDD-W), a mean WDDS of 5 was used as benchmark for adequacy. In Kakumiro, the prevalence of women consuming less than 5 was 68.1% (n=141); in Kasama Urban 69.1% (n=137); and in Kasama Rural 62.8% (n=120). In all districts, the majority of the women were breastfeeding.

Table 4.6 Mean WDDS, WDDS inadequacy and consumption of specific food groups in new districts

	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
<i>Total respondents, n</i>	<i>207</i>	<i>198</i>	<i>191</i>
WDDS, mean (sd)			
Overall	3.9 (1.2)	3.9 (1.3)	4.2 (1.3)
Range	(1-8)	(1-9)	(1-8)
WDDS inadequacy (<5), n (%)	141 (68.1)	137 (69.2)	120 (62.8)
Food groups, n (%)			
Grains, tubers and roots	206 (99.5)	196 (99.0)	191 (100.0)
Legumes, nuts and seeds	191 (92.3)	78 (39.4)	120 (62.8)
Milk and dairy products	40 (19.3)	14 (7.1)	9 (4.7)
Meat and fish	57 (27.5)	111 (56.1)	97 (50.8)
Organ meat	1 (0.5)	2 (1.0)	2 (1.0)
Eggs	6 (2.9)	17 (8.6)	22 (11.5)
Vitamin-A rich foods	73 (35.3)	47 (23.7)	54 (28.3)
Dark green leafy vegetables	26 (12.6)	137 (69.2)	136 (71.2)
Other fruits	55 (26.6)	18 (9.1)	19 (9.9)
Other vegetables	144 (69.6)	157 (79.3)	155 (81.2)
Women pregnant, n (%)			
No	184 (88.9)	196 (99.0)	184 (96.3)
Yes	20 (9.7)	2 (1.0)	7 (3.7)
Don't know	3 (1.4)	-	-
Women breastfeeding, n (%)			
No	48 (23.2)	70 (35.4)	24 (12.6)
Yes	159 (76.8)	128 (64.6)	167 (87.4)

Consumption of the specific food groups by districts is showed in Figure 4.3. In all districts, lowest consumption was observed for the food groups organ meat, (ranging from 0.5% in Kakumiro to 1.0% in Kasama Urban and Rural), and eggs (ranging from 2.8% in Kakumiro to 11.5% in Kasama Rural). The findings show a low consumption of milk and dairy products and other fruits in both districts in Zambia. In both countries, and in all districts, grains, tubers and roots was the food group most commonly consumed among the WRA in this study, ranging from 100% in Kasama Rural to 99.0% in Kakumiro. The highest consumption of legumes (92.3%, n=191) was found in Kakumiro district. In Kasama Urban 69.2% (n=137) and in Kasama Rural 71.2% (n=136) of the women consumed dark green leafy vegetables, compared to only 12.6% (=22) in Kakumiro in Uganda. Consumption of other vegetables is also relatively high in all districts, 69.6% (n=144) in Kakumiro, 79.3% (n=157) in Kasama Urban, and 81.2% (n=155) in Kasama Rural. Roughly, half the respondents in in Zambia, but less in Uganda reported meat and fish consumption.

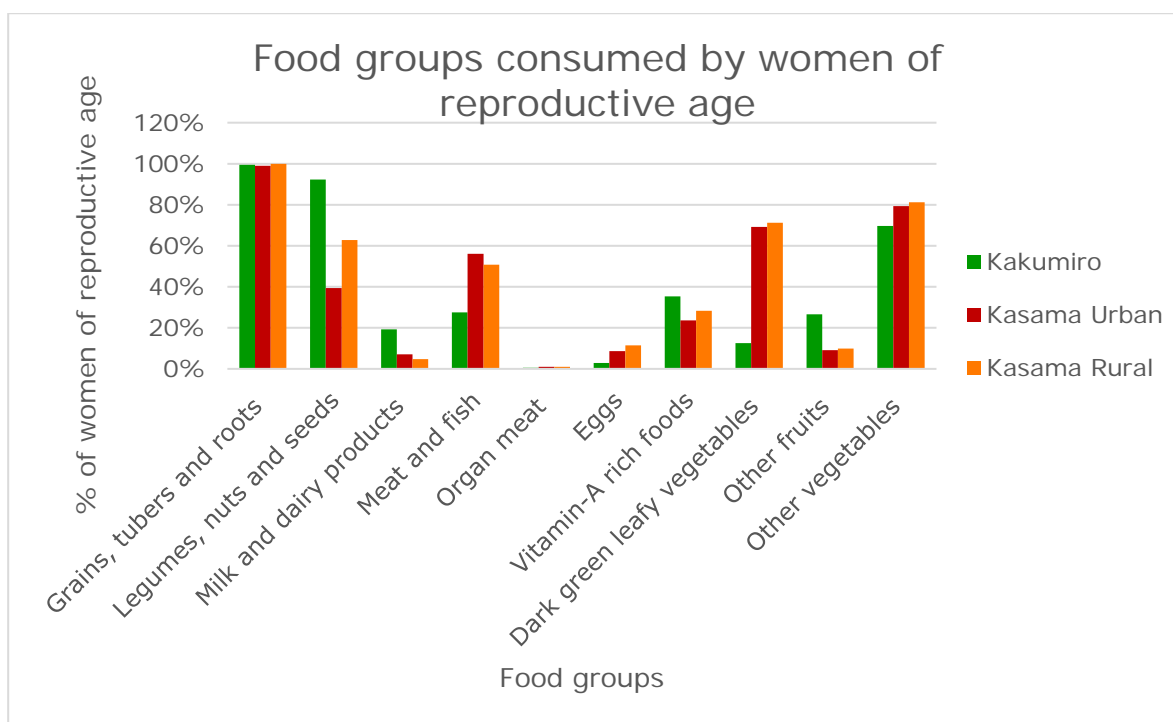


Figure 4.3 Food groups consumed by women of reproductive age.

Seasonality might be an underlying factor of the results. For instance in Uganda the mango and the beans season might have contributed to the high prevalence of legumes and Vitamin-A rich foods consumed by both children and women.

New districts

The prevalence of diarrhoea among children 6-23 months of age was based on the question whether the child suffered from diarrhoea in the two weeks prior to the survey. The findings show that 42.7% (n=90) of the children had diarrhoea in Kakumiro, 42.1% (n=85) in Kasama Urban, and 34.0% (n=65) in Kasama Rural (Table 4.7).

Table 4.7 Prevalence of diarrhoea in new districts

	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
<i>N</i>	211	202	191
Child had diarrhoea in the last two weeks, n (%)	90 (42.7)	85 (42.1)	65 (34.0)

Existing districts

Table 4.8 reports the findings on the number of children 6-23 months in the existing districts who had diarrhoea in the two weeks before the survey. The respondents reported that 31.6% (n=65) of the children in Kasese had diarrhoea, 28.8% (n=61) in Kyenjojo, 44.2% (n=73) in Isoka and 35.9% (n=79) in Chinsali.

Table 4.8 Prevalence of diarrhoea in existing districts

<i>N</i>	Uganda		Zambia	
	Kasese	Kyenjojo	Isoka	Chinsali
	206	212	164	220
Child had diarrhoea in the last two weeks. n (%)	65 (31.6)	61 (28.8)	73 (44.2)	79 (35.9)

4.2 Agrobiodiversity

New districts

Based on the number of crops produced and livestock owned by the households, the overall diversity in farm production was calculated (Table 4.9). Crop diversity is the measure for the overall number of different types of crops produced per HH and it is calculated by the sum of counts of total number of different agricultural species (food and cash crops) per household. Similarly, livestock diversity is based on the counts of total numbers of different livestock species per household. Farm diversity is the sum of crop diversity and livestock diversity per HH.

The mean crop diversity is 4.3 (sd 3.6) in Kakumiro and similarly 4.2 (sd 2.7) in Kasama Rural. It is lower, 2.0 (sd 2.4) in Kasama Urban and it can be explained by the urban context of the district. The crops most grown are staples and legumes, nuts and seeds. A small number of households reported to own livestock, ranging from a mean of 0.4 (sd 0.7) in Kasama Urban to 0.9 (sd 0.8) in Kasama Rural. Therefore the average farm diversity is 5.5 (sd 4.3) in Kakumiro, 2.4 (sd 2.7) in Kasama Urban, and 5.2 (sd 2.9) in Kasama Rural.

Table 4.9 *Agrobiodiversity: agricultural and livestock diversity in the new districts*

	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
<i>N</i>	211	202	191
Agricultural diversity, mean (sd)			
Vegetables	0.5 (1.1)	0.7 (1.2)	0.7 (1.3)
Fruits	0.3 (0.8)	0.04 (0.3)	0.1 (0.4)
Nuts/legumes/seeds	1.1 (0.9)	0.5 (0.8)	1.5 (1.0)
Staples	2.3 (1.7)	0.8 (1.0)	1.9 (1.3)
Cash crops	0.1 (0.3)	0.0 (0.0)	0.0 (0.0)
Crop diversity, mean (sd)	4.3 (3.6)	2.0 (2.4)	4.2 (2.7)
Livestock diversity, mean (sd)	1.2 (1.2)	0.4 (0.7)	0.9 (0.8)
Farm diversity, mean (sd)	5.5 (4.3)	2.4 (2.7)	5.2 (2.9)

The cash crops reported were maize, coffee and eucalyptus. Maize was included and analysed in the group “staples” to be aligned with the classification used in SN4all phase I endline (2017). This can explain the low values for average of cash crops grown reported (Table 4.9).

5 Results Pillar 1: Triggering and maintaining demand for intra-household dietary diversity and improved hygiene at scale

In Pillar 1, the objectives of SN4A phase II are to:

- strengthen local governance capacity to trigger and maintain intra-household demand, including integration of relevant aspects of WASH;
- trigger and maintain household and individual awareness of their nutrition situation and relevant practices;
- strengthen capacity and support community nutrition champions and nutrition actions groups to support demand maintenance.

In the *new districts*, SN4A will start with demand creation for food production and consumption at community level. This will involve stimulating awareness on stunting, diet diversity and hygiene practices through triggering “tools” and exploring the best model to reach out to households. In Zambia, this may or may not be through establishing Nutrition action groups (NAG) in the community. Afterwards, post-triggering activities and capacity building at district level will support the demand maintenance.

In the *existing districts*, the focus will be on maintaining the demand and support the structures to become sustainable. There will be integration of the importance of improved hygiene and sanitation practices for nutrition outcomes. This will be supported by post-triggering activities at community level.

In order to inform these triggering sessions, respondents’ knowledge on the causes and consequences of chronic malnutrition was assessed, plus their perception of the problem.

5.1 Knowledge on stunting

New districts

Table 5.1 shows the findings on knowledge about the meaning, causes, prevention and impact of stunting. In Uganda, 22.3% (n=47) of the respondents indicated that they did not know what stunting is or means. In Zambia, 32.7% (n=66) of the respondents in Kasama Urban and 47.1% (n=90) of the respondents in Kasama Rural reported to not know what the term stunting means.

Among the respondents who knew the meaning of stunting, the most frequently reported consequence of stunting is that the child is short for its age, specifically 53.0% (n=87) in Kakumiro, 88.9% (n=120) in Kasama Urban, and 91.1% (n=92) in Kasama Rural. In Kakumiro many respondents reported that inactivity and susceptibility to illness of the child as two other consequences of stunting (43.3%, n=71; and 29.9%, n=49). Among *other consequences*, the change of the hair colour and/or skin and swollen stomach were reported, mainly in Kakumiro.

The findings show that the majority of the respondents reported that not consuming diverse food is a cause of stunting: 55.5% (n=91) in Kakumiro, 48.9% (n=66) in Kasama Urban and 53.5% (n=54) in Kasama Rural. This was followed by not consuming enough food, and lack of knowledge on balanced, diverse and nutritious diet. Among the other causes, the ones most frequently mentioned were excessive work carrying heavy stuff, eating cold food, eating too much food, and genetics.

In all districts the majority of the respondents reported that to prevent stunting is important consume more diverse food: 54.3% (n=89) in Kakumiro, 61.5% (n=83) in Kasama Urban, and 66.3% (n=67)

in Kasama Rural. Other answers frequently reported on the prevention of stunting were the increase of meal frequency, 33.5% (n=55) in Kakumiro, 20.7% (n=28) in Kasama Urban, and 21.8% (n=22) in Kasama Rural, and taking the child to the doctor when sick only in Kakumiro (23.8%, n=39).

Interestingly, few respondents made the link between stunting and WASH and illness/infections, either in terms of a cause of stunting or following good practices such as using a toilet and washing hands at critical times. Overall, about half of the respondents thought that stunting has an impact on the community, specifically 53.6% (n=113) in Kakumiro, 54% (n=109) in Kasama Urban, and 42.4% (n=81) in Kasama Rural.

Table 5.1 Knowledge on understanding, causes, prevention, and impact of stunting in new districts

	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
<i>N</i>	211	202	191
Knowledge on "stunting" meaning, n (%)			
No	47 (22.3)	66 (32.7)	90 (47.1)
Yes	164 (77.7)	135 (66.8)	101 (52.9)
<i>N</i>	164	135	101
Knowledge on consequences of stunting, n (%)			
Child is short for its age	87 (53.0)	120 (88.9)	92 (91.1)
The child's brain is not developing at its full potential	15 (9.1)	5 (2.5)	3 (3.0)
Child is less active and less cheerful	71 (43.3)	5 (3.7)	6 (5.9)
Child is more prone to illness	49 (29.9)	17 (12.6)	13 (12.9)
Child may perform poorly in school	2 (1.2)	4 (3.0)	1 (1.0)
Other	38 (23.2)	2 (1.5)	1 (1.0)
Don't know	5 (3.0)	5 (3.7)	1 (1.0)
Knowledge on causes of stunting, n (%)			
Unclean water, poor sanitation and hygiene	29 (17.7)	1 (0.7)	-
Frequent illness and infections	23 (14.0)	6 (4.4)	2 (2.0)
Not consuming enough food	40 (24.4)	44 (32.6)	28 (27.7)
Not consuming diverse food	91 (55.5)	66 (48.9)	54 (53.5)
Not consuming foods frequently	24 (14.6)	15 (11.1)	10 (9.9)
No knowledge on balanced, diverse and nutritious diet	13 (7.9)	17 (12.6)	11 (10.9)
Not enough time to breastfeed or feed the child frequently	27 (16.5)	3 (2.2)	-
Other	23 (14.0)	12 (8.9)	8 (7.9)
Don't know	9 (5.5)	19 (14.1)	10 (9.9)
Knowledge on how to prevent stunting, n (%)			
Ensuring that the household has and uses the toilet	1 (0.6)	-	-
Ensuring that the people wash their hands at critical times	7 (4.3)	1 (0.7)	1 (1.0)
Increasing the frequency of child feeding	55 (33.5)	23 (17.0)	9 (8.9)
Consuming at least 3 or more meals a day	33 (20.1)	28 (20.7)	22 (21.8)
Consuming more diverse food	89 (54.3)	83 (61.5)	67 (66.3)
Focusing on promotion of vegetables production and consumption	12 (7.3)	4 (3.0)	4 (4.0)
Adding nutritious snacks to the child's diet	9 (5.5)	3 (1.0)	1 (1.0)
Taking the child to the health centre when the child is sick	39 (23.8)	2 (1.5)	5 (5.0)
Treating drinking water	3 (1.8)	1 (0.7)	-
Other	23 (14.0)	4 (3.0)	4 (4.0)
Don't know	11 (6.7)	22 (16.3)	12 (11.9)
Knowledge on the impact of stunting in the community, n (%)			
No	30 (14.2)	18 (8.9)	15 (7.9)
Yes	113 (53.6)	109 (54.0)	81 (42.4)
Don't know	19 (9.0)	7 (3.5)	5 (2.6)

5.2 Source of information on nutrition

New districts

Source of information on child nutrition and health was assessed in the new districts with the question what respondents considered as their most important sources of information. As shown in Table 5.2, a large majority referred to the health clinic, 59.7% (n=126) in Kakumiro, 95.5% (n=193) in Kasama Urban, and 96.3% (n=184) in Kasama Rural. In Kakumiro, village health workers and radio were other information sources that were mentioned by more than 10% of the respondents.

Table 5.2 Source of information on child nutrition and health in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	202	191
Source of health and nutrition information, n (%)			
Health clinic	126 (59.7)	193 (95.5)	184 (96.3)
Village health workers/NAG member	27 (12.8)	13 (6.4)	6 (3.1)
Traditional birth attendant	-	2 (1.0)	1 (0.5)
Female family member or friend	14 (6.6)	14 (6.9)	7 (3.7)
SN4A project members	-	-	-
Male family member or friend	9 (4.3)	2 (1.0)	-
Group meeting	2 (0.9)	-	-
Church/mosque/religious centre	9 (4.3)	5 (2.5)	1 (0.5)
Radio/television	26 (12.3)	6 (3.0)	1 (0.5)
Other	2 (0.9)	1 (0.5)	1 (0.5)
No information	35 (16.6)	7 (3.5)	4 (2.1)

5.3 Source of information on agriculture

New districts

The same question was asked for information sources on agriculture. The most mentioned sources were agriculture extension agent, 26.5% (n=56) in Kakumiro, 22.3% (n=45) in Kasama Urban, 57.1% (n=109) in Kasama Rural; and radio 23.2% (n=49) in Kakumiro, 10.9% (n=22) in Kasama Urban. No information received was frequently reported in all districts, specifically 26.5% (n=56) in Kakumiro, 45.5% (n=92) in Kasama Urban, and 23.0% (n=44) in Kasama Rural (Table 5.3).

Table 5.3 Source of information on agriculture in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	202	191
Source of information or support on agriculture, (%)			
Agriculture extension agent/through government officials	56 (26.5)	45 (22.3)	109 (57.1)
Local organization	4 (1.9)	14 (6.9)	19 (9.9)
NGO	15 (7.1)	-	1 (0.5)
Male family member/male friends/male neighbours	37 (17.5)	16 (7.9)	13 (6.8)
Female family member/female friends/ female neighbours	34 (16.1)	14 (6.9)	16 (8.4)
Radio/television/internet	49 (23.2)	22 (10.9)	8 (4.2)
Other	7 (3.5)	3 (1.5)	-
Don't know	8 (3.8)	9 (4.5)	3 (1.6)
No information	56 (26.5)	92 (45.5)	44 (23.0)

6 Results Pillar 2: Social and behavioural change at the intra-household level

In pillar 2, specific objectives of SN4A phase II are:

- develop and strengthen SBCC strategy to improve and sustain agricultural, dietary and hygiene practices at IHHD level through: interpersonal communication (IPC), community dialogue, and mass media;
- SBCC included in district level planning and implementation.

In the new districts, the existing practices developed in phase I of SN4A project will be applied to improve agrobiodiversity, dietary diversity and intra-household dynamics. Three aspects of SBCC will be employed: interpersonal communication (IPC) between the NAGs and the households; community sessions with demonstration of improved practices; and mass media campaign using the radio. Influential leaders such as Church and political leaders will be involved to continue to re-inforce nutritional messages. The SBCC will focus on addressing the behaviours listed below.

In the existing districts, phase II of the project will continue to focus on addressing behaviours of phase I integrating hygiene practices. The behaviours that will be addressed are:

- Improved Dietary Diversity: promotion of the consumption of fruits, vegetables and local animal source food (ASF); spread messages on nutritious food available all year round; and facilitate market linkages.
- Increase Agrobiodiversity: promotion of fruits and vegetables production; and encourage on growing vitamin A rich foods and ASF.
- Changes in intra-household dynamics: decision making around nutrition; division of the labour; access and control of resources; and intra-household allocation of food.
- Improvement in hygiene practices: understand the hygiene practices to promote and strengthen the linkage to nutrition; focus on hand washing at critical times, maintenance of safe water chain, access to latrine and clean environment.

The following section present the findings on Knowledge, Attitude and Practises related to these behaviours.

6.1 Gender and intra-household decision making on food production

New districts

Respondents were asked about intra household decision making with regard to sales and income of crop production. In Kakumiro, the majority of the respondents reported that in their household it is the men who decides whether food crops are sold or consumed (46.9%, n=99), receives the money from the sales of cash and food crops (58.8% (n=124) and 59.2% (n=125) respectively), and decides how to spend the income (51.7%, n=109) (Table 6.1).

In Kasama rural, the husband was also most often reported to be the one deciding whether food crops are consumed or sold (35.6%, n=68). However, the majority of the respondents reported that they themselves were the ones receiving money from the sale of cash and food crops (34.0%, n=65). The husband/male partner/boyfriend in Kasama rural decides household income allocation most often.

For most of the household in Kasama urban, this question was not applicable, as they do not produce crops. Decisions on allocation of household income however, was most often reported to be made jointly by male and female household members (33.2%, n=67).

Table 6.1 *Intra-household decision making on crops production sales and income in new districts*

<i>N</i>	Uganda	Zambia	
	Kakumiro 211	Kasama Urban 202	Kasama Rural 191
Who decides whether food crops are sold or consumed, n (%)			
Respondent	57 (27.0)	38 (18.8)	28 (14.7)
Jointly male and female households members	35 (16.6)	17 (8.4)	51 (26.7)
Other female household members	7 (3.3)	13 (6.4)	6 (3.1)
Husband/male partner/ boyfriend	99 (46.9)	38 (18.8)	68 (35.6)
Other male household members	6 (2.8)	9 (4.5)	1 (0.5)
Children/ younger members of household	-	-	1 (0.5)
Not applicable	7 (3.3)	87 (43.1)	36 (18.8)
Who receives money from selling cash crops, n (%)			
Respondent	30 (14.2)	39 (19.3)	65 (34.0)
Jointly male and female households members	29 (13.7)	8 (4.0)	22 (11.5)
Other female household members	6 (2.8)	12 (5.9)	6 (3.1)
Husband/male partner/ boyfriend	124 (58.8)	29 (14.4)	37 (19.4)
Other male household members	5 (2.4)	6 (3.0)	-
Not applicable	17 (8.1)	108 (53.5)	61 (31.9)
Who receives money from selling food crops, n (%)			
Respondent	29 (13.7)	42 (20.8)	65 (34.0)
Jointly male and female households members	31 (14.7)	9 (4.5)	15 (7.9)
Other female household members	6 (2.8)	12 (5.9)	7 (3.7)
Husband/male partner/ boyfriend	125 (59.2)	26 (12.9)	23 (12.0)
Other male household members	6 (2.8)	6 (3.0)	-
Not applicable	14 (6.6)	107 (53.0)	81 (42.4)
Who decides on how to spend the income, n (%)			
Respondent	27 (12.8)	52 (25.7)	34 (17.8)
Jointly male and female households members	55 (26.1)	67 (33.2)	59 (30.9)
Other female household members	7 (3.3)	22 (10.9)	9 (4.7)
Husband/male partner/ boyfriend	109 (51.7)	44 (21.8)	68 (35.6)
Other male household members	7 (3.3)	10 (5.0)	4 (2.1)
Children/ younger members of household	1 (0.5)	1 (0.5)	-
Not applicable	5 (2.4)	5 (2.5)	17 (8.9)
Don't know	-	1 (0.5)	-

6.2 Purchase and intra-household distribution of animal source food

New districts

The findings show that in most household certain household members are prioritized in the sequence of food serving, either adult men (52.6% (n=111) of the cases in Kakumiro and 45.0% (n=86) in Kasama Rural) or children are served first (43.6% (n=88) in Kasama Urban). (Table 6.2).

Table 6.2 Household member(s) receiving priority during food serving in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	202	191
Who gets served food first, n (%)			
No one	8 (3.8)	41 (20.3)	55 (28.8)
Adult men and women	7 (3.3)	1 (0.5)	2 (1.0)
Adult women	4 (1.9)	4 (2.0)	2 (1.0)
Adult men	111 (52.6)	52 (25.7)	86 (45.0)
Children	75 (35.5)	88 (43.6)	46 (24.1)
Boys	-	2 (1.0)	-
Girls	1 (0.5)	4 (2.0)	-
Elderly	1 (0.5)	2 (1.0)	-
Other	2 (0.9)	5 (2.5)	-

Overall, the percentage of households wherein animal source food is unequally distributed is 67.3% (n=142) in Kakumiro, 38.6% (n=78) in Kasama Urban, and 41.9% (n=80) in Kasama Rural. In all three districts, the husband or male partner were most often reported to be the one receiving the main share of ASF, specifically 85.2% (n=121) in Kakumiro, 65.4% (n=51) in Kasama urban, and 88.8% (n=71) in Kasama Rural (Table 6.3).

When asked why these household members receive the main share of animal source foods, the reason most frequently mentioned was 'as a sign of respect', 81% (n=115) in Kakumiro, 70.3% (n=52) in Kasama Urban, and 80.0% (n=64) in Kasama Rural. The second most reported reason was that ASF is bought with his/her money in Kakumiro (31.0%, n=44), whereas it was because of cultural practice in Kasama Urban and Kasama Rural (28.4%, n=21; 26.3%, n=21, respectively).

Table 6.3 Intra household distribution of animal source food (ASF) and reason in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	202	191
A member receives the main share of ASF, n (%)	142 (67.3)	78 (38.6)	80 (41.9)
N	142	78	80
Who gets the main share of ASF, n (%)			
Respondent	6 (4.2)	2 (2.6)	1 (1.3)
Other female household members	1 (0.7)	7 (9.0)	1 (1.3)
Husband/ male partner/ boyfriend	121 (85.2)	51 (65.4)	71 (88.8)
Other male household member	5 (3.5)	6 (7.7)	4 (5.0)
Children/ younger member of HH	8 (5.6)	9 (11.5)	2 (2.5)
Other	1 (0.7)	3 (3.8)	1 (1.3)
Reason why he/she gets the main share, n (%)			
As a sign of respect	115 (81.0)	52 (70.3)	64 (80.0)
Cultural practise	9 (6.3)	21 (28.4)	21 (26.3)
ASF bought with his/her money	44 (31.0)	-	-
He/ She brings the main share of the HH income	4 (2.8)	2 (2.7)	1 (1.3)
Don't know	-	2 (2.7)	-
Other	10 (7.0)	3 (4.1)	2 (2.5)

The findings (Table 6.4) show that the majority of the households purchase animal source food, 94.8% (n=200) in Kakumiro, 94.1% (n=190) in Kasama Urban, and 91.6% (n=175) in Kasama Rural. The type of ASF purchased varied by district. Milk and dairy products are purchased by half of the respondents (52.5%, n=105) in Kakumiro. Generally, less households purchase goats and guinea pigs. Under 'other', sheep and insects were reported. The purchase of eggs ranged from 38.0%

(n=76) in Kakumiro to 54.6% (n=95) in Kasama Rural, whereas fish was highly reported in Kasama Rural, 82.2% (n=143), followed by Kasama Urban and Kakumiro.

The findings show that the person responsible for purchasing ASF is the husband or male partner in most households in Kakumiro, 68.0% (n=136) but in Zambia, it is the respondent herself; 54.2% (n=103) in Kasama Urban and 45.1% in Kasama Rural.

Table 6.4 Purchase of animal source food in new districts

N	Uganda	Zambia	
	Kakumiro 200	Kasama Urban 190	Kasama Rural 175
Type of ASF purchased, n (%)			
Milk and dairy products	105 (52.5)	23 (12.1)	18 (10.3)
Beef	183 (91.5)	132 (69.5)	90 (51.7)
Pork	81 (40.5)	57 (30.0)	36 (20.7)
Eggs	76 (38.0)	111 (58.4)	95 (54.6)
Fish/ Silver fish	89 (44.5)	121 (63.7)	143 (82.2)
Goat	29 (14.5)	14 (7.4)	37 (21.3)
Guinea pig	14 (7.0)	36 (18.9)	-
Poultry	30 (15.0)	85 (44.7)	98 (56.3)
Other	4 (2.0)	2 (1.1)	3 (1.7)
Who purchases ASF, n (%)			
Respondent	32 (16.0)	103 (54.2)	79 (45.1)
Jointly male and female household members	15 (7.5)	9 (4.7)	16 (9.1)
Other female household members	4 (2.0)	19 (10.0)	6 (3.4)
Husband/ male partner/ boyfriend	136 (68.0)	46 (24.2)	66 (37.7)
Other male household member	10 (5.0)	12 (6.3)	4 (2.3)

Existing districts

Table 6.5 shows that children were served first in the majority of the households, ranging from 38.7% (n=82) in Kyenjojo to 59.7% (n=123) in Kasese. Relevant was also that 44.4% (n=94) of the cases in Kyenjojo reported to serve the food to everyone at the same moments and 33.9% (n=56) in Isoka served first the adult men.

Table 6.5 Household member(s) receiving priority during food serving in existing districts

N	Uganda		Zambia	
	Kasese 206	Kyenjojo 212	Isoka 165	Chinsali 220
Who gets served food first, n (%)				
No one	48 (23.3)	94 (44.4)	29 (17.6)	46 (20.9)
Adult men and women	2 (0.1)	-	-	-
Adult men	25 (12.1)	26 (12.3)	56 (33.9)	52 (23.6)
Adult women	1 (0.5)	-	-	1 (0.1)
Adult pregnant women	-	-	-	1 (0.5)
Children	123 (59.7)	82 (38.7)	79 (47.9)	118 (53.6)
Boys	1 (0.5)	-	-	-
Girls	-	-	-	-
Elderly	-	1 (0.5)	-	2 (0.9)
Other	6 (2.9)	9 (4.2)	1 (0.6)	-

Throughout all existing districts, (Table 6.6) adult men were most often mentioned as the household member(s) receiving the main share of ASF, ranging from 23.6% (n=52) in Chinsali to 46.1% (n=95)

in Kasese. In both districts in Zambia, children were also reported to receive the main share of ASF (29.7%, n=49 in Isoka; 17.3%, n=38 in Chinsali). The most often mentioned reason is that it is a sign of respect: 33.5% (n=69) in Kasese, 30.2% (n=64) in Kyenjojo, 27.3% (n=45) in Isoka and 17.7% (n=39) in Chinsali. This is followed by the reason that it is a cultural practice. Among "other" reason, it was often specified that the children get the main share of ASF because it is important for their growth.

Table 6.6 *Intra-household distribution of animal source food (ASF) and reason in existing districts*

N	Uganda		Zambia	
	Kasese 133	Kyenjojo 86	Isoka 114	Chinsali 96
Who gets the main share of ASF, n (%)				
Respondent	2 (1.0)	1 (0.5)	-	2 (0.9)
Jointly male and female household members	1 (0.5)	-	1 (0.6)	1 (0.5)
Other female household members	3 (1.5)	2 (0.9)	2 (1.2)	-
Husband/ male partner/ boyfriend	95 (46.1)	62 (29.2)	58 (35.2)	52 (23.6)
Other male household member	8 (3.9)	6 (2.8)	3 (1.8)	3 (1.4)
Children/ younger member of HH	19 (9.2)	14 (6.6)	49 (29.7)	38 (17.3)
Don't know	3 (1.5)	-	-	-
Other	2 (1.0)	1 (0.5)	1 (0.6)	-
Reason why he/ she gets the main share, n (%)				
As a sign of respect	69 (33.5)	64 (30.2)	45 (27.3)	39 (17.7)
Cultural practise	43 (20.9)	44 (20.8)	42 (25.5)	29 (13.2)
ASF bought with he/she money	16 (7.8)	8 (3.8)	-	3 (1.4)
He/ She brings the main share of the HH income	1 (0.5)	2 (0.9)	11 (6.7)	2 (0.9)
Don't know	-	-	4 (2.4)	3 (1.4)
Other	20 (9.7)	11 (5.2)	40 (24.2)	33 (15.0)

In both countries, the majority of households purchase animal source food. Looking at the type of food purchased, milk and dairy product were frequently reported only in Kyenjojo, 73.6% (n=156). Beef was highly reported in all districts, while poultry was more common in in Zambia, with 47.9% (n=79) of the households in Isoka, and 55.5% (n=122) of the households in Chinsali. For fish (silver fish included) the findings show that it is purchased in 94.2% (n=194) of the cases in Kasese, 74.5% (n=158) in Kyenjojo, 83.0% (n=137) in Isoka, and 76.4% (n=168) in Chinsali.

Respondents reported that the husband or the male partner is the main responsible to purchase ASF: 29.1% (n=60) in Kasese, 50.5% (n=107) in Kyenjojo, 44.2% (n=73) in Isoka and 54.5% (n=120) in Chinsali. Only in Kasese, the majority of the respondents reported that they themselves were responsible for the purchase of ASF 35.4% (n=73) (Table 6.7).

Table 6.7 Purchase of animal source food in existing districts

N	Uganda		Zambia	
	Kasese 201	Kyenjojo 205	Isoka 146	Chinsali 198
Type of ASF purchased, n (%)				
Milk and dairy products	29 (14.1)	156 (73.6)	10 (6.1)	22 (10.0)
Beef	189 (91.7)	193 (91.0)	104 (63.0)	167 (75.9)
Pork	45 (21.8)	68 (32.1)	18 (10.9)	25 (11.4)
Eggs	26 (12.6)	110 (51.9)	91 (55.2)	100 (45.5)
Fish/ Silver fish	194 (94.2)	158 (74.5)	137 (83.0)	168 (76.4)
Goat	76 (36.9)	35 (16.5)	36 (21.8)	48 (21.8)
Guinea pig	8 (3.9)	-	-	-
Poultry	22 (10.7)	40 (18.9)	79 (47.9)	122 (55.5)
Other	-	1 (0.5)	-	1 (0.5)
Who purchase ASF, n (%)				
Respondent	73 (35.4)	50 (23.6)	30 (18.2)	22 (10.0)
Jointly male and female household members	43 (20.9)	27 (12.7)	35 (21.2)	52 (23.6)
Other female household members	18 (8.7)	10 (4.7)	3 (1.8)	1 (0.5)
Husband/ male partner/ boyfriend	60 (29.1)	107 (50.5)	73 (44.2)	120 (54.5)
Other male household member	7 (3.4)	9 (4.2)	2 (1.2)	2 (0.9)
Children/ younger member of HH	-	-	-	-
Don't know	-	-	1 (0.6)	-

6.3 Infant and young child feeding practices

New districts

In the KAP module, different questions were asked to assess infant and young child feeding practices, knowledge and barriers. Most of the children were still breastfed at the moment of the survey: 73.5% (n=155) in Kukumiro, 63.9% (n=129) in Kasama Urban and 85.9% (n=164) in Kasama Rural.

Looking at specific age groups the prevalence of children breastfed remained among children aged 6 to 11 months and 12 to 23 months, but dropped for children aged 18 to 23 months, consistently in all districts. This is most evident in Kasama Urban where only 13.5% of the children from 18 to 23 months of age were breastfed (Table 6.8).

Table 6.8 Breastfeeding practices in new district

N	Uganda	Zambia	
	Kakumiro 211	Kasama Urban 202	Kasama Rural 191
Children still breastfed, n (%)	155 (73.5)	129 (63.9)	164 (85.9)
Children breastfed by age, n (%)			
6 to 11 months	91 (85.0)	78 (86.7)	87 (96.7)
12 to 17 months	44 (84.6)	44 (73.3)	60 (95.2)
18 to 23 months	20 (38.5)	7 (13.5)	17 (44.7)
Exclusive breastfeeding, n (%)			
6 months	97 (46.0)	133 (65.8)	136 (71.2)
< 6 months	94 (44.5)	53 (26.2)	40 (20.9)
> 6 months	15 (7.1)	11 (5.4)	12 (6.3)
Not applicable	-	1 (0.5)	-
Don't know	3 (1.4)	4 (2.0)	3 (1.6)
First breastfeeding, n (%)			
Within one hour after birth	159 (75.4)	140 (69.3)	131 (68.6)
After more than one hour	42 (19.9)	50 (24.8)	46 (24.1)
Don't know	10 (4.7)	11 (6.0)	14 (7.4)

The mother/caregiver who stopped breastfeeding their child reported as main reason that the child is too old for breast milk: 27.8% (n=15) in Kakumiro, 61.1% (n= 44) in Kasama Urban, and (n=19) 73.1% in Kasama Rural. In Kakumiro many respondents reported that they stopped breastfeeding because they were pregnant again and in Kasama Rural because they had been was temporary absent from the house (15.4%, n=4) (Table 6.9).

Respondent were also asked for how many month their child had been exclusively breastfed. Based on this question, data shows that 46.0% (n=97) of the respondents exclusively breastfed for 6 months in Kakumiro, 65.8% (n=133) in Kasama Urban and 71.2% (n=136) in Kasama Rural. If exclusive breastfeeding was not practised for the recommended 6 months, it was mostly less.

The majority of the women who exclusively breastfed for 6 months did so because were advised to do so, 50.5% (n=49) in Kakumiro, 67.4% (n=89) in Kasama Urban, and 62.2% (n=84) in Kasama Rural (Table 6.10). The second most reported reason was the prevention from stunting, 14.4% (n=14) in Kakumiro, 22.7% (n=30) in Kasama Urban and 28.1% (n=38) in Kasama Rural, and many women specified that before 6 months of age the child is too young to eat foods other than breastmilk.

Overall, a large proportion of women in all districts reported that they put the child to the breast for the first time within one hour after birth: 75.4% (n=159) in Kakumiro, 69.3% (n=140) in Kasama Urban and 68.6% (n=131) in Kasama Rural. The rest did it after more than one hour or they did not know.

In order to assess the knowledge on complementary feeding, the respondents were asked when they think is the right moment to start with additional food. The majority reported that complementary feeding should start at six months of age, ranging from 75.8% (n=160) in Kakumiro to 86.9% (n=166) in Kasama Rural. The other answers ranged from "the second day after birth" to 2 years of age (Table 6.11).

The findings show that most of the respondents find it difficult provides diverse and nutritious food to the child: 56.2% (n=118) in Kakumiro, 74.5% (n=149) in Kasama Urban and 62.3% (n=119) in Kasama Rural. Investigating the reasons behind this difficulty, unfortunately only a small number of responses were collected and entered. However, the most selected reason in both countries was the lack of money to buy nutritious and diverse food, 93.5% (n=43) in Kakumiro, 96.9% (n=95) in Kasama Urban, and 94.3% (n=113) in Kasama Rural.

Around half of the respondents receive support to feed the child, mainly from their spouse in Kakumiro (60.5% (n=69), and mainly from their mother in Kasama for 47.6% (n=40) in Urban and 46.0% (n=40) in Rural Kasama.

Table 6.9 Reason for stopping breastfeeding in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	202	191
Reason to stop breastfeeding, n (%)			
Lack of time to breastfeed	-	2 (2.8)	-
Child refuses breastmilk	7 (13.0)	3 (4.2)	-
Not enough breastmilk produced	7 (13.0)	1 (1.4)	1 (3.8)
Child refuses other foods	2 (3.7)	9 (12.5)	1 (3.8)
Temporary absence of the mother	5 (9.3)	5 (6.9)	4 (15.4)
Child too old	15 (27.8)	44 (61.1)	19 (73.1)
Advised by others to stop	5 (9.3)	5 (6.9)	-
Don't know	-	1 (1.4)	-
Other	16 (29.6)	6 (8.3)	1 (3.8)

Table 6.10 Reason to exclusive breastfeeding for recommended 6 months in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	97	132	165
Reason of exclusive breastfeeding for 6 months, n (%)			
To prevent the child from stunting	14 (14.4)	30 (22.7)	38 (28.1)
Breastmilk is nutritious	10 (10.3)	18 (13.6)	4 (3.0)
The baby likes it	11 (11.3)	2 (1.5)	3 (2.2)
No money for other foods	3 (3.1)	2 (1.5)	1 (0.7)
Advised to do so	49 (50.5)	89 (67.4)	84 (62.2)
Don't know	4 (4.1)	1 (0.8)	4 (3.0)
Other	14 (14.4)	5 (3.8)	5 (3.7)

Table 6.11 Knowledge, barriers and support on complementary feeding practices in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	202	191
What age babies should start eating complementary food, n (%)			
At six months	160 (75.8)	163 (80.7)	166 (86.9)
Other	33 (15.6)	26 (14.4)	21 (11.0)
Range, (months)	(0-12)	(1-24)	(2-9)
Don't know	18 (8.5)	10 (5.0)	4 (2.1)
Difficult to provide diverse nutritious food, n (%)	118 (56.2)	149 (74.5)	119 (62.3)
N	46	98	120
Why it is difficult to provide diverse food, n (%)			
Lack of time to prepare the meal	-	-	4 (3.3)
Lack of money to buy diverse nutritious food	43 (93.5)	95 (96.9)	113 (94.3)
Lack of knowledge on what to feed the child	-	-	-
Lack of support from household members	12 (26.1)	1 (1.0)	2 (1.7)
Lack of availability of diverse nutritious food	8 (17.4)	1 (1.0)	3 (2.5)
Other	3 (6.5)	-	-
Support from other members of HH to feed the child, n (%)	114 (54.0)	116 (57.4)	88 (46.0)
N	114	84	87
Member of the HH who supports to feed the child, n (%)			
Spouse	69 (60.5)	15 (17.9)	24 (27.6)
Mother	17 (14.9)	40 (47.6)	40 (46.0)
Father	4 (3.5)	14 (16.7)	11 (12.6)
Sister	19 (16.7)	15 (17.9)	9 (10.3)
Brother	4 (3.5)	4 (4.8)	4 (4.6)
Sister-in-law/ daughter-in-law	5 (4.4)	4 (4.8)	6 (6.9)
Son	-	1 (1.2)	-
Daughter	1 (0.9)	7 (8.3)	12 (13.8)
Uncle	-	2 (2.4)	2 (2.3)
Aunt	1 (0.9)	3 (3.6)	3 (3.4)
Nephew/ niece/ cousin	1 (0.9)	1 (1.2)	3 (3.4)
Community member	7 (6.1)	5 (6.0)	1 (1.1)
Other caregiver	12 (10.5)	3 (3.6)	3 (3.4)

Existing districts

At the moment of the survey the prevalence of children breastfed was 87.9% (n=181) in Kasese, 67.0% (n=142) in Kyenjojo, 83.0% (n=137) in Isoka, and 91.4% (n=201) in Chinsali. Looking into age groups, the percentage of children breastfed was quite high in children from 6 to 17 months in all districts except for Kyenjojo, where only 67.7% (n=44) of the children of 12 to 17 months were breastfed. Breastfeeding rates decrease in all districts for children from 18 to 23 months, ranging from 38.6% (n=26) in Kyenjojo to 73.1% (n=38) in Chinsali (Table 6.12).

Table 6.12 *Breastfeeding practices in existing districts*

<i>N</i>	Uganda		Zambia	
	Kasese 206	Kyenjojo 212	Isoka 165	Chinsali 220
Children still breastfed, n (%)	181 (87.9)	142 (67.0)	137 (83.0)	201 (91.4)
Children breastfed by age, n (%)				
6 to 11 months	73 (100)	78 (82.1)	67 (94.4)	99 (97.1)
12 to 17 months	71 (92.2)	44 (67.7)	44 (86.3)	64 (97.0)
18 to 23 months	37 (66.1)	20 (38.5)	26 (60.5)	38 (73.1)
Exclusive breastfeeding, n (%)				
6 months	119 (57.8)	172 (81.1)	136 (82.4)	190 (86.4)
< 6 months	71 (34.5)	20 (9.4)	14 (8.5)	13 (5.9)
> 6 months	16 (7.8)	13 (6.1)	8 (4.8)	14 (6.4)
Not applicable	-	1 (0.5)	3 (1.8)	2 (0.9)
Don't know	-	6 (2.8)	4 (2.4)	1 (0.1)
First breastfeeding, n (%)				
Within one hour after birth	169 (82.0)	184 (86.8)	106 (64.2)	164 (74.5)
After more than one hour	32 (15.5)	19 (9.0)	58 (35.2)	50 (22.7)
Don't know	5 (2.4)	9 (4.2)	1 (0.6)	6 (2.7)

For those children who were no longer breastfed, reasons for discontinuation of breastfeeding were investigated. Not having enough milk was the most reported reason in Kasese (2.4%, n=5) while in the other districts the most reported reason was that the child is too old, specifically 9.4% (n=20) in Kyenjojo, 10.3% (n=17) in Isoka, and 6.8% (n=15) in Chinsali. Several other reasons for discontinuation of breastfeeding were reported, amongst which mother advised to stop due to HIV positive diagnosis', 'mother pregnant' and 'mother has abandoned the child', were most common (Table 6.13).

Table 6.13 *Reason of discontinuation of breastfeeding of child in existing districts*

<i>N</i>	Uganda		Zambia	
	Kasese 24	Kyenjojo 69	Isoka 28	Chinsali 19
Reason of discontinuation, n (%)				
Lack of time to breastfeed	2 (1.0)	2 (0.9)	1 (0.6)	-
Child refuses breastmilk	4 (1.9)	7 (3.3)	2 (1.2)	-
Not enough breastmilk produced	5 (2.4)	5 (2.4)	-	-
Child refuses other foods	2 (1.0)	1 (0.5)	1 (0.6)	-
Temporary absence of the mother	3 (1.5)	5 (2.4)	1 (0.6)	2 (0.9)
Child too old	3 (1.5)	20 (9.4)	17 (10.3)	15 (6.8)
Advised by others to stop	1 (0.5)	4 (1.9)	-	-
Don't know	1 (0.5)	-	4 (2.4)	1 (0.5)
Other	3 (1.5)	25 (11.8)	2 (1.2)	1 (0.5)

In Kasese 57.8% (n=119) of the children were exclusively breastfed for 6 months. This percentage is low compared to the other districts: 81.1% (n=172) in Kyenjojo, 82.4% (n=136) in Isoka and 76.8% (n=617) in Chinsali.

The findings show that the three main reasons as why the women exclusively breastfed for 6 months were to prevent stunting, because the milk is nutritious and because they were advised to do so (Table 6.14).

Table 6.14 Reason for breastfeeding for 6 months in existing districts

N	Uganda		Zambia	
	Kasese	Kyenjojo	Isoka	Chinsali
	119	172	136	190
Reason of exclusive breastfeeding for 6 months, n (%)				
To prevent the child from stunting	41 (19.9)	120 (56.6)	45 (27.3)	64 (29.1)
Breastmilk is nutritious	71 (34.5)	72 (34.0)	88 (53.3)	45 (20.5)
The baby likes it	22 (10.7)	45 (21.2)	35 (21.2)	5 (2.3)
No money for other foods	-	4 (1.9)	2 (1.2)	3 (1.4)
Advised to do so	45 (21.8)	77 (36.3)	73 (44.2)	142 (64.5)
Don't know	2 (1.0)	-	4 (2.4)	8 (3.6)
Other	7 (3.4)	6 (2.8)	7 (4.2)	7 (3.2)

In Uganda, more women put the child to the breast for the first time within one hour of birth (82.0%, n=169 in Kasese; 86.8%, n=184 in Kyenjojo) compared to Zambia (64.2%, n=106 in Isoka; 74.5%, n=164 in Chinsali).

Knowledge and barriers around complementary feeding were assessed. In both countries almost all the respondents think that the babies should start eating complementary food at 6 months, ranging from 95.1% (n=196) in Kasese to 90.3% (n=149) in Isoka. The percentage of women who reported difficulties in providing diverse and nutritious food was 34.5% (n=71) in Kasese, 18.9% (n=40) in Kyenjojo, 26.1% (n=43) in Isoka, and 30.5% (n=67) in Chinsali. The most frequently mentioned reason in all districts was the lack of money to buy diverse and nutritious food, specifically 32.0% (n=66) in Kasese, 16.5% (n=35) in Kyenjojo, 26.75 (n=44) in Isoka, and 26.8% (n=59) in Chinsali. This is followed by the lack of availability of diverse nutritious food especially in Kasese and Isoka (Table 6.15).

A large number of respondents reported to receive support to feed the child in Kasese, 71.8% (n=148), but less in Kyenjojo, 34.4% (n=73). In the two districts in Zambia, about half of the respondents receives support with 51.5% (n=85) and 58.2% (n=128) of women in Isoka and Chinsali, respectively. The support is provided by the spouse for 39.8% (n=82) of the respondents in Kasese, 24.5% (n=52) in Kyenjojo, 44.2% (n=73) in Isoka, and 50.0% (n=110) in Chinsali. In Kasese also mother, father, mother in law and daughter were mentioned quite often.

Table 6.15 Knowledge, barriers and support on complementary feeding practices in existing districts

<i>N</i>	Uganda		Zambia	
	Kasese	Kyenjojo	Isoka	Chinsali
	206	212	165	220
What age babies should start eating complementary food, n (%)				
At six months	196 (95.1)	200 (94.3)	149 (90.3)	200 (90.9)
Other	5 (2.4)	4 (1.9)	8 (4.8)	15 (6.8)
Range	8	-	(5-12)	(3-9)
Don't know	5 (2.4)	8 (3.8)	8 (4.8)	5 (2.3)
Difficult to provide diverse nutritious food, n (%)	71 (34.5)	40 (18.9)	43 (26.1)	67 (30.5)
<i>N</i>	71	40	43	67
Why it is difficult to provide diverse food, n (%)				
Lack of time to prepare the meal	2 (1.0)	1 (0.5)	2 (1.2)	3 (1.4)
Lack of money to buy diverse nutritious food	66 (32.0)	35 (16.5)	44 (26.7)	59 (26.8)
Lack of knowledge on what to feed the child	4 (1.9)	5 (2.4)	3 (1.8)	2 (0.9)
Lack of support from household members	10 (4.9)	11 (5.2)	12 (7.3)	3 (1.4)
Lack of availability of diverse nutritious food	25 (12.1)	15 (7.1)	20 (12.1)	18 (8.2)
Other	4 (1.9)	2 (0.9)	1 (0.6)	-
<i>N</i>	206	212	165	220
Support from other members of HH to feed the child, n (%)	148 (71.8)	73 (34.4)	85 (51.5)	128 (58.2)
<i>N</i>	148	73	85	128
Member of the HH who supports to feed the child, n (%)				
Spouse	82 (39.8)	52 (24.5)	73 (44.2)	110 (50.0)
Mother	37 (18.0)	13 (6.1)	20 (12.1)	12 (5.5)
Father	28 (13.6)	11 (5.2)	7 (4.2)	1 (0.5)
Sister	10 (4.9)	5 (2.4)	4 (2.4)	5 (2.3)
Brother	3 (1.5)	-	1 (0.6)	3 (1.4)
Sister-in-law/ daughter-in-law	21 (10.2)	1 (0.5)	2 (1.2)	1 (0.5)
Son	5 (2.4)	-	1 (0.6)	-
Daughter	18 (8.7)	1 (0.5)	3 (1.8)	5 (2.3)
Uncle	2 (0.1)	2 (0.9)	1 (0.6)	-
Aunt	1 (0.5)	2 (0.9)	1 (0.6)	-
Nephew/ niece/ cousin	-	1 (0.5)	1 (0.6)	-
Community member	2 (1.0)	-	-	1 (0.5)
Other caregiver	35 (17.0)	3 (1.4)	-	3 (1.4)

6.4 Water, sanitation and hygiene practices

New districts

As previously described, SN4A phase II will focus also on water, sanitation and hygiene practices. As reported in chapter 4, Table 4.7, around 40% of the children in the new districts had diarrhoea in the two weeks prior to the survey. To the question how diarrhoea is spread the majority of the respondents reported that it is spread by unclean food, specifically 51.2% (n=108) in Kakumiro, 68.8% (in Kasama Urban), and 62.1% (n=118) in Kasama Rural. In Kakumiro and Kasama Rural, many women mentioned teeth growth as another cause of diarrhoea or did not know how it is spread. In Zambia, the second most reported cause for spreading of diarrhoea was dirty water, by 53.5% (n=108) of respondents in Kasama Urban and 54.2% (n=103) in Kasama Rural, followed by dirty hands and flies (Table 6.16).

Table 6.16 Knowledge of respondents in new districts on how diarrhoea is spread

<i>N</i>	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	202	191
How diarrhoea is spread, n (%)			
Dirty hands	27 (12.8)	40 (19.8)	33 (17.4)
Dirty water	42 (19.9)	108 (53.5)	103 (54.2)
Flies	14 (6.6)	19 (9.4)	42 (22.1)
Solid waste	8 (3.8)	11 (5.4)	9 (4.7)
Unclean food	108 (51.2)	139 (68.8)	118 (62.1)
Dirty latrine	1 (0.5)	7 (3.5)	13 (6.8)
Open defecation	7 (3.3)	20 (9.9)	27 (14.1)
Through animal waste/ manure	-	-	1 (0.5)
Don't know	44 (20.9)	28 (13.9)	35 (18.4)
Other	56 (26.5)	16 (7.9)	21 (11.1)

Table 6.17 shows the findings on the practice of handwashing. A high prevalence of respondents reported to have the habit of washing their hands, 98.6% (n=208) in Kakumiro, 95.5% (n=193) in Kasama Urban and 94.2% (n=180) and the majority of them use water and soap. A “critical time”¹⁵ is a specific occurrence that poses a potential health risk, which could be prevented by handwashing with soap such as after defecation, before eating, before preparing food, after cleaning the infant and before feeding the infant¹⁶. The percentage of people washing their hands on the five critical times are 2.4% (n=5) in Kakumiro, 8.9% (n=17) in Kasama Urban and 6.1% (n=11) in Kasama Rural. Handwashing “after defecation” is common, but current handwashing practices at four other critical times are concerning as not even half of the respondents across all districts reported it. The findings show that almost half of the respondents in Kakumiro think that handwashing with soap is important for preventing diseases, 51.7% (n=109), removes germs, 48.8% (n=103) and clean the hands, 46.4% (n=98). In Zambia, in both districts a high prevalence of respondents reported that the practice of handwashing is important for preventing diseases, 78.2% (n=158) and 80.6% (n=154) in Kasama Urban and Kasama Rural, respectively, followed by the prevention of diarrhoea in 44.6% (n=90) and 39.3% (n=75), respectively. Reason such as to remove germs, good for the hygiene and to clean the hands are range from 31.7% in Kasama Urban to 21.5% in Kasama Rural.

Only 38.4% (n=81) of the households in Kakumiro has a fixed handwashing station, the majority of the rest wash their hands anywhere (51.2%, n=66) or in the kitchen area (39.5%, n=51). In Kasama Urban 55.0% (n=111) of the households has fixed handwashing station. Almost equal numbers of respondents wash their hands at the water source, near the latrine, or in the kitchen area. In Kasama Rural 84.3% (n=161) of the households has a fixed handwashing location.

¹⁵ First three critical times are in line with global guidance (UNICEF); critical times related to childcare were added in consultation with SNV staff and given the programme focus on nutrition status of children of 6-23 months

¹⁶ Vujcic J., Ram P.K., 2013. Handwashing Promotion: Monitoring and Evaluation Module. UNICEF

Table 6.17 Knowledge, attitudes and practices on handwashing in new districts

<i>N</i>	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	202	191
Habit of handwashing, n (%)	208 (98.6)	193 (95.5)	180 (94.2)
What is used for handwashing, n (%)			
Water only	23 (10.9)	7 (3.5)	4 (2.1)
Water and soap	184 (87.2)	182 (90.1)	170 (89.0)
Water with ash	-	-	2 (1.0)
Moments of handwashing, n (%)			
When hands are dirty	57 (27.5)	72 (37.5)	62 (34.4)
Before feeding child*	68 (35.9)	75 (39.1)	58 (32.2)
Before eating*	157 (75.8)	95 (49.5)	86 (47.8)
After eating	96 (46.4)	59 (30.7)	67 (37.2)
After defecation*	170 (82.1)	177 (92.2)	165 (91.7)
Before preparing food*	43 (20.8)	81 (42.2)	50 (27.8)
After cleaning infant who has defecate*	14 (6.8)	84 (43.8)	73 (40.6)
After touching animals	1 (0.5)	-	2 (1.0)
Other	27 (13.0)	3 (1.6)	2 (1.1)
Handwashing at 5 critical times, n (%)	5 (2.4)	17 (8.9)	11 (6.1)
Importance of washing hands with soap, n (%)			
Prevents disease	109 (51.7)	158 (78.2)	154 (80.6)
Prevents diarrhoea	10 (4.7)	90 (44.6)	75 (39.3)
Cleans hands/ removes dirt	98 (46.4)	55 (27.2)	41 (21.5)
Is good for the hygiene	54 (25.6)	54 (26.7)	45 (23.6)
Prevents dirt from getting into the mouth	21 (10.0)	10 (5.0)	8 (4.2)
Prevents dirt from getting into the food	11 (5.2)	27 (13.4)	15 (7.9)
Removes germs	103 (48.8)	64 (31.7)	43 (22.5)
Heard from other people	1 (0.5)	5 (2.5)	1 (0.5)
Heard from radio/TV	-	4 (2.0)	-
Have seen other people do so	1 (0.5)	4 (2.0)	-
Smells good	5 (2.4)	1 (0.5)	-
Look/ feels clean	8 (3.8)	1 (0.5)	-
Don't know	1 (0.5)	3 (1.5)	4 (2.1)
Fixed handwashing station, n (%)	81 (38.4)	111 (55.0)	161 (84.3)
<i>N</i>	129	87	28
Other handwashing station, n (%)			
At the water source	2 (1.6)	23 (26.4)	6 (21.4)
In the latrine	5 (3.9)	1 (1.1)	-
Near the latrine	26 (20.2)	23 (26.4)	8 (28.6)
In the kitchen area	51 (39.5)	21 (24.1)	1 (3.6)
No handwashing elsewhere	2 (1.6)	4 (4.6)	2 (7.1)
Other	66 (51.2)	17 (19.5)	12 (42.9)

*Handwashing critical times

The prevalence of improved¹⁷ drinking water used is different across the districts: 43.6% (n=92) in Kakumiro, 54.7% (n=105) in Kasama Urban and 15.2% (n=29) in Kasama Rural. Unprotected dug wells were reported to be the main source of water and the second source of water most reported was tube well by 28.9% (n=61) of the respondents in Kakumiro, household connection by 30.2% (n=61) in Kasama Urban, and pond, river or stream by 24.1% (n=46) in Kasama Rural. In addition, in both countries, the reported main source of water is used all year round for the majority of the households (Table 6.18).

The findings show that in most household, the respondent herself is mainly responsible for water collection for domestic use, 76.9% (n=158) in Kakumiro, 83.2% (n=168) in Kasama Urban, and

¹⁷ Improved sources of water are household's connection, public taps, tube wells, boreholes, protected dug wells and springs and rainwater. WHO, water, sanitation and hygiene. Available at: http://www.who.int/water_sanitation_health/monitoring/water.pdf

93.7% (n=179) in Kasama Rural. The time reported to collect water for domestic use was an average 30.1 minutes (from 1 to 240 minutes) in Kakumiro, 12.4 minutes (from 0 to 99 minutes) in Kasama Urban, and 17.4 minutes (from 0 to 120 minutes) in Kasama Rural.

The majority of the households treat their drinking water, ranging from 59.7% (n=114) in Kasama Rural to 66.3% (n=134) in Kasama Urban. In Kakumiro, the only treatment used is to boil the water, while in Kasama Urban and Kasama Rural in addition to boiling (41.8%, n=56; 57.5%, n=65) also the use of disinfectants and chemicals was reported. Of those households that reported to treat their drinking water, 72.5% (n=95) in Kakumiro, 67.2% (n=90) in Kasama Urban, and 63.2% (n=72) in Kasama Rural, reported to 'always' practice this.

Table 6.18 Source of water and drinking water treatment practices in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	192	191
Improved source of drinking water, n (%)	92 (43.6)	105 (54.7)	29 (15.2)
Main source of water, n (%)			
Household connection*	3 (1.4)	61 (30.2)	7 (3.7)
Tube well or borehole*	61 (28.9)	27 (13.4)	11 (5.8)
Protected dug well*	28 (13.3)	16 (7.9)	11 (5.8)
Improved rainwater collection*	-	1 (0.5)	-
Unprotected dug well	64 (30.3)	76 (37.6)	116 (60.7)
Pond, river or stream	49 (23.2)	6 (3.0)	46 (24.1)
Unimproved rainwater collection	-	1 (0.5)	-
Vendor-provided water	-	4 (2.0)	-
Bottle water	3 (1.4)	-	-
Tanker truck water	-	-	-
Other	3 (1.4)	-	-
Use of the main source of water, n (%)			
Whole year	189 (89.6)	181 (98.6)	179 (93.7)
Dry season only	3 (1.4)	3 (1.5)	-
Wet season only	14 (6.6)	14 (6.9)	10 (5.2)
Not applicable	1 (0.5)	-	-
Don't know	2 (0.9)	3 (1.5)	2 (1.0)
N	17	14	10
Source of water during the rest of the year, n (%)			
Household connection	-	2 (14.3)	-
Tube well or borehole	4 (23.5)	6 (42.9)	-
Protected dug well	2 (11.8)	2 (14.3)	1 (10.0)
Improved rainwater collection	-	-	-
Unprotected dug well	1 (5.9)	4 (28.6)	6 (60.0)
Pond, river or stream	11 (64.7)	1 (7.1)	3 (30.0)
Unimproved rainwater collection	-	-	-
Vendor-provided water	-	-	-
Bottle water	1 (5.9)	-	-
Tanker truck water	-	-	-
N	211	202	191
Person responsible for collecting water, n (%)			
Respondent	158 (76.9)	168 (83.2)	179 (93.7)
Husband/ partner	8 (3.8)	9 (4.5)	1 (0.5)
Daughter (<18y)	14 (6.6)	-	2 (1.0)
Son (<18y)	16 (7.6)	2 (1.0)	-
Daughter (>18y)	4 (1.9)	3 (1.5)	-
Son (>18y)	3 (1.4)	1 (0.5)	-
Other	5 (2.4)	8 (4.0)	4 (2.1)
Not applicable	3 (1.4)	11 (5.4)	5 (2.5)
Time to collect water in minutes, mean (sd)	30.1 (33.4)	12.4 (20.3)	17.4 (23.9)

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	192	191
Range	(1-240)	(0-99)	(0-120)
Water treatment, n (%)	131 (62.1)	134 (66.3)	114 (59.7)
N	130	134	113
Treatment method, n (%)			
Boil	130 (100)	56 (41.8)	65 (57.5)
Water filter (ceramic or porous filtration)	-	-	-
Put against the sun (UV radiation)	-	-	-
Chemical disinfection	-	31 (23.1)	14 (12.4)
Floculent/désinfectant (e.g. chlorite solution)	-	70 (52.2)	48 (42.5)
Other	-	1 (0.7)	-
Don't know	-	-	-
Frequency of water treatment, n (%)			
Always	95 (72.5)	90 (67.2)	72 (63.2)
Usually	18 (13.7)	19 (14.2)	16 (14.0)
Sometimes	15 (11.5)	25 (18.7)	25 (21.9)

*Improved source of drinking water

Almost all the households in the new districts in both countries have a latrine and use it, during both wet and dry season and during day and night time (Table 6.19). The prevalence of households with improved latrine¹⁸ is 34.1% (n=72) in Kakumiro, 29.1% (n=57) in Kasama Urban, and 63.5% (n=12) in Kasama Rural.

Table 6.19 Presence and use of latrine in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	202	191
Presence of latrine in the household, n (%)	211 (100)	197 (97.5)	190 (99.5)
Improved latrine, n (%)	72 (34.1)	57 (29.1)	12 (6.5)
Type of latrine, n (%)			
Flush or poured to septic tank or pit*	-	19 (9.7)	-
Pit latrine with slab*	73 (34.6)	41 (20.9)	12 (6.5)
Public or shared latrine (any type)	2 (0.9)	2 (1.0)	-
Flush or pour flush somewhere	-	5 (2.6)	-
Open pit latrine without slab	135 (64.0)	131 (66.8)	171 (91.9)
Latrine overhanging water	-	2 (1.0)	3 (1.6)
Don't know	-	-	1 (0.5)
Use the latrine, n (%)	207 (98.1)	193 (95.5)	184 (96.3)
Location of defecation when daytime during dry season			
OD (ground/forest, water body)	-	1 (0.5)	-
In your own latrine	197 (93.4)	197 (97.5)	188 (98.4)
In neighbour's latrine	4 (1.9)	3 (1.5)	1 (0.5)
In public latrine	3 (1.4)	-	-
Other	7 (3.3)	-	2 (1.0)
Location of defecation when daytime during wet season			
OD (ground/forest, water body)	-	1 (0.5)	-
In your own latrine	200 (94.8)	198 (98.0)	188 (98.4)
In neighbour's latrine	5 (2.4)	3 (1.5)	2 (1.0)
In public latrine	3 (1.4)	-	-
Other	3 (1.4)	-	1 (0.5)
Location of defecation when night time during dry season			

¹⁸ Improved sanitation facilities are flush tank, flush pit, poured tank, poured pit, pit latrine with slab. WHO, 2012.
Available at: http://www.who.int/water_sanitation_health/monitoring/jmp2012/key_terms/en/

N	Uganda		Zambia	
	Kakumiro		Kasama Urban	Kasama Rural
	211		202	191
OD (ground/forest, water body)	-		1 (0.5)	-
In your own latrine	200 (94.8)		198 (98.0)	191 (100)
In neighbour's latrine	6 (2.8)		2 (1.0)	-
In public latrine	3 (1.4)		-	-
Other	2 (0.9)		1 (0.5)	-
Location of defecation when night time during wet season				
OD (ground/forest, water body)	1 (0.5)		1 (0.5)	-
In your own latrine	202 (95.7)		194 (96.0)	191 (100)
In neighbour's latrine	4 (1.9)		4 (2.0)	-
In public latrine	3 (1.4)		-	-
Other	1 (0.5)		3 (1.5)	-
Not applicable	-		-	-

* Improved sanitation facilities.

Existing districts

As reported in chapter 4 (Table 4.8), the prevalence of children who had diarrhoea in the last two weeks in the existing districts was around 30% in Uganda and around 35-45% in Zambia. Based on the question how diarrhoea is spread the majority of the respondents reported that it is spread by unclean food, specifically 52.9% (n=109) in Kasese, 62.7% (n=133) in Kyenjojo, 65.5% (n=108) in Isoka, and 64.1% (n=141) in Chinsali. After unclean food, the most reported causes of the spread of diarrhoea were dirty hands and dirty water. A small prevalence of women did not know how it is spread (Table 6.20).

Table 6.20 Knowledge of respondents in existing districts on how diarrhoea is spread

N	Uganda		Zambia	
	Kasese	Kyenjojo	Isoka	Chinsali
	206	211	164	220
How diarrhoea is spread, n (%)				
Dirty hands	117 (56.8)	89 (42.0)	77 (46.7)	64 (29.1)
Dirty water	66 (32.0)	57 (26.9)	105 (63.6)	121 (55.0)
Flies	48 (23.3)	65 (30.7)	43 (26.1)	31 (14.1)
Solid waste	24 (11.7)	19 (9.0)	12 (7.3)	23 (10.5)
Unclean food	109 (52.9)	133 (62.7)	108 (65.5)	141 (64.1)
Dirty latrine	21 (10.2)	22 (10.4)	23 (13.9)	10 (4.5)
Open defecation	57 (27.7)	28 (13.2)	31 (18.8)	18 (8.2)
Through animal waste/ manure	-	-	-	1 (0.5)
Don't know	21 (10.2)	15 (7.1)	28 (17.0)	39 (17.7)
Other	61 (29.6)	51 (24.1)	7 (4.2)	5 (2.3)

Table 6.21 shows the findings on handwashing practices. Almost all the respondents reported to have the habit of washing their hands, 96.6% (n=199) in Kasese, 99.1% (n=210) in Kyenjojo, 93.9% (n=155) in Isoka, and 97.3% (n=214) in Chinsali and the majority of them use water and soap.

The percentage of respondents which reported to wash their hands at all the five critical times is 2.5% (n=5) in Kasese, 1.4% (n=3) in Kyenjojo, 11.6% (n=18) in Isoka, and 4.7% (n=10) in Chinsali. Less the half of the respondents reported to wash their hands at two of the critical times selected. In addition, the findings show that most of the households have a fixed handwashing station, 70.4% (n=145) in Kasese, 80.7% (n=171) in Kyenjojo, 64.2% (n=106) in Isoka, and 64.1% (n=141) in Chinsali.

The data show that the majority of the respondents in both countries think that handwashing with soap is important for preventing diseases, 70.9% (n=146) in Kasese, 89.6% (n=190) in Kyenjojo, 92.7% (n=153) in Isoka, and 70.0% (n=154) in Chinsali. Almost half of the women in each district reported that this practice is important for good hygiene.

Table 6.21 Knowledge, attitudes and practices on handwashing in existing districts

	Uganda		Zambia	
	Kasese	Kyenjojo	Isoka	Chinsali
N	206	212	165	220
Habit of handwashing, n (%)	199 (96.6)	210 (99.1)	155 (93.9)	214 (97.3)
N	199	210	155	214
What is used for handwashing, n (%)				
Water only	4 (1.9)	20 (9.4)	8 (4.8)	9 (4.1)
Water and soap	188 (91.3)	187 (88.2)	138 (83.6)	197 (89.5)
Water with ash	1 (0.5)	1 (0.5)	9 (5.5)	6 (2.7)
Moments of handwashing, n (%)				
When hands are dirty	99 (48.1)	102 (48.1)	86 (52.1)	107 (48.6)
Before feeding child*	99 (48.1)	140 (66.0)	84 (50.9)	99 (45.0)
Before eating*	154 (74.8)	170 (80.2)	124 (75.2)	149 (67.7)
After eating	101 (49.0)	108 (50.9)	62 (37.6)	85 (38.6)
After defecation*	158 (76.7)	158 (74.5)	142 (86.1)	190 (86.4)
Before preparing food*	38 (18.4)	17 (8.0)	83 (50.3)	112 (50.9)
After cleaning infant who has defecated*	45 (21.8)	22 (10.5)	57 (34.5)	44 (20.0)
After touching animals	5 (2.4)	6 (2.8)	-	1 (0.5)
Other	8 (3.9)	13 (6.1)	6 (3.6)	-
5 critical times, n (%)	5 (2.5)	3 (1.4)	18 (11.6)	10 (4.7)
Importance of washing hands with soap, n (%)				
Prevents disease	146 (70.9)	190 (89.6)	153 (92.7)	154 (70.0)
Prevents diarrhoea	74 (35.9)	74 (34.9)	87 (52.7)	58 (26.4)
Cleans hands/ removes dirt	82 (39.8)	80 (37.7)	85 (51.5)	119 (54.1)
Is good for the hygiene	95 (46.1)	107 (50.5)	86 (52.1)	104 (47.3)
Prevents dirt from getting into the mouth	43 (20.9)	37 (17.5)	46 (26.1)	9 (4.1)
Prevents dirt from getting into the food	19 (9.2)	40 (18.9)	59 (35.8)	16 (7.3)
Removes germs	84 (40.8)	101 (47.6)	59 (35.8)	45 (20.5)
Heard from other people	2 (1.0)	3 (1.4)	-	-
Heard from radio/TV	-	2 (0.9)	-	-
Have seen other people do so	-	1 (0.5)	1 (0.6)	-
Smells good	2 (1.0)	-	2 (1.2)	1 (0.5)
Look/ feels clean	-	2 (0.9)	-	7 (3.2)
Don't know	2 (1.0)	-	4 (2.4)	3 (1.4)
Other	2 (1.0)	-	-	-
Fixed handwashing location, n (%)	145 (70.4)	171 (80.7)	106 (64.2)	141 (64.1)
N	60	39	56	79
Other handwashing location, n (%)				
At the water source	2 (1.0)	2 (0.9)	1 (0.6)	9 (4.1)
In the latrine	1 (0.5)	-	-	-
Near the latrine	14 (6.8)	14 (6.6)	40 (24.2)	11 (5.0)
In the kitchen area	10 (4.9)	6 (2.8)	13 (7.9)	30 (13.6)
No handwashing elsewhere	10 (4.9)	12 (5.7)	1 (0.6)	11 (5.0)
Other	23 (11.2)	5 (2.4)	1 (0.6)	18 (8.2)

*Handwashing critical times

The prevalence of households which use an improved source of water is 28.2% (n=58) in Kasese, 52.4% (n=111) in Kyenjojo, 42.1% (n=69) in Isoka, and 34.5% (n=76) in Chinsali. In Kasese the main sources of water reported were pond, river or stream and tap water (under specification of answer category 'other'), both 35.0% (n=72). In Kyenjojo, 43.4% (n=92) of the respondents use

water from an unprotected dug well and 38.2% (n=81) from a tube well and borehole. Differently, in Isoka 41.2% (n=68) of the respondents use the household connection and 30.9% (n=51) use an unprotected dug well. In Chinsali the majority use water from an unprotected dug well, 64.1% (n=141). In addition, the majority of the households in both countries reported that their main source of water during the survey is the main source used all year round (Table 6.22).

The findings show that the respondents are the person responsible for collecting water, 94.2% (n=194) in Kasese, 84.4% (n=179) in Kyenjojo, 97.0% (n=160) in Isoka, and 99.1% (n=218) in Chinsali. The time reported to collect water for domestic use was an average 23.4 minutes in Kasese, 34.7 minutes in Kyenjojo, 18.3 minutes in Isoka, and 14.9 minutes in Chinsali.

In the majority of the households the drinking water is treated, 71.7% (n=152) in Kyenjojo, 73.3% (n=121) in Isoka, and 64.5% (n=142) in Chinsali. Kasese presented an opposite trend with only 29.6% (n=61) of households treating their drinking water. The most often reported method to treat the water was boiling in each district, in addition to the use of chemical disinfection in Kasese and flocculent/disinfectants in Isoka and Chinsali. Treating drinking water is not consistently practised, only 22.8% (n=47) of the households in Kasese, 43.0% (n=71) in Isoka, 35.9% (n=79) in Chinsali, 'always' treats their drinking water, the other households only 'usually' or 'sometimes'.

Table 6.22 Source of water and drinking water treatment in existing districts

N	Uganda		Zambia	
	Kasese 206	Kyenjojo 212	Isoka 164	Chinsali 220
Improved drinking water, n (%)	58 (28.2)	111 (52.4)	69 (42.1)	76 (34.5)
Main source of water, n (%)				
Household connection*	20 (9.7)	-	68 (41.2)	-
Tube well or borehole*	22 (10.7)	81 (38.2)	-	35 (15.9)
Protected dug well*	16 (7.8)	30 (14.2)	1 (0.6)	40 (18.2)
Improved rainwater collection*	-	-	-	1 (0.5)
Unprotected dug well	4 (1.9)	92 (43.4)	51 (30.9)	141 (64.1)
Pond, river or stream	72 (35.0)	8 (3.8)	44 (26.7)	3 (1.4)
Unimproved rainwater collection	-	-	-	-
Vendor-provided water	-	-	-	-
Bottle water	-	-	-	-
Tanker truck water	-	1 (0.5)	-	-
Other ¹⁹	72 (35.0)	-	-	-
Use of the main source of water, n (%)				
Whole year	183 (88.8)	188 (88.7)	138 (83.6)	198 (90.0)
Dry season only	3 (1.5)	22 (10.4)	-	-
Wet season only	20 (9.7)	1 (0.5)	27 (16.4)	22 (10.0)
Don't know	-	1 (0.5)	-	-
N	23	23	27	22
Source of water during the rest of the year, n (%)				
Household connection	1 (0.5)	-	-	-
Tube well or borehole	-	1 (0.5)	9 (5.5)	7 (3.2)
Protected dug well	-	-	3 (1.8)	-
Improved rainwater collection	-	3 (1.4)	-	-
Unprotected dug well	-	1 (0.5)	9 (5.5)	5 (2.3)
Pond, river or stream	20 (9.7)	-	6 (3.6)	10 (4.5)
Unimproved rainwater collection	-	19 (9.0)	-	-
Vendor-provided water	-	-	-	-
Bottle water	-	-	-	-
Tanker truck water	1 (0.5)	-	-	-
Don't know	-	-	-	1 (0.5)

¹⁹ It was not specified whether tap water was from a public or private source, in the latter scenario, the source could have been classified as 'household connection'

N	Uganda		Zambia	
	Kasese 206	Kyenjojo 212	Isoka 164	Chinsali 220
Other	1 (0.5)	-	-	-
N	206	211	163	220
Person responsible for collecting water, n (%)				
Respondent	194 (94.2)	179 (84.4)	160 (97.0)	218 (99.1)
Husband/ partner	2 (1.0)	9 (4.2)	2 (1.2)	9 (4.1)
Daughter (<18y)	14 (6.8)	17 (8.0)	6 (3.6)	27 (12.3)
Son (<18y)	9 (4.4)	9 (4.2)	-	3 (1.4)
Daughter (>18y)	2 (1.0)	3 (1.4)	8 (4.8)	1 (0.5)
Son (>18y)	-	2 (0.9)	-	-
Other	5 (2.4)	21 (9.9)	3 (1.8)	1 (0.5)
Not applicable	3 (1.5)	-	-	-
Time to collect water (minutes), mean	23.4	34.7	18.3	14.9
Range	(1-120)	(2-180)	(1-180)	(1-180)
Water treatment, n (%)				
No	145 (70.4)	60 (28.3)	43 (26.1)	78 (35.5)
Yes	61 (29.6)	152 (71.7)	121 (73.3)	142 (64.5)
N	60	152	121	142
Treatment method, n (%)				
Boil	27 (45.0)	151 (99.3)	84 (69.4)	68 (47.9)
Water filter (ceramic or porous filtration)	3 (5.0)	1 (0.7)	2 (1.7)	-
Put against the sun (UV radiation)	-	-	7 (5.8)	2 (0.9)
Chemical disinfection	26 (43.3)	1 (0.7)	5 (4.1)	26 (18.3)
Floculent/désinfectant (e.g. chlorite solution)	5 (8.3)	-	48 (39.7)	71 (50.0)
Other	-	-	1 (0.8)	-
Don't know	-	-	-	1 (0.7)
Frequency of water treatment, n (%)				
Always	47 (22.8)	125 (59.0)	71 (43.0)	79 (35.9)
Usually	9 (4.4)	13 (6.1)	16 (9.7)	27 (12.3)
Sometimes	4 (1.9)	14 (6.6)	34 (20.6)	35 (15.9)

*Improved source of water

Almost all the households in both countries have a latrine, use it all year round, and during day and night time (Table 6.23). However only 53.0% (n=105) of the households have an improved latrine in Kasese, 22.7% (n=47) in Kyenjojo, 3.7% (n=6) in Isoka and 53.0% (n=171) in Chinsali. "Improved latrine" are flush or poured latrine and pit latrine with slab¹¹.

Table 6.23 Presence and use of latrine in existing districts

<i>N</i>	Uganda		Zambia	
	Kasese 206	Kyenjojo 212	Isoka 164	Chinsali 220
Presence of latrine in the household, n (%)	201 (97.6)	211 (99.5)	162 (98.2)	204 (92.7)
<i>N</i>	198	207	162	204
Improved latrine, n (%)	105 (53.0)	47 (22.7)	6 (3.7)	171 (53.0)
Type of latrine, n (%)				
Flush or poured to septic tank or pit*	-	-	-	-
Pit latrine with slab*	105 (51.0)	47 (22.2)	6 (3.6)	171 (77.7)
Public or shared latrine (any type)	5 (2.4)	2 (0.9)	-	-
Flush or pour flush somewhere	-	-	1 (0.6)	-
Open pit latrine without slab	88 (42.7)	158 (74.5)	152 (92.1)	32 (14.5)
Latrine overhanging water	-	-	1 (0.6)	1 (0.5)
Don't know	-	-	2 (1.2)	-
Use latrine, n (%)	201 (100)	209 (99.1)	162 (100)	202 (99.1)
<i>N</i>	206	212	165	220
Location of defecation when daytime during dry season				
OD (ground/forest, water body)	-	-	-	5 (2.3)
In your own latrine	201 (97.6)	205 (96.7)	161 (97.6)	204 (92.7)
In neighbour's latrine	1 (0.5)	2 (0.9)	2 (1.2)	11 (5.0)
In public latrine	2 (1.0)	2 (0.9)	-	-
Other	1 (0.5)	-	-	-
Location of defecation when daytime during wet season				
OD (ground/forest, water body)	-	-	-	6 (2.7)
In your own latrine	200 (97.1)	205 (96.7)	161 (97.6)	203 (92.3)
In neighbour's latrine	2 (1.0)	1 (0.5)	2 (1.2)	11 (5.0)
In public latrine	2 (1.0)	3 (1.4)	-	-
Other	1 (0.5)	-	-	-
Location of defecation when night time during dry season				
OD (ground/forest, water body)	-	-	-	6 (2.7)
In your own latrine	202 (98.1)	209 (98.6)	163 (98.8)	203 (92.3)
In neighbour's latrine	1 (0.5)	1 (0.5)	2 (1.2)	10 (4.5)
In public latrine	2 (1.0)	1 (0.5)	-	-
Other	1 (0.5)	-	-	-
Location of defecation when night time during wet season				
OD (ground/forest, water body)	1 (0.5)	-	-	6 (2.7)
In your own latrine	197 (95.6)	207 (97.6)	160 (97.0)	202 (91.8)
In neighbour's latrine	3 (1.5)	2 (0.9)	4 (2.4)	11 (5.0)
In public latrine	2 (1.0)	1 (0.5)	-	-
Other	1 (0.5)	-	-	-
Not applicable	1 (0.5)	-	-	-

*Improved sanitation facilities

7 Results Pillar 3: Strengthen nutrition sensitive agriculture and market development

In pillar 3, the objective of SN4A phase II, is to strengthen nutrition sensitive agriculture (NSA) and market development. The underlying hypothesis is that NSA can increase household access to nutritious foods and consequently have an impact on household and child dietary diversity.

The main activities planned are to:

- Establish hubs to demonstrate and support nutrition sensitive agriculture, including home gardens and animal source foods;
- Establish community seed banks;
- Develop market facilitation and linkages;
- Support and strengthen extension officers in gender integrated nutrition sensitive agriculture and market development;
- Engage agriculture extension service providers and linkages/collaboration with government and/or other programs.

In the new districts, SN4A phase II will analyse the year round crop availability and develop a fruit and vegetables calendar to support households on what they can grow and when. In the existing districts, SN4A will continue supporting home gardening, the school garden model and pest control and management. Based on the gaps highlighted in the endline evaluation, phase II will have a stronger focus on production and consumption of animal protein and vitamin A rich foods in both existing and new districts. Communities will be trained in fish (in Uganda), livestock, poultry and small animals' management. In addition, SN4A phase II will help communities to connect with processing companies and to access markets to sell crops. This will empower women farmers and youth to earn money to buy nutritious and diverse foods.

7.1 Agriculture and livestock production

New districts

As reported in Table 7.1, 80.6% (n=170) of the households in Kakumiro, 60.9% (n=123) in Kasama Urban and 90.6% (n=173) in Kasama Rural have access to a land that can be used for agriculture. The majority of them have access to a production plot for growing food and cash crops and a smaller group has a vegetable garden. In Kakumiro a few households also have access also to forestland/ or fruit trees and grazing/ pasture land. Most of the households grow crops on their land.

In Kakumiro, the crops produced by most households are staples (e.g. maize, potatoes) and nuts/legumes/ seed (e.g. groundnuts, beans), 98.2% (n=164) and 95.6% (n=163), respectively. A smaller proportion of households produce vegetables and cash crops. In Kasama Urban the majority of the households produce staples, 85.1% (n=103) and almost half of them produce nuts/legumes/seeds and vegetables, 52.9% (n=64) and 44.6% (n=54), respectively. In Kasama Rural, a large number of households produce staples and nuts/legumes/seeds, 91.3% (n=158) and 87.3% (n=151), respectively, and a smaller proportion grows vegetables.

In terms of livestock owned, the majority of the households in Kakumiro and Kasama Rural own poultry in Kasama Urban this is only 27.7% (n=56). In Kakumiro, also goats and pigs were quite common. Cattle, sheep and small animals are rarely reported, especially in Zambia. Only a few have a fishpond (less than 3% in all districts).

Table 7.1 Households access to agriculture and livestock in new districts

<i>N</i>	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	211	202	191
Access to any type of land, n (%)	170 (80.6)	123 (60.9)	173 (90.6)
<i>N</i>	170	122	173
Type of land used for agriculture, n (%)			
Vegetable garden	48 (28.2)	47 (38.5)	44 (25.4)
Production plot	167 (98.2)	108 (88.5)	164 (94.8)
Forestland/ fruit trees	13 (7.6)	-	-
Grazing land/Pasture land	20 (11.8)	-	-
Household grows any type of crops, n (%)			
No	4 (2.4)	1 (0.8)	1 (0.6)
Yes, often	165 (97.1)	105 (85.4)	169 (97.7)
Yes, sometimes	1 (0.6)	17 (13.8)	3 (1.7)
Types of crops produced, n (%)			
Vegetables	46 (27.5)	54 (44.6)	55 (31.8)
Fruits	16 (9.6)	1 (0.8)	2 (1.2)
Nuts/legumes/seeds	163 (95.6)	64 (52.9)	151 (87.3)
Staples	164 (98.2)	103 (85.1)	158 (91.3)
Cash crops	43 (25.7)	5 (4.1)	11 (6.4)
<i>N</i>	211	202	191
Type of livestock, n (%)			
Cattle (cows/calf/bull)	20 (9.5)	2 (1.0)	-
Sheep	5 (2.4)	1 (0.5)	-
Goat	44 (20.9)	4 (2.0)	22 (11.5)
Poultry (chicken/duck/guinea fowl)	113 (53.6)	56 (27.7)	125 (65.4)
Pig	69 (32.7)	3 (1.5)	20 (10.5)
Small animal (rabbit/guinea pig)	4 (1.9)	6 (3.0)	5 (2.6)
Fishpond	5 (2.4)	3 (1.5)	5 (2.6)

Focusing on vegetables gardens, only 9 respondents in Kakumiro reported to irrigate their garden during dry season, one in Kasama Urban and one in Kasama Rural. However, data collection about this topic was not well implemented so these findings may be an underestimation. Reasons for not irrigating are mainly the distance to the water source, lack of tools and because the soil is close to a wetland and it is never dry. The respondents reported that the main source of vegetable seeds is the local market in Kakumiro and the input store in Kasama Urban and Kasama Rural (Table 7.2).

Table 7.2 Source of vegetable seeds in new districts

<i>N</i>	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	41	42	36
Source of vegetable seeds, n (%)			
Community seed bank	8 (19.5)	5 (11.9)	2 (5.6)
Neighbour	5 (12.2)	10 (23.8)	12 (33.3)
Input store	13 (31.7)	27 (64.3)	22 (61.1)
Local market	21 (51.2)	7 (16.7)	4 (11.1)
Own saved seeds	3 (7.3)	-	1 (2.8)
Other	-	-	-

When asked about the importance of crop diversification, the majority of the respondents in all districts said that it is important to grow different crops for the soil quality, 49.3% (n=74) in Kakumiro, 35.8% (n=43) in Kasama Urban, and 34.4% (n=62) in Kasama Rural. The importance of crop diversification for dietary diversification was the second most reported answer in districts in

Zambia. “Other” reasons reported were better health, save money and prevent famine. In both country, almost all the respondents mentioned that own production can have an impact on the nutritional status of the members of the households (Table 7.3).

Table 7.3 Knowledge on link between agriculture and nutritional status in new districts

N	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	150	120	180
Reason of importance of growing diverse crops, n (%)			
Diversity of diet	8 (5.3)	19 (15.8)	19 (10.6)
Risk mitigation strategy in case of crop failure	2 (1.3)	-	-
Better for the soil	74 (49.3)	43 (35.8)	62 (34.4)
Income opportunity	1 (0.7)	-	1 (0.6)
Don't know	3 (2.0)	6 (5.0)	3 (1.7)
Other	24 (16.0)	7 (5.8)	7 (3.9)
N	211	202	191
Impact on nutritional status of own production, n (%)			
No	11 (5.2)	3 (1.5)	3 (1.6)
Yes	192 (91.0)	196 (97.0)	187 (97.9)
Don't know	8 (3.8)	3 (1.5)	1 (0.5)

Existing districts

The findings show that 89.3% (n=184) of the households in Kasese, 87.7% (n=186) in Kyenjojo, 99.4% (n=164) in Isoka and 98.6% (n=217) in Chinsali have access to a land that can be used for agriculture. The majority of them have access to a production plot for growing food and cash crops and a smaller group has a vegetable garden, especially in Chinsali. In Uganda 20-30% of the households also have access also to forestland/or fruit trees. Other type of land reported in Kyenjojo was wetland (Table 7.4).

In all districts staples (i.e. cereals, tubers and roots) are the main crops produced, 90.2% (n=166) in Kasese, 81.6% (n=151) in Kyenjojo, 96.3% (n=157) in Isoka, and 93.1% (n=202) in Chinsali. In both districts in Uganda also the other crops, such as vegetables, fruits, nuts/legumes/seeds, and cash crops were frequently mentioned. In contrast, in Zambia, the production is focused on nuts/legumes/nuts and vegetables, slightly more in Isoka rather than Chinsali.

Table 7.4 Household access to land for agriculture and crop production in existing districts

N	Uganda	Zambia		
	Kasese	Kyenjojo	Isoka	Chinsali
	206	212	165	220
Access to any type of land that can be used for agriculture, n (%)	184 (89.3)	186 (87.7)	164 (99.4)	217 (98.6)
Type of land, n (%)				
Vegetable garden (home garden/ garden along stream)	73 (41.0)	101 (54.9)	67 (41.1)	25 (11.5)
Production plot/ field belonging to HH/ family	173 (97.2)	180 (97.8)	156 (95.7)	217 (100)
Forestland/ fruit trees	61 (34.3)	39 (21.2)	12 (7.4)	16 (7.4)
Grazing land/ pasture land	6 (3.4)	13 (7.1)	9 (5.5)	2 (0.9)
Other	-	7 (3.3)	-	-
N	184	185	163	217
Type of crops produced, n (%)				
Vegetables	101 (54.9)	117 (63.2)	79 (48.5)	54 (24.9)
Fruits	132 (71.7)	104 (56.2)	13 (8.0)	6 (2.8)
Nuts/legumes/seeds	175 (85.0)	184 (99.5)	112 (68.7)	142 (64.4)
Staples	166 (90.2)	151 (81.6)	157 (96.3)	202 (93.1)
Cash crops	106 (57.6)	45 (24.3)	19 (11.7)	36 (11.6)
Other	-	1 (0.5)	-	-

Of the households that use their land for vegetable production, the majority irrigates their vegetable plot during the dry season, 61.6% (n=61) in Kasese, 58.1% (n=68) in Kyenjojo, 96.1% (n=75) in Isoka, and 87.0% (n=47) in Chinsali. Respondent who's household did not irrigate the vegetable plot explained that the distance to the water source is too long (for 47.8% n=22 in Kyenjojo and 100% in Isoka). In Kasese, it was the lack of knowledge on how to irrigate the plot, while in Chinsali more than half of the respondents reported the lack of water as the barrier to irrigation (Table 7.5).

In Uganda, the respondents reported that they source their vegetable seeds from the neighbours (42.4%, n=42 in Kasese, and 36.2%, n=42 in Kyenjojo) and own saved seeds (39.4%, n=39 in Kasese, and 39.8%, n=45 in Kyenjojo). In Zambia, local market was most often mentioned as a source of seeds, 93.7% (n=74) in Isoka and 61.1% (n=33) in Chinsali.

Table 7.5 *Vegetables plot irrigation and source of seeds in existing districts*

N	Uganda		Zambia	
	Kasese 99	Kyenjojo 117	Isoka 78	Chinsali 54
Vegetables plot irrigated during dry season, n (%)				
Yes	61 (61.6)	68 (58.1)	75 (96.1)	47 (87.0)
No	38 (38.4)	47 (40.2)	3 (3.8)	7 (12.9)
Don't know	-	2 (1.7)	-	-
N	38	46	3	7
Reason why the vegetables plot is not irrigated during dry season, n (%)				
Lack of water	9 (23.7)	8 (17.4)	-	4 (57.1)
Distance of water source	23 (11.2)	22 (47.8)	3 (100)	3 (42.9)
Lack of money	7 (3.4)	4 (1.9)	-	-
Lack of knowledge on how to irrigate the plot	15 (39.5)	10 (21.7)	-	-
Lack of tools	3 (7.9)	6 (13.0)	-	-
Don't know	-	6 (13.0)	-	2 (29.6)
Other	2 (5.3)	5 (10.9)	-	-
N	99	116	79	54
Source of vegetable seeds, n (%)				
Community seed bank	28 (5.6)	50 (43.1)	2 (2.5)	3 (1.4)
Neighbour	42 (42.4)	42 (36.2)	6 (7.6)	1 (1.9)
Input store	1 (1.0)	2 (1.7)	22 (27.8)	11 (20.4)
Local market	12 (12.1)	30 (25.9)	74 (93.7)	33 (61.1)
Own saved seeds	39 (39.4)	45 (38.8)	28 (35.4)	13 (24.1)
Other	28 (28.3)	17 (14.7)	1 (1.3)	2 (3.7)

In response to the question on perceived importance of crop diversity, the majority of the respondents in all districts said that growing different crops is important to diversify the diet, ranging from 84.6% (n=184) in Chinsali to 93.5% (n=174) in Kyenjojo. Crops diversity is also seen as an income opportunity in both countries. In both countries, almost all the respondents think that own food production can have an impact on the nutritional status of the members of the households (Table 7.6).

Table 7.6 Importance of crop diversity in existing districts

<i>N</i>	Uganda		Zambia	
	Kasese	Kyenjojo	Isoka	Chinsali
	184	186	164	217
Reason of importance of growing diverse crops, n (%)				
Diversity of diet	160 (87.0)	174 (93.5)	148 (90.2)	184 (84.6)
Risk mitigation strategy in case of crop failure	10 (5.4)	34 (18.3)	27 (16.7)	7 (3.2)
Better for the soil	-	22 (11.8)	6 (3.7)	-
Income opportunity	94 (51.1)	87 (46.8)	134 (81.7)	136 (61.8)
Don't know	3 (1.6)	-	7 (4.3)	4 (1.8)
Other	19 (10.3)	12 (6.5)	-	-
<i>N</i>	204	211	163	217
Impact on nutritional status of own production, n (%)				
No	3 (1.5)	-	2 (1.2)	4 (1.8)
Yes	200 (97.1)	208 (98.1)	157 (95.2)	209 (95.0)
Don't know	1 (0.5)	3 (1.4)	4 (2.4)	4 (1.8)

7.2 Gender dynamics and decision-making on agriculture and livestock

New districts

Responsibility and decision making on agricultural crop production

The results on gender dynamics and decision-making were based on questions assessing who is responsible for crop management and who makes decisions on crop production.

The findings on intra-household responsibilities show that working in the vegetable garden is considered a shared activity more in Zambia rather than Uganda (Table 7.7). Decisions on what to produce in the vegetable garden, are made more often by the respondents themselves in Uganda (48.2% (n=27) of the respondents in Kakumiro), whereas in the districts in Zambia, male partner often plays a bigger role.

The findings show that work on the production plots for both counties is considered mostly a joint activity: 40.5% (n=66) of the respondents in Kakumiro, 52.3% (n=56) in Kasama Urban and 76.8% (n=116) in Kasama Rural. Decisions on what crops to grow on the production plots in both countries are made mostly jointly or by the male partner.

Very few respondents reported to have a forest/fruit trees and grazing land, mostly in Kakumiro, and responsibilities for work and decision-making are mainly shared between the respondents and their partner.

Table 7.7 *Intra-household responsibilities and decision-making on agricultural production in new districts*

<i>N</i>	Uganda	Zambia	
	Kakumiro 60	Kasama Urban 51	Kasama Rural 56
Who is responsible for the work in the vegetable garden, n (%)			
Respondent	33 (55.0)	16 (31.4)	8 (14.3)
Jointly male and female households members	8 (13.3)	16 (31.4)	34 (60.7)
Other female household members	2 (3.3)	4 (7.8)	-
Husband/male partner/ boyfriend	5 (8.3)	10 (19.6)	11 (19.6)
Other male household members	-	4 (7.8)	-
None of the household members	11 (18.3)	1 (2.0)	1 (1.8)
Don't know	1 (1.7)	-	2 (3.6)
Who decides what to produce in the vegetable garden, n (%)			
Respondent	27 (48.2)	15 (29.4)	8 (17.4)
Jointly male and female households members	7 (12.5)	11 (21.6)	15 (32.6)
Other female household members	1 (1.8)	3 (5.9)	-
Husband/male partner/ boyfriend	8 (14.3)	18 (35.3)	22 (47.8)
Other male household members	2 (3.6)	3 (5.9)	-
None of the household members	11 (19.6)	1 (2.0)	1 (2.2)
<i>N</i>	163	107	151
Who is responsible for the work in production plot, n (%)			
Respondent	36 (22.1)	15 (14.0)	14 (9.3)
Jointly male and female households members	66 (40.5)	56 (52.3)	116 (76.8)
Other female household members	3 (1.8)	12 (11.2)	1 (0.7)
Husband/male partner/ boyfriend	52 (31.9)	18 (16.8)	18 (11.9)
Other male household members	6 (3.7)	6 (5.6)	2 (1.3)
Who decides what to produce in the production plot, n (%)			
Respondent	30 (18.3)	14 (13.7)	12 (8.1)
Jointly male and female households members	50 (30.5)	38 (37.3)	82 (55.0)
Other female household members	3 (1.8)	10 (9.8)	3 (2.0)
Husband/male partner/ boyfriend	74 (45.1)	34 (33.3)	49 (32.9)
Other male household members	6 (3.7)	6 (5.9)	2 (1.3)
None of the household members	1 (0.6)	-	1 (0.7)
<i>N</i>	29	3	6
Who is responsible for the work in the forest/fruit tree, n (%)			
Respondent	1 (3.4)	1 (33.3)	1 (16.7)
Jointly male and female households members	10 (34.5)	-	3 (50.0)
Other female household members	1 (3.4)	-	-
Husband/male partner/ boyfriend	3 (10.3)	-	-
None of the household members	14 (48.3)	3 (66.7)	1 (16.7)
Who decides what to produce in the forest/fruit tree, n (%)			
Respondent	1 (4.0)	1 (2.0)	-
Jointly male and female households members	13 (52.0)	-	2 (33.3)
Other female household members	-	-	-
Husband/male partner/ boyfriend	3 (12.0)	1 920.0)	2 (33.3)
Other male household members	-	2 (40.0)	-
None of the household members	8 (32.0)	-	2 (33.3)
Don't know	-	1 (20.0)	-
<i>N</i>	35	3	1
Who is responsible for the work in the grazing land, n (%)			
Respondent	6 (17.1)	-	-
Jointly male and female households members	6 (17.1)	-	-
Other female household members	1 (2.9)	-	-
Husband/male partner/ boyfriend	5 (14.3)	-	-
Other male household members	4 (11.4)	-	-
None of the household members	12 (34.3)	2 (66.7)	-
Don't know	1 (2.9)	1 (33.3)	1 (100)
Who decides what to produce in the grazing land, n (%)			
Respondent	3 (9.7)	1 (33.3)	-
Jointly male and female households members	7 (22.6)	-	-
Other female household members	1 (3.2)	-	-
Husband/male partner/ boyfriend	9 (29.0)	-	-
Other male household members	2 (6.5)	-	-
None of the household members	9 (29.0)	2 (66.7)	1 (100)

Responsibility and decision making on livestock

The results on gender dynamics and decision-making were based on questions relating to who is responsible for and who makes decision on livestock. As mentioned above the number of households that own cattle, sheep, small animals and fishponds is very limited in both countries.

Households in Kakumiro and in Kasama Rural mainly own goats. In Uganda, according to 38.6% (n=17) of the respondents, it is the responsibility of the women to take care of goats, but 47.7% (n=21) reported that the decisions are made by the partner. In Zambia in almost half of the goat owning households, the husband is the person responsible to take care of and makes decision on the goats (45.5%, n=10; 54.5%, n=12, respectively).

Regarding the poultry, in Kakumiro, the respondents are the main responsible for keeping the animals (63.7%, n=72). However, the partner of the respondents makes the decisions on the poultry. In both districts in Zambia, responsibilities and decision making on the poultry were mostly reported to be joint activities.

Similarly, pigs are mainly owned in Kakumiro. According to 49.3% (n=34) of the women, they are responsible for looking after the pigs, but 58.0% (n=40) of the respondents reported that their partner is the person who makes decision related to the pigs (Table 7.8).

Table 7.8 *Intra-household responsibilities and decision –making on livestock in new districts*

	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
<i>N</i>	20	2	0
Who is responsible for looking after the cattle, n (%)			
Respondent	3 (15.0)	-	-
Jointly male and female households members	6 (30.0)	1 (50.0)	-
Other female household members	-	-	-
Husband/male partner/ boyfriend	5 (25.0)	-	-
Other male household members	6 (30.0)	-	-
None of the household members	-	1 (50.0)	-
Who makes decision on the cattle, n (%)			
Respondent	2 (10.0)	-	-
Jointly male and female households members	3 (15.0)	1 (50.0)	-
Other female household members	-	-	-
Husband/male partner/ boyfriend	13 (65.0)	-	-
Other male household members	2 (10.0)	-	-
None of the household members	-	1 (50.0)	-
<i>N</i>	5	1	0
Who is responsible for looking after the sheep, n (%)			
Respondent	2 (40.0)	-	-
Jointly male and female households members	-	-	-
Other female household members	-	-	-
Husband/male partner/ boyfriend	-	-	-
Other male household members	3 (60.0)	-	-
None of the household members	-	1 (100)	-
Who makes decision on the sheep, n (%)			
Respondent	1 (20.0)	-	-
Jointly male and female households members	-	-	-
Other female household members	-	-	-
Husband/male partner/ boyfriend	3 (60.0)	-	-
Other male household members	1 (20.0)	-	-
None of the household members	-	1 (100)	-
<i>N</i>	44	4	22
Who is responsible for looking after the goat, n (%)			
Respondent	17 (38.6)	-	-
Jointly male and female households members	9 (20.5)	1 (25.0)	9 (40.9)

N		Uganda	Zambia	
		Kakumiro	Kasama Urban	Kasama Rural
		20	2	0
	Other female household members	2 (4.5)	1 (25.0)	1 (4.5)
	Husband/male partner/ boyfriend	5 (11.4)	-	10 (45.5)
	Other male household members	7 (15.9)	1 (25.0)	1 (4.5)
	Children/ younger member of the household	2 (4.5)	-	-
	None of the household members	2 (4.5)	1 (25.0)	1 (4.5)
Who makes decision on the goat, n (%)				
	Respondent	5 (11.4)	-	-
	Jointly male and female households members	10 (22.7)	1 (25.0)	7 (31.8)
	Other female household members	2 (4.5)	1 (25.0)	-
	Husband/male partner/ boyfriend	21 (47.7)	-	12 (54.5)
	Other male household members	5 (11.4)	1 (25.0)	1 (4.5)
	None of the household members	1 (2.3)	1 (25.0)	2 (9.1)
N		113	56	125
Who is responsible for looking after the poultry, n (%)				
	Respondent	72 (63.7)	13 (23.2)	36 (28.8)
	Jointly male and female households members	27 (23.9)	17 (30.4)	49 (39.2)
	Other female household members	3 (2.7)	7 (12.5)	6 (4.8)
	Husband/male partner/ boyfriend	5 (4.4)	5 (8.9)	14 (11.2)
	Other male household members	3 (2.7)	7 (12.5)	5 (4.0)
	Children/ younger member of the household	1 (0.9)	1 (1.8)	1 (0.8)
	None of the household members	2 (1.8)	4 (7.2)	14 (11.2)
Who makes decision on the poultry, n (%)				
	Respondent	25 (22.1)	11 (19.6)	24 (19.2)
	Jointly male and female households members	16 (14.2)	22 (39.3)	52 (41.6)
	Other female household members	4 (3.5)	6 (10.7)	2 (1.6)
	Husband/male partner/ boyfriend	61 (54.0)	3 (5.4)	29 (23.2)
	Other male household members	5 (4.4)	7 (12.5)	3 (2.4)
	Children/ younger member of the household	1 (0.9)	-	-
	None of the household members	1 (0.9)	5 (9.0)	15 (12.0)
N		69	3	20
Who is responsible for looking after the pigs, n (%)				
	Respondent	34 (49.3)	-	-
	Jointly male and female households members	17 (24.6)	-	7 (35.0)
	Other female household members	2 (2.9)	-	-
	Husband/male partner/ boyfriend	9 (13.0)	1 (33.3)	9 (45.0)
	Other male household members	2 (2.9)	-	-
	None of the household members	5 (7.2)	2 (66.7)	4 (20.0)
Who makes decision on the pigs, n (%)				
	Respondent	11 (15.9)	-	-
	Jointly male and female households members	11 (15.9)	-	5 (25.0)
	Other female household members	1 (1.4)	-	11 (55.0)
	Husband/male partner/ boyfriend	40 (58.0)	1 (33.3)	-
	Other male household members	3 (4.3)	-	-
	None of the household members	3 (4.3)	2 (66.7)	4 (20.0)
N		4	6	5
Who is responsible for looking after the small animals (rabbit, guinea pig), n (%)				
	Respondent	1 (25.0)	1 (16.7)	-
	Jointly male and female households members	1 (25.0)	-	-
	Other female household members	-	-	-
	Husband/male partner/ boyfriend	-	-	2 (40.0)
	Other male household members	1 (25.0)	2 (33.3)	-
	Children/ younger member of the household	1 (25.0)	1 (16.7)	-
	None of the household members	-	2 (33.3)	3 (60.0)
Who makes decision on the small animals (rabbit, guinea pig), n (%)				
	Respondent	1 (25.0)	1 (16.7)	-
	Jointly male and female households members	1 (25.0)	1 (16.7)	-

<i>N</i>		Uganda	Zambia	
		Kakumiro	Kasama Urban	Kasama Rural
		20	2	0
	Other female household members	-	-	-
	Husband/male partner/ boyfriend	-	-	3 (60.0)
	Other male household members	1 (25.0)	1 (16.7)	-
	Children/ younger member of the household	1 (25.0)	1 (16.7)	-
	None of the household members	-	1 (16.7)	2 (40.0)
<i>N</i>		5	3	5
Who is responsible for looking after the fishpond, n (%)				
	Respondent	-	-	-
	Jointly male and female households members	1 (20.0)	-	-
	Other female household members	-	-	-
	Husband/male partner/ boyfriend	-	-	1 (20.0)
	Other male household members	1 (20.0)	-	-
	Children/ younger member of the household	-	-	-
	None of the household members	3 (60.0)	3 (100)	4 (80.0)
Who makes decision on the fishpond, n (%)				
	Respondent	-	-	-
	Jointly male and female households members	-	-	-
	Other female household members	-	-	-
	Husband/male partner/ boyfriend	1 (20.0)	-	1 (20.0)
	Other male household members	1 (20.0)	-	4 (80.0)
	None of the household members	3 (60.0)	3 (100)	-

7.3 Household food insecurity

New districts

The food security situation was assessed by the question on the number of months that the respondents' household experienced food shortage in the previous year and using the Household Food Insecurity Experience Scale (FIES).

Overall, in Kakumiro and in Kasama Urban almost half of the respondents reported that in the past 12 months there had been time when the members of the households went hungry. Differently, in Kasama Rural around 35% of the households experienced hunger in the past 12 months. The findings show an average of 1.6 (sd 0.8) months of household food shortage in Kakumiro, 1.7 (sd 1.4) months in Kasama Urban, and 1.6 (sd 0.9) months in Kasama Rural (Table 7.9). The graph (Figure 7.1) shows that food shortage was highest in April and May in Uganda; and in January and February in Kasama.

Table 7.9 Months of household food shortage in new districts

<i>N</i>	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
	102	106	64
Months of food shortage, mean (sd)	1.6 (0.8)	1.7 (1.4)	1.6 (0.9)

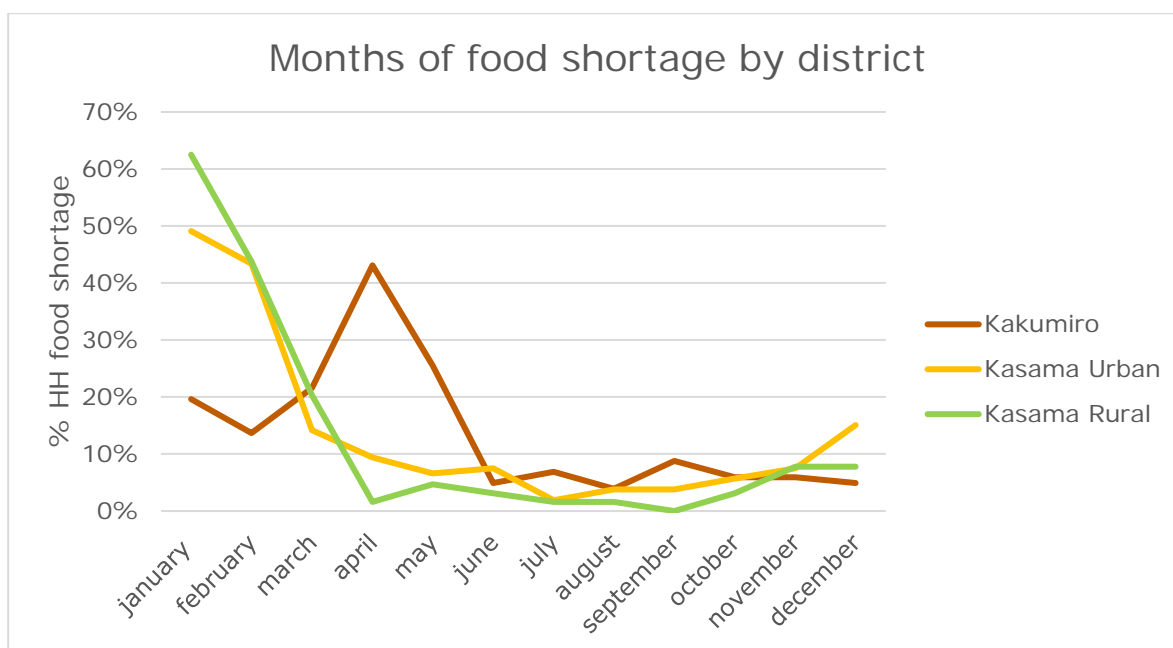


Figure 7.1 Months of food shortage new districts

The household food security situation was further assessed using the FIES (Table 7.10). This is based on eight questions related to concerns and experiences of access and availability of adequate food over the past 12 months due to lack of money or resources. This method is universal and makes the results comparable across districts and countries. The questions are used to categorize households as either food secure, mildly secure (worrying regarding the ability to obtain food), moderately secure (compromising quality, variety and quantity of the food), and severe insecure (experiencing hunger). The majority of the households in both countries was found to be either moderately or severely food insecure: with 59.2% (n=125) in Kakumiro, 77.9% (n=155) in Kasama Urban, and 62.0% (n=116) in Kasama Rural. Severe food insecurity was more common than moderate food insecurity. Only less than a quarter of the respondents perceived their households as being food secure: 22.3% (n=47) in Kakumiro, 13.1% (n=26) in Kasama Urban and 24% (n=46) in Kasama Rural.

Table 7.10 Household Food Insecurity Experience (FIES) in new districts

	Uganda	Zambia	
	Kakumiro	Kasama Urban	Kasama Rural
<i>N</i>	211	199	187
Household Food Insecurity Experience (FIES), n (%)			
Secure	47 (22.3)	26 (13.1)	46 (24.6)
Mild insecurity	39 (18.5)	18 (9.0)	25 (13.4)
Moderate insecurity	30 (14.2)	41 (20.6)	46 (24.6)
Severe insecurity	95 (45.0)	114 (57.3)	70 (37.4)
FI _{mod+sev.} n (%)	125 (59.2)	155 (77.9)	116 (62.0)

7.4 Market linkages

New districts

The average distance from the main road on foot was reported to be 23.9 minutes in Kakumiro, 17.8 minutes in Kasama Urban, and 45.1 minutes in Kasama Rural. Additionally the nearest market seems to be almost two hours of walking for the households in Kakumiro, and on average 24.4 minutes for the respondents in Kasama Urban and around one hour in Kasama Rural.

In Uganda, according to 77.6% (n=163) of the respondents, the production is sold to a trader, while in Zambia, 66.2% (n=133) of the households in Kasama Urban do not sell it and 55.5% (n=106) in Kasama Rural sell it directly in the market. The person responsible for selling is most often either the respondent herself or the partner of the respondents in both countries.

Almost none of the respondents reported to not have a contract with the trader or the company and overall the women do not decide the prices, except in Kasama Urban, where 51.6% (n=33) of the respondents mentioned to decide the price (Table 7.11).

Table 7.11 *Market linkages in new districts*

N	Uganda	Zambia	
	Kakumiro 211	Kasama Urban 202	Kasama Rural 191
Distance to the nearest main road by foot, mean (minutes) (sd)	23.9 (34.3)	17.8 (19.6)	45.1 (54.9)
Range	(1-240)	(1-99)	(1-300)
Distance to the nearest market by foot, mean (minutes)	117.5 (102.5)	24.4 (23.3)	58.9 (56.3)
Range	(2-420)	(0-120)	(0-300)
To whom or where the food is sold, n (%)			
Directly in the market	24 (11.4)	54 (26.9)	106 (55.5)
To a company	-	9 (4.5)	22 (11.5)
To a trader	163 (77.6)	7 (3.5)	43 (22.5)
Don't sell it	35 (16.7)	133 (66.2)	37 (19.4)
Other	1 (0.5)	1 (0.5)	1 (0.5)
Respondent responsible for selling, n + %			
No	121 (57.3)	27 (13.4)	69 (36.1)
Yes	51 (24.2)	36 (17.8)	84 (44.0)
Don't know	-	-	-
Who is responsible, n (%)			
Jointly female and male of the household	25 (20.8)	5 (18.5)	11 (15.9)
Spouse	89 (74.2)	13 (48.1)	51 (73.9)
Other female of the household	2 (1.7)	4 (14.8)	5 (7.2)
Other male of the household	4 (3.3)	6 (22.2)	4 (5.8)
Children	-	-	1 (1.4)
Don't know	1 (0.8)	-	-
Other	1 (0.8)	-	-
Presence of a contract, n (%)			
No	165 (95.4)	62 (96.9)	149 (97.4)
Yes	8 (4.6)	2 (3.1)	4 (2.6)
Decision on the price, n (%)			
No	119 (68.8)	30 (46.9)	92 (60.1)
Yes	46 (26.6)	33 (51.6)	61 (39.9)
Don't know	8 (4.6)	1 (1.6)	-

Existing districts

The average distance by foot to the main road is 28.6 minutes in Kasese, 38.5 minutes in Kyenjojo, 94.3 minutes in Isoka, and 42.3 minutes in Chinsali. Overall, the nearest market was more distant in

the existing districts as compared to the news. In Uganda, to reach the nearest market the women have to walk on average around 1/1.5 hour, while in Zambia around 2/2.5 hours (Table 7.12).

The majority of the households reported to sell their products directly in the market: 68.7% (n=134) in Kasese, 69.7% (n=140) in Kyenjojo, 88.5% (n=146) in Isoka, and 50.9% (n=112); and in Zambia, a large groups of respondents mentioned to sell to a trader: 73.3% (n=121) in Isoka and 55.9% (n=123) in Chinsali. In Uganda, the person responsible for selling the products is most often the respondent herself. In Zambia, selling the products is mostly the responsibility of the husband, or a joint responsibility between female and male in the household.

The majority of the households do not have a contract with a trader or company, specifically 80.6% (n=166) in Kasese, 75.9% (n=161) in Kyenjojo, 97.0% (n=160) in Isoka, and 87.3% (n=78) in Chinsali. However, the majority of the respondents reported that they decide the price of the products.

Table 7.12 Market linkages in existing districts

N	Uganda		Zambia	
	Kasese 206	Kyenjojo 212	Isoka 165	Chinsali 220
Distance to the nearest main road by foot, mean (minutes)	28.6	39.5	94.3	42.3
Range	(1-240)	(1-180)	(1-700)	(1-360)
Distance to the nearest market by foot, mean (minutes)	51.5	93.7	115.4	152.9
Range	(1-300)	(2-300)	(3-650)	(1-800)
To whom or where the food is sold, n (%)				
Directly in the market	134 (68.7)	140 (69.7)	146 (88.5)	112 (50.9)
To a company	-	11 (5.5)	33 (20.0)	37 (16.8)
To a trader	43 (22.1)	63 (31.3)	121 (73.3)	123 (55.9)
Don't sell it	37 (19.0)	44 (21.9)	8 (4.8)	23 (10.5)
Don't know	-	-	1 (0.6)	1 (0.5)
Other	5 (2.6)	5 (2.5)	-	15 (6.8)
Responsible for selling, n + %				
No	56 (27.2)	68 (32.1)	87 (52.7)	136 (61.8)
Yes	130 (63.1)	103 (48.6)	75 (45.5)	57 (25.9)
Don't know	6 (2.9)	16 (7.5)	-	1 (0.5)
N	48	90	88	139
Who is responsible, n (%)				
Jointly female and male of the household	11 (5.3)	26 (28.9)	36 (40.9)	86 (39.1)
Spouse	12 (25.0)	20 (22.2)	51 (58.0)	55 (39.6)
Other female of the household	6 (12.5)	6 (6.7)	-	1 (0.5)
Other male of the household	2 (4.2)	5 (5.6)	2 (2.3)	-
Children	-	1 (0.5)	3 (3.4)	-
Don't know	9 (18.8)	1 (1.1)	-	-
Other	9 (18.8)	44 (48.9)	7 (8.0)	-
N	206	212	165	220
Presence of a contract, n (%)				
No	166 (80.6)	161 (75.9)	160 (97.0)	192 (87.3)
Yes	16 (7.8)	13 (6.1)	1 (0.6)	4 (1.8)
Don't know	10 (4.9)	16 (7.5)	-	-
Decision on the price, n (%)				
No	77 (37.4)	76 (35.8)	42 (25.5)	78 (35.5)
Yes	104 (50.5)	97 (45.8)	117 (70.9)	115 (52.3)
Don't know	10 (4.9)	16 (7.5)	3 (1.8)	4 (1.8)

8 Conclusions and recommendations for SN4A Phase II

8.1 Outcome level

The overall objectives of the two surveys were to assess the food and nutrition security situation in the newly targeted districts and to monitor behaviour change in the existing districts in order to plan the implementation of SN4A phase II project.

Key conclusions are summarized by outcome area:

Nutrition and diet: In addition to the new districts, stunting prevalence among children aged 6-23 months was also measured in the existing districts in Uganda. Findings indicated a stunting prevalence of 30-35% in all districts. In Uganda, the observed stunting rates are slightly higher than the national rate of 29% of children under five reported in the Uganda Demographic and Health Survey (UDHS 2016). Stunting rates observed in Zambia however, are lower compared to the 40% reported in the Zambia DHS (ZDHS 2013-2014).

Findings on dietary diversity showed a prevalence of children with adequate MDD around 40% in all new districts. Food groups with the lowest consumption rates were milk and dairy products, and eggs. Particularly low is also the MAD among breastfed children in Kasama Urban. The prevalence of women with adequate minimum dietary diversity (MDD-W) is low, mostly because milk and dairy products, fruits, vitamin A rich foods, and eggs are missing from the women's diet. In Kakumiro, also women's consumption of dark green leafy vegetables was also low.

Access to nutritious crops: Low farm diversity was observed in Kasama Urban, which could be explained by the urban context. In the other two new districts, Kakumiro and Kasama Rural, the households own more crops than livestock. Crop diversity scores were low in all districts. On average, households produce 4 different crops, most of which are staple foods. This finding could be linked to the high consumption of staples and low dietary diversity score. Since in this survey maize was included as food crop rather than cash crop, cash crops are not very common in all districts.

Hygiene: The diarrhoea prevalence is relatively high, varying from 34 to 43%. Since the diarrhoea prevalence was included anew in SN4A phase II, a baseline value was also established for the existing districts. In existing districts, the percentage of children who suffered from diarrhoea in the two weeks prior to the survey was equally high and comparable with the new districts, varying from 32 to 44%. These findings underpin and substantiate the SN4A phase II strategy to intensify the WASH component in the project implementation.

8.2 Pillar 1: Triggering and maintaining demand for dietary diversity and hygiene

The overall conclusion is that in the new districts it seems that there is already awareness on stunting and the link between stunting and quality of the diet, but less so to sanitation and hygiene practices. The main source of health and nutrition information is the health clinic. In Kasama Rural and Kakumiro, agriculture extension agents are the most important source of information. However, in Kakumiro a considerable part of the respondent claimed that they had not have received any information in the past six months. These findings reiterate the necessity to intensify the WASH component in the project implementation.

Recommendations for implementation in SN4A Phase II are:

- In the new districts, some basic nutrition knowledge is already in place, but responses showed that people do not consider poor water and sanitation practises as one of the causes of stunting. *It is recommended to emphasize the link between nutrition outcomes and WASH during the triggering activities.*
- In addition to the above, diarrhoea prevalence is disturbingly high, and most of the households in the existing and new districts are using unimproved water sources, such as unprotected dug wells, ponds, rivers and streams. Nutrition outcomes are hard to achieve if people do not have access to clean water. *It is recommended to include demand creation among communities for access to improved water sources.*
- The most common toilet is a pit latrine without a slab. *It is recommended that triggering sessions should be geared towards getting people to invest in their toilet and ensure that their household has access to and improved latrine, which reduces the chance that diseases are spread.*
- A quarter of the respondents in Kakumiro did not receive any information or support on agriculture during 6 months prior to the survey. *It is recommended to use the triggering sessions in Kakumiro to clarify the role of agriculture extension agents and trigger demand for nutrition sensitive agricultural support.*

8.3 Pillar 2: SBCC strategy

Based on the survey findings, it can be concluded that women are usually responsible for the preparation of the food but less involved in the decision on how to allocate the income or whether to consume or sell the food of the household's own production. The gender dynamics around the consumption of ASF are not equal within the household's members. Generally, either the partner or the children are served first. The overall intake of ASF is low in both new and existing districts and men generally get the bigger share and control access to AFS, particularly in Uganda, whereas in Zambia it is more often the women. Our findings indicated that in the new districts, the ASF were purchased mainly by the husband/partner in Kakumiro but by the women in Kasama Urban and Rural. Also in the existing districts ASF are purchased mainly by the husband but by the women in Kasese. In both new and existing districts, beef and fish are the main ASF purchased.

The majority of the children in both new and existing districts are still breastfed; only in Kasama Urban, the prevalence is slightly lower as compared to the other districts. The majority of the women, who stopped breastfeeding before 2 years, did so because they thought that the child is too old for breastmilk. In Kakumiro and Kyenjojo, many women stopped breastfeeding because they are pregnant again. However, in all new districts a high prevalence of respondents was advised to exclusively breastfed the child for 6 months. In the existing districts, exclusive breastfeeding for six months was considered important as it prevents stunting and has nutritional value. In all districts, the main problem for providing diverse complementary foods is lack of money, followed by lack of social support (Kakumiro), or lack of availability of diverse nutritious food (Kasese and Isoka).

Regarding WASH indicators, the prevalence of respondents who wash their hands with soap is high in the new districts, especially before eating and after defecation. The situation in the existing districts is similar, but in Zambia women also reported to wash their hands before preparing food and before feeding the child in all districts. These good practices are confirmed to the awareness of the prevention of disease and diarrhoea, spread of germs and good hygiene practice. However, a small number of households in the new districts have fixed handwashing facilities.

The main source of water in the *new* districts is an unprotected dug well but around 60% of the respondents across all districts reported to treat it by boiling. Use of disinfectants was reported in Kasama Urban and Rural. In the *existing* districts, in Kasese the main source of water is tap water while in the other districts is unprotected dug well in addition to tub well or borehole (Kyenjojo). Only in Kasese, the prevalence of women who treat the water is very low. The main treatment methods are boiling (all districts) and use of disinfectants (Isoka and Chinsali).

In the new districts, the use of improved sanitation facilities is low and the most common type is a pit latrine without slab. The situation in Kyenjojo and Isoka is similar. In Kasese and Chinsali, though, almost half of the households have an improved latrine, specifically a pit latrine with slab.

Recommendations for implementation in SN4A Phase II are:

- Husbands/male partners receive the main share of animal source food. Improved intra household distribution could increase women and children's dietary diversity and thereby the micronutrient adequacy of their diet. Women explained that husband/male partners receive the main share of animal source foods as a sign of respect. *It is recommended that BBC messaging focuses on the intra household distribution of animal source foods and the benefits for women and children, whereby current consumption patterns and practises should be explored and questioned if needed in order to identify ways for change.*
- The KAP survey results showed that women discontinue breastfeeding feeding their under-two child because they think the child is too old to be breastfed. *It is recommended to specifically encourage continuation of breastfeeding up to two years of age in the BCC messaging.*
- It was found that women find it difficult to provide diverse and nutritious complementary food for their children due to a lack of money. In Kakumiro, for example, in one out of two households, the man decides how household income is allocated. *It is recommended to explore further, whether this concern is related to the level of household income, to women's access to income, or both. If the household income is simply too low, the project could intensify support to households to produce nutritious crops for home consumption, or help facilitate market access for income generation.*
- Diarrhoea prevalence is of high concern and poor WASH practices were observed in both existing and new districts. Even when diarrheal episodes are not fatal, illness early in life can have long-term effects on child growth and development. Only very few people have a fixed handwashing stations and wash their hands on the five established critical moments. Despite the use of unprotected water sources, still not all households treat their water before drinking it. The risk for infection therefore is very high. *It is recommended that the SBCC messages – in line with the recommended triggering activities - promote handwashing practises, use of clean water and effective water treatments practises.*
- Relating to the SBCC for agro-biodiversity, the common notion observed among respondents in the new districts was that crop diversity relates mainly to soil conditions, rather than household diets. *In the new districts, SBCC messages should be geared towards raising awareness on the important role of crop diversity for dietary diversity.*

8.4 Pillar 3: Strengthening nutrition sensitive agriculture and market linkages

The majority of the households in all districts but Kasama Urban have access to the land. The production in the new districts is focused on staples, followed by beans and nuts, but low on vegetables. In the existing districts, in addition to staple and legumes, also fruits are grown in Uganda, and vegetables in all districts but Chinsali.

Awareness on the correlation between nutritional status and food production is low in the new districts. The majority of the respondents think that growing different crops is important for the soil. However, almost all the respondents believe that own production can have an impact on the nutritional status of their household members. In the existing districts, most of the respondents reported that growing diverse crops is important for dietary diversity and income opportunity.

In the new districts, the responsibility and decision making on the production and livestock is mainly shared between the respondents and their partners. In the existing districts, working on the land and taking care of livestock it is more often the women's responsibility but the decisions related to crop production and livestock are made by the husbands/male partners.

Household in Kakumiro face food shortage from March to May, and households in Kasama Urban and Kasama Rural from January to February. The cumulative prevalence of moderate and severe food

insecurity experience resulted quite high in all new district especially in Kasama Urban. More in depth causes should be assessed.

The women from Kakumiro and Kasama Rural have to spend 1 to 2 hours to reach the main road and the nearest market. In Kasama Urban, the road and the market are closer. Also in all existing districts, the access to the market seems difficult. The women have to walk for 1 to 2.5 hours to reach the nearest market. In addition, the number of contracts with traders is low in all new and existing districts.

Recommendations for implementation in SN4A Phase II are:

- In Kakumiro and Kasama Rural, the average crop diversity score was 4, and most of the crops were staples. Vegetable production is not very common. *It is recommended that activities under this pillar focus on enablers and barriers for crop diversification and production of nutritious crops, and – likewise- for keeping (small) livestock, in order to develop realistic action plans for implementation with the communities for significant changes.*
- The cumulative prevalence of moderate and severe food insecure households is high. Several months per year households experience hunger. *In line with the above, it is recommended to compile a cropping calendar together with the communities in order identify crops for year round availability of food.*
- The access to the market is difficult in all rural districts and the number of contracts is low. This issue is a particularly complex one, with various entry points to work towards improvement. *Further assessment with the communities/other parties should explore which are barriers to market access. This could identify what aspects can be changed using SBCC (including a stratified approach towards SBCC target groups, farm households as well as other stakeholders (companies, middlemen, (local) government officials)), and what needs to be addressed through (re)creating infrastructure, through improved post-harvest handling of crops, through financial measurements, or other.*

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http://www.who.int/water_sanitation_health/monitoring/jmp2012/key_terms/en/

Appendix 1 Baseline questionnaire

Date...../...../.....

Enumerator ID_____

Respondent ID_____

SN4A Phase II Baseline Survey- KAP module (2018)

Filling instructions

The questionnaire consists of questions on the left hand side of the page and list of possible answers on the right hand side. The list of possible answers is numbered (pre-coded). Do not read the coding categories (numbers) to the participant. To record a response, simply CIRCLE the appropriate code. Unless, explicit instructions are given in the question column that multiple answers are allowed, only one response is allowed per question.

- For multiple choice, circle the answer(s)
- Ask the questions as they are written.
- Do not try to influence the way the participant answers.
- Never give your own opinion or advice to the participant.
- When there is written: [**NAME**], say the name of the child
- Text written in [*Italic*] is an instruction to the interviewer; this should not be said aloud to the respondent.
- Text written with an --> is a probing instruction

Name of Supervisor		
Name Enumerator		
Enumerator Number		
Name of Respondent		
Respondent Number		
Date and time of interview	Date (day/ month/year)	
	Time (hr./min)	(...../..... am/pm)
Country		
District		
Hub		
Village/ Section		

Module 1: Selection of index child

FOR ENUMERATORS: Circle the boxes you follow during selection and fill the SPACE () where needed.

1. Respondent gender

1 = Female

2 = Male -----> **STOP interview**

2. How many children between 6-23 months do you have?

88 = None -----> **STOP interview**

1 = One ----- --> **CONTINUE interview**

_____ nr. of children

Note:

If 2 children -----> Flip a coin and select one child

If more than 2 children ---> write names on a small piece of paper, place in a bowl, and draw one at random.

If there is more than 1 child, explain to the respondent that the reason for selecting only one child, even if there are more children under 2, is to come up with accurate data for dietary diversity.

3. Are you the person who fed the child most of his/her meals yesterday?

1 = No -----> **STOP interview**

2 = Yes -----> **CONTINUE interview**

4. Did either the mother/ caregiver or the child eat differently from normal for any reason?

2 = Yes-----> **STOP interview**

1 = No -----> **CONTINUE interview**

e.g. wedding/ holiday/ celebration

5. Was either the mother/caregiver or the child sick yesterday?

2 = Yes-----> **Go to QUESTION 6**

1 = No -----> **Go to Module 2**

6. If the child was sick, what did he/she have?

1 = Diarrhea ----> **STOP interview**

Module 2 Consent form

Please remember to read this word-for-word to the respondent and make sure that they fully understand and give consent before continuing.

Respondent: Main caregiver of child

"Hello. My name is _____ and I work for the SN4A project, with SNV. We are conducting a survey on food and nutrition. The results of the survey will be used to adapt the project to the needs of this community. You have been selected by chance for this survey and we would very much appreciate your participation. The survey usually takes about 60 minutes. Your participation is voluntary and you may end the survey at any time or decide not to answer a particular question. Your answers will be kept confidential. I will ask you questions about the diet of you and your child of 6-23months old. If you decide not to participate this does not have implications for participation in any program. "

The objective and procedure for the SN4A nutrition research have been explained to me by the research staff. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

Date _____/_____/2018

Signature or tick of interviewee

I certify that the nature, the purpose and the potential benefits with participating in this research have been explained to the above individual.

Date _____/_____/2018

Signature of person who obtained consent

Module 3: Information on the Index child

7. Name of the child 6-23 months:	_____
8. Is the date of birth of (NAME) known, at least month & year? If not known, use the EVENT CALENDAR to find out the month and year of birth, then write this in question 9	1= Unknown 2= Known
9. Date of Birth of the Index Child	Day_____
	Month _____
	Year_____
Note to ENUMERATOR only (do not read to respondent) Please check if the date of birth is between the 25st of May 2016 and 21st of November 2017.	1= No → STOP the interview
	2= Yes → CONTINUE the interview
10. Sex of the child	1= Female
	2= Male

Module 4: Details of the household and respondents

11. How many people are living in your household?	.....
<i>Note: This means every person who usually resides in this households at least four nights a week on average and has so done over the last four weeks.</i>	
12. Number of children under 18 years (born after May 2000)	.....
13. What is your relationship to [NAME]?	1 = Mother
	2 = Sister
	3 = Sister-in-law
	4 = Grandmother
	5 = Aunt
	6 = Niece/cousin
	77 = Other caregiver (e.g. boyfriend's mother; foster parent, neighbor etc.)
	99 = I don't know
14. Are you the head of the household?	1 = No ----- >Go to question 15
	2 = Yes ----- > Go to question 16
15. What is your relationship to the household head?	1 = Spouse
	2 = Mother
	3 = Sister
	4 = Sister-in-law /daughter-in-law
	5 = Daughter
	6 = Aunt
	7 = Niece/cousin
	77 = Other, please specify.....
99 = I don't know	
<i>Note: The household head is the person in the household acknowledged as head by the other members. The head has primary authority and responsibility for household affairs.</i>	
16. What is your age (in years)?	.....
17. What is the highest education level you completed?	1 = No schooling
	2 = Lower Primary
	3 = Upper primary
	4 = Ordinary level
	5 = High School
	99 = Unknown
	77 = Other Specify
	88 = Not applicable
18. What is your employment status?	1 = Agriculture – own farm
	2 = Agriculture wage labour
	3 = Non-agriculture, please specify.....
	4 = Housewife
	5 = Student
	6 = Unemployed
	88 = Not applicable
	99 = Don't know
19. What is your marital status?	1 = Single/never married
	2 = Divorced
	3 = Separated (temporary)
	4 = Spouse migrated for work temporarily
	5 = Widowed
	6 = Marriage, monogamous
	7 = Marriage, polygamous
88 = Not applicable	

Module 5: Diet of child 6-23 months

Explain to the respondent that in this section you will ask the respondent about nutrition of the child.

Please clarify/inform/assure the respondent that there are no wrong or right answers, and that it is important that she tries to remember everything **(child's NAME)** ate or drank the previous day, also remembering snacks like sweets, fruit and cookies. It also includes breastmilk, water or food picked from the garden or field. Please clearly state to respondent to mention breastmilk and other animal milk (cow, goat, and sheep) separately.

Please list the foods (meals and snacks) that **(NAME)** ate and drank yesterday (from the moment he/she woke up yesterday until he/she woke up this morning), at home or outside the home.

Start with the first food or drink consumed yesterday morning.

Probe questions:

Did **(NAME)** eat or drink anything when **(NAME)** woke up? If yes, what? Where did **(NAME)** eat it? What are the ingredients of dish/sauce?

Did **(NAME)** eat or drink anything later in the morning? If yes, what? Anything else?

Did **(NAME)** eat or drink anything at mid-day? If yes, what? Anything else?

Did **(NAME)** eat or drink anything during the afternoon? If yes, what? Anything else?

Did **(NAME)** eat or drink anything else in the evening before going to bed or during the night? If yes, what? Anything else?

For each eating episode, after the respondent mentions the foods and drinks, -->Probe: Anything else? Until respondent says nothing else.

If the respondent mentions a mixed dish like a soup or stew, ask all the ingredients in the mixed dish. Continue to probe about ingredients until she says "nothing else".

After you have completed the list of foods consumed the previous day, probe for food forgotten. Ask "Is there any food **(NAME)** consumed yesterday that you forgot to mention" and next "Is there any snack, fruit or vegetable **(NAME)** consumed but you forgot to mention"?

.....times

20. How many times did [NAME] eat foods that is meals and snacks other than liquids, yesterday during the day or in the night?		99= Don't know
Time	Foods and dishes/sauces eaten	Ingredients of dish/sauce
Early Morning (6:00-9:00)		
Mid-morning (After 9:00- 12:00)		
Mid-day (After 12:00- 15:00)		
Afternoon (After 15:00- 18:00)		
Evening (After 18:00-22:00)		
Late evening / night (After 22:00)		

Please ask again if any fruits or snacks were eaten, they are easily forgotten!

Probe: Did **(NAME)** eat anything outside of the home? Fill this in the table

Probe: Were there any more drinks you might have forgotten?

NOTE for ENUMERATOR: Please fill in following question right after the interview by the enumerator to save time in the interview.

21. Now circle which food group was eaten (several answers can apply). If a food is not written in the list of foods, and you do not know where to place it, you can add this in the space: "additional foods".

Foods (Note for ENUMERATORS: <u>Underline</u> the ones eaten)	Group	Yes/No
Wheat/Engano (bread, fritters/ifitumbuwa, scones, etc)	Cereals and products made of them	1=No 2=Yes
Maize/POSHO (porridge, fritters, meal etc)		
Rice/OMUCHERI		
Finger millet/ OBULHO (porridge, etc)		
Sorgum/ OMUHEMBA		
White (Irish) potatoes/ AMARUMBANI / AMABESE (fried, mashed, cooked etc)	White roots and tubers and products made of them	1=No 2=Yes
White sweet potatoes/ EBIRIBWA (fried, mashed, cooked etc)		
Yam/ EBINYANGWA		
Cassava/ OMUHOKO (meal, porridge, nshima etc)		
Matooke	Vitamin A rich vegetables and tubers (orange) and products made of them	1=No 2=Yes
Pumpkin/ AMOOLI (cooked, fried, cakes etc)		
Red sweet pepper/ EKAMURALI / EPIRIPIRI		
Orange or yellow sweet potatoes / EBIRIBWA/ EBITHAKULI EBWERANGI EYE' KISANGE (fried, mashed, cooked etc)		
Carrots EKAROTI (cooked, fried, 100% juice)	Dark green leafy vegetables	1=No 2=Yes
Pumpkin leaves/ OMUSUSA, Sweet potato leaves/ ESYONGORA, Blackjack/ OBUKUTHA, Cassava leaves/ ESOMBE,		
Bean leaves/ ESYONTIKORO, Cow pea leaves/ ESYONTIKORO, African Spinach/ PINARI, Amaranth leaves/ EDODO,		
Mustard greens/ ESYONYINYI, Chinese cabbage, EMBOGHA, rape/ SUKUMA WIKI		
Cabbage/ CABAGE, Eggplant/ EBILINGANI, Garlic/ AKATHUNGURUKYUMU, Green pepper, Mushroom/ EBITHOSA, Tomatoes/ ESYONYANYA, Onion/ OBUTHUNGURU, okra/ BAMIIYA	Other vegetables	1=No 2=Yes
Ripe mango/ OMUYEMBE (raw, dried, 100% juice)	Vitamin A rich fruits and 100% juices from this	1=No 2=Yes
Ripe pawpaw/ ERIPAPALI (raw, dried, 100% juice)		
Guava/ AMAPERA (raw, dried, juice), Banana /AMERO (raw, dried, juice), Avocado/ EFAKADO, EBITHUNDA, PINEAPLES, JACKFRUITS, wild fruits/ EBIGHUMA BYOMWAKISUKI NGABINO; ebyamba, esyondeha, amakerere, watermelon/ WATERMELON	Other fruits and 100% juices from this	1=No 2= Yes
Liver/ OBUKINDI, Kidney/ ESYOMBIKO, Heart/ OMUTHIMA, Gizard/ EKISALHYA, Intestines/ AMALHA, Lungs/ EBIHAHA	Organ meat	1= No 2=Yes
Tongue/ OLHULIMI, stomach/ EKYIPU		
Beef/ ENYAMA, Pork/ ENYAMA YE'MBUNU, Lamb/ MBULI, Goat/ EMBENE, Rabbit/ ESUNGURA, Chicken/ ENGOKO, Duck/ EMBATA, ESYOPANYA, Other birds/ EBINYONYI, Insects/ EMISHENENE, EMILHUNGULHU	Flesh meats	1=No 2=Yes

Grasshopper/ EMISHENENE		
Eggs/AMAYA (duck, chicken, quails, guinea fowl)	Eggs	1=No 2=Yes
Fish/ ESAMAKI/ ENGEGE (fresh or dried)	Fish and seafood	1=No 2=Yes
Silver fish/ OMUKENE (popa, daga, kasepa) (fresh or dried)		
Beans/ EBIHIMBA (Any type)	Legumes, nuts and seeds	1=No 2=Yes
Cowpeas / OBUSAZA		
Soya beans/ ESOYA		
Sunflower seeds/ AMAGHUTHA WE'SYONYAGHA		
Bambara nuts		
Ground nuts/ EBINYOBWA (raw, roasted, Peanut butter, powder)		
Pumpkin seeds/ EBIKENGE		
Milk/ AMATE	Milk and milk products	1=No 2=Yes
Sour milk/ AMADOSI/ AMATE AWADOSIRE		
Ground nut oil/ AMAGHUTHA WEBINYOBWA	Oils and fats	1=No 2=Yes
Sunflower oil/ AMAGHUTHA WESYONYAGHA		
Castor oil/ AMAGHUTHA WEMBONO		
Butter/ AMAGHUTHA WENDE		
Animal fat/ EKISABU, pig fat / OMAGHUTHA WE MBUNU, palm oil/ ENGASI		
Sugarcane/ EKISEKE, Honey/ OBUKYI, Biscuits, Soft drinks (coca cola, tango pina, maheu, etc)	Sweets	1=No 2=Yes
Salt, OMUNYU Chili/ EPIRIPIRI, Herbs/ EBIBAYA, Beer/ OBWABU Other alcoholic beverages/ MUKOMPOTI, TONTO, Tea, coffee	Spices, condiments, beverages	1=No 2=Yes
.....	Additional foods	1=No 2=Yes

Please ask again if any fruits or snacks were eaten, they are easily forgotten!

Probe: Did (NAME) eat anything outside of the home? Fill this in the table

Probe: Were there any more drinks you might have forgotten?

Module 6: Diet of mother or caregiver of reproductive age

22. Are you pregnant at the moment?	1 = No 2 = Yes 99 = Don't know
23. Are you breastfeeding/lactating?	1 = No 2 = Yes

Explain to the respondent that in this section you will ask the respondent about her own diet, like you did with the child's diet.

Mention to the respondent that there are no wrong or right answer, and that it is important that she tries to remember everything she ate or drank yesterday, including snacks like sweets, fruit and cookies. She should also include any water she drank or food she ate which she picked from the garden or/field.

Start with the first food or drink consumed yesterday morning.

Please list the foods (meals and snacks) that she ate and drank yesterday (from the moment she woke up yesterday till she woke up this morning), at home or outside the home.

Probe questions:

Did **YOU** eat or drink anything when **YOU** woke up? If yes, what? Where did **YOU** eat it? What are the ingredients of the dish/sauce?

Did **YOU** eat or drink anything later in the morning? If yes, what? Anything else?

Did **YOU** eat or drink anything at mid-day? If yes, what? Anything else?

Did **YOU** eat or drink anything during the afternoon? If yes, what? Anything else?

Did **YOU** eat or drink anything else in the evening before going to bed or during the night? If yes, what? Anything else?

For each eating episode, after the respondent mentions foods and drinks,-->Probe: Anything else? Until respondent says "nothing else".

If the respondent mentions a mixed dish like a soup or stew, ask all the ingredients in the mixed dish. Continue to probe about ingredients until she says "nothing else".

After you have completed the list of foods and consumed previous day, probe for food forgotten using the check list. Ask "Is there any food **YOU** consumed yesterday that you forgot to mention" and next "Is there any snack, fruit or vegetable **YOU** consumed but forget to mention"?

Time	Foods and dishes/sauces eaten	Ingredients of dish/sauce
Early Morning (6:00-9:00)		
Mid-morning (After 9:00- 12:00)		
Mid-day (After 12:00- 15:00)		
Afternoon (After 15:00- 18:00)		
Evening (After 18:00-22:00)		
Late evening / night (After 22:00)		

Please ask again if any fruits or snacks were eaten, they are easily forgotten!

Probe: Did (**NAME**) eat anything outside of the home? Fill this in the table

Probe: Were there any more drinks you might have forgotten?

NOTE for ENUMERATOR: Please fill in following question right after the interview by the enumerator to save time in the interview.

24. Now circle which food group was eaten (several answers can apply). If a food is not written in the list of foods, and you don't know where to place it, you can add this in the space: "additional foods".

Foods (Note for ENUMERATORS: <u>Underline</u> the ones eaten)	Group	Yes/No
Wheat/Engano (bread, fritters/ifitumbuwa, scones, etc)	Cereals and products made of them	1=No 2=Yes
Maize/POSHO (porridge, fritters, meal etc)		
Rice/OMUCHERI		
Finger millet/ OBULHO (porridge, etc)		
Sorgum/ OMUHEMBA		
White (Irish) potatoes/ AMARUMBANI / AMABESE (fried, mashed, cooked etc)	White roots and tubers and products made of them	1=No 2=Yes
White sweet potatoes/ EBIRIBWA (fried, mashed, cooked etc)		
Yam/ EBINYANGWA		
Cassava/ OMUHOKO (meal, porridge, nshima etc)		
Matooke		
Pumpkin/ AMOOLI (cooked, fried, cakes etc)	Vitamin A rich vegetables and tubers (orange) and products made of them	1=No 2=Yes
Red sweet pepper/ EKAMURALI / EPIRIPIRI		
Orange or yellow sweet potatoes / EBIRIBWA/ EBITHAKULI EBWERANGI EYE' KISANGE (fried, mashed, cooked etc)		
Carrots EKAROTI (cooked, fried, 100% juice)		
Pumpkin leaves/ OMUSUSA, Sweet potato leaves/ ESYONGORA, Blackjack/ OBUKUTHA, Cassava leaves/ ESOMBE,		
Bean leaves/ ESYONTIKORO, Cow pea leaves/ ESYONTIKORO, African Spinach/ PINARI, Amaranth leaves/ EDODO,	Dark green leafy vegetables	1=No 2=Yes
Mustard greens/ ESYONYINYI, Chinese cabbage, EMBOGHA, rape/ SUKUMA WIKI		
Cabbage/ CABAGE, Eggplant/ EBILINGANI, Garlic/ AKATHUNGURUKYUMU, Green pepper, Mushroom/ EBITHOSA, Tomatoes/ ESYONYANYA, Onion/ OBUTHUNGURU, okra/ BAMIIYA	Other vegetables	1=No 2=Yes
Ripe mango/ OMUYEMBE (raw, dried, 100% juice)	Vitamin A rich fruits and 100% juices from this	1=No 2=Yes
Ripe pawpaw/ ERIPAPALI (raw, dried, 100% juice)		
Guava/ AMAPERI (raw, dried, juice), Banana /AMERO (raw, dried, juice), Avocado/ EFAKADO, EBITHUNDA, PINEAPLES, JACKFRUITS, wild fruits/ EBIGHUMA BYOMWAKISUKI NGABINO; ebyamba, esyondeha, amakerere, watermelon/ WATERMELON	Other fruits and 100% juices from this	1=No 2=Yes
Liver/ OBUKINDI, Kidney/ ESYOMBIKO, Heart/ OMUTHIMA, Gizzard/ EKISALHYA, Intestines/ AMALHA, Lungs/ EBIHAHA	Organ meat	1=No 2=Yes

Tongue/ OLHULIMI , stomach/ EKYIPU				
Beef/ ENYAMA, Pork/ ENYAMA YE'MBUNU, Lamb/ MBULI , Goat/ EMBENE, Rabbit/ ESUNGURA, Chicken/ ENGOKO, Duck/ EMBATA, ESYOPANYA, Other birds/ EBINYONYI , Insects/ EMISHENENE, EMILHUNGULHU			Flesh meats	1=No 2=Yes
Grasshopper/ EMISHENENE				
Eggs/AMAYA (duck, chicken, quails, guinea fowl)			Eggs	1=No 2=Yes
Fish/ ESAMAKI/ ENGEGE (fresh or dried)			Fish and seafood	1=No 2=Yes
Silver fish/ OMUKENE (popa, daga, kasepa) (fresh or dried)				
Beans/ EBIHIMBA (Any type)			Legumes, nuts and seeds	1=No 2=Yes
Cowpeas / OBUSAZA				
Soya beans/ ESOYA				
Sunflower seeds/ AMAGHUTHA WE'SYONYAGHA				
Bambara nuts				
Ground nuts/ EBINYOBWA (raw, roasted, Peanut butter, powder)				
Pumpkin seeds/ EBIKENGE				
Milk/ AMATE			Milk and milk products	1=No 2=Yes
Sour milk/ AMADOSI / AMATE AWADOSIRE				
Ground nut oil/ AMAGHUTHA WEBINYOBWA			Oils and fats	1=No 2=Yes
Sunflower oil/ AMAGHUTHA WESYONYAGHA				
Castor oil/ AMAGHUTHA WEMBONO				
Butter/ AMAGHUTHA WENDE				
Animal fat/ EKISABU, pig fat / OMAGHUTHA WE MBUNU, palm oil/ ENGASI				
Sugarcane/ EKISEKE, Honey/ OBUKYI, Biscuits, Soft drinks (coca cola, tango pina, maheu, etc)			Sweets	1=No 2=Yes
Salt, OMUNYU Chili/ EPIRIPIRI, Herbs/ EBIBAYA, Beer/ OBWABU Other alcoholic beverages/ MUKOMPOTI, TONTO, Tea, coffee			Spices, condiments, beverages	1=No 2=Yes
			Additional foods	1=No 2=Yes

Please ask again if any fruits or snacks were eaten, they are easily forgotten!

Probe: Did (**NAME**) eat anything outside of the home? Fill this in the table

Probe: Were there any more drinks you might have forgotten?

Module 7: Source of Health and Nutrition information

25. What are the most important sources of information for feeding and the health of your child?	
Note for ENUMERATORS: Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. MULTIPLE answers possible. Circle all provided answers.	1= Health clinic or center/growth monitoring session/antenatal care
	2= VHT/ Health volunteer/community health worker/NAG-members
	3= Traditional birth attendant/ traditional medicine worker
	4=Female family members/ female friends
	5= SN4A project actors (e.g. trainers)
	6=Male family members/ male friends/ male neighbours
	7=Group meetings of e.g. Village Saving and Loan groups
	8=Church/Mosque/religious places
	77=Other, specify.....
	88= Not applicable
26. Do you know what "Stunting" means?	
	1= No idea-----> Go to question 31
	2= Yes, I know -----> Continue with next question
Note to ENUMERATORS (Q27-30): Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. MULTIPLE answers possible. Circle all provided answers.	
27. What do you understand by <u>stunting</u> and its consequences?	
	1= Child is short for its age
	2= The child's brain is not developing at its full potential
	3= Child is less active and less cheerful
	4= Child is more prone to illness
	5= Child may perform poorly in school
	77= Other, Specify.....
	99= Don't know
28. What do you think are the causes of "stunting"?	
	1= unclean water, poor sanitation and hygiene
	2= Frequent illness and infections
	3= Not consuming enough food
	4= Not consuming diverse food
	5= Not consuming foods frequently
	6= No knowledge of balanced, diverse and nutritious diet
	7= Not enough time to breastfeed or feed the child frequently
	77= Other, Specify.....
	99= Don't know
29. How do you think you can prevent your children from becoming stunted?	
	1= Ensuring that household has and uses a toilet
	2= Ensuring that people wash their hands at critical times
	3= Increasing the frequency of child feeding
	4= Consuming at least 3 or more meals a day
	5= Consuming more diverse food
	6= Focusing on promotion of vegetables production and consumption
	7= Adding nutritious snacks to the child's diet
	8=Taking the child to the health centre/doctor if they are sick
	9=Treating drinking water (e.g. boiling)
	77= Other, Specify.....
	99= Don't know
30. Do you think child stunting is a problem in your community?	
	1= No
	2= Yes
	99= Don't know

Module 8: Gender and intrahousehold decision-making

31. Who is mainly responsible for food preparation in the household?	1= Respondent
	2= Jointly by male and female household members
	3= Other female household members
	4= Husband/male partner/boyfriend
	5= Other male household members
	6= Children/younger members of household
	99= Do not know
	88= Not applicable
32. Who mainly decides, whether food crops (vegetables/fruits/nuts/legumes/seeds/staple) are sold or not?	1= Respondent
	2= Jointly by male and female household members
	3= Other female household members
	4= Husband/male partner/boyfriend
	5= Other male household members
	6= Children/younger members of household
	99= Do not know
	88= Not applicable, we do not sell food crops
33. Who receives the money from selling cash crops? (e.g. such as tea/coffee/maize/sugar/cotton/vanilla/tobacco/cocoa)	1= Respondent
	2= Both male and female household members
	3= Other female household members
	4= Husband/male partner/boyfriend
	5= Other male household members
	6= Children/younger members of household
	99= Do not know
	88= Not applicable, we don't sell cash crops
34. Who receives the money from selling food crops? Such as homegarden/vegetable garden etc.	1= Respondent
	2= Both male and female household members
	3= Other female household members
	4= Husband/male partner/boyfriend
	5= Other male household members
	6= Children/younger members of household
	99= Do not know
	88= Not applicable, we do not sell food crops
35. Who normally decides on how to spend the household income?	1= Respondent
	2= Jointly by male and female household members
	3= Other female household members
	4= Husband/male partner/boyfriend
	5= Other male household members
	6= Children/younger members of household
	99= Do not know
	88= Not applicable
36. Who mainly decides on what food items are purchased for the daily household meals?	1= Respondent
	2= Jointly by male and female household members
	3= Other female household members
	4= Husband/male partner/boyfriend
	5= Other male household members
	6= Children/younger members of household
	99= Do not know
	88= Not applicable

37. What type of food items are purchased? Note to ENUMERATORS: Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. MULTIPLE answers possible. Circle all provided answers.	1= Vegetables
	2= Fruits
	3= Staples (cereals, roots and tubers)
	4= Legumes (beans, nuts)
	5= Oil/sugar/salt/spices/tea/coffee/ sweets/biscuits/soft drink
	6= Fish
	7= Meat
	8= Eggs
	9= Milk
	77= Other, specify.....
38. Where is the food purchased? Note to ENUMERATORS: Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. MULTIPLE answers possible. Circle all provided answers.	99= Don't know
	1= Open market
	2= Supermarket
	3= Local store
	4= Restaurant
	5= Street stand
	77= Other, specify.....
	99= Don't know

Module 9: Agro-biodiversity

39. Does your household have access to any type of land? (e.g. vegetable garden/ production plot/forest land/grazing land)	1=No ----- > go to Q47 2=Yes
40. If yes, what types of land can you use for agriculture? (for example maize, vegetables and livestock)	1=Vegetable garden (Home garden/garden along stream) 2= Production plot/field belonging to HH/family 3= Forest land/fruit trees 4= Grazing land/Pasteur land
NOTE for ENUMERATORS:	5= Other, specify
MULTIPLE answers possible. Circle all provided answers.	88= Not applicable ----- >go to Q47.
Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer.	
41. Who is mainly responsible to work on the following plots of land?	
Note to ENUMERATORS: Ask only for those types land mentioned by the respondent in Q40, for other types of land, circle 88=not applicable, respondent's household does not own this type of land	
a. Vegetable garden (Home garden/garden along stream)	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members / we do not work/we do not produce on the land 88= Not applicable, respondent's household does not own this type of land 99= Do not know
b. Production plot/field belonging to the HH / family	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members / we do not work/we do not produce on the land 88= Not applicable, respondent's household does not own this type of land 99= Do not know
c. Forest land/ fruit trees	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members / we do not work/we do not produce on the land 88= Not applicable, respondent's household does not own this type of land 99= Do not know
d. Grazing land/ pasture land	1= Respondent 2= Jointly by both male and female household members

	3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members / we do not work/we do not produce on the land 88= Not applicable, respondent's household does not own this type of land 99= Do not know
e. _____ (If applicable, answers provided in Q40 5=others, specify.....)	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members / we do not work/we do not produce on the land 88= Not applicable, respondent's household does not own this type of land 99= Do not know
42. Who mainly makes decisions about what to produce on the following types of land? Note to ENUMERATORS: Ask only for those types land mentioned by the respondent in Q40, for other types of land, circle 88=not applicable, respondent's household does not own this type of land	
a. Vegetable garden (Home garden/garden along stream)	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members / we do not work/we do not produce on the land 88= Not applicable, respondent's household does not own this type of land 99= Do not know
b. Production plot/field belonging to the HH/family	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members / we do not work/we do not produce on the land 88= Not applicable, respondent's household does not own this type of land 99= Do not know
c. Forest land/ fruit trees	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members / we do not work/we do not produce on the land

	88= Not applicable, respondent's household does not own this type of land 99= Do not know
d. Grazing land/ pasture land	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members / we do not work/we do not produce on the land 88= Not applicable, respondent's household does not own this type of land 99= Do not know
e. _____ (If applicable, answers provided in Q40 5=others, specify.....)	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members / we do not work/we do not produce on the land 88= Not applicable, respondent's household does not own this type of land 99= Do not know

43. Does your household grow any crops on any on the types of plots that you own or have access to?	1= No -----> Go to Q47	
	2= Yes, often	
	3= Sometimes	
	99= Don't know -----> Go to Q47	
44. If yes, what types of crops does your household produce? NOTE for ENUMERATORS: Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. MULTIPLE answers possible. Circle all provided answers.	1= Vegetables	
	2= Fruits	
	3= Nuts/legumes/seeds	
	4= Staples (cereals/tubers/roots)	
	5= Cash crops	
45. Can you name all the crops (both food and cash) that your household grows in the current season (now ending?)	77= Other, please specify.....	
	a. Name all vegetables (both food and cash)	
	Probe for varieties : if someone says beans, please ask which types of beans and if someone says vegetable, ask for the types of vegetables	
	1.	11.
	2.	12.
	3.	13.
	4.	14.
	5.	15.
	6.	16.
	7.	17.
	8.	18.
	9.	19.
	10.	20.
	b. Name all fruits (both food and cash)	
	1.	11.
	2.	12.
	3.	13.
	4.	14.
	5.	15.
	6.	16.

	7.	17.
	8.	18.
	9.	19.
	10.	20.
c. Name all nuts/legumes/seeds (both food and cash)	1.	6.
	2.	7.
	3.	8.
	4.	9.
	5.	10.
d. Name all staples (cereals/tubers/roots/matoke) (both food and cash)	1.	8.
	2.	9.
	3.	9.
	4.	10.
	5.	11.
	6.	12.
	7.	13.
e. Name all cash crops	1.	6.
	2.	7.
	3.	8.
	4.	9.
	5.	10.
46. Is there any other foods apart from the mentioned which can be derived from your plots? ----- >Probe: Fruits from trees, wild fruits, insects, herbs, bush animals, ruminants, mushrooms, other wild foods	1.	6.
	2.	7.
	3.	8.
	4.	9.
	5.	10.

47. Does your household own any of the following?	
Cattle (cows/calf/bull)	1= No 2= Yes
Sheep	1= No 2= Yes
Goat	1= No 2=Yes
Poultry (Chicken/duck/Guinea fowl)	1= No 2= Yes
Pigs	1= No 2= Yes
Rabbit/guinea pig/other small animals	1= No 2= Yes
Fish pond	1= No 2= Yes
Other, specify	.....

48. Who is mainly responsible for looking after (cleaning, feeding etc.) the livestock?	
Note to ENUMERATORS: Ask only for those livestock for which respondent answered "yes" in Q47, for other types of livestock, circle 88= none of the household members /do not work on this livestock/do not sell/consume livestock	
Cattle (cows/calf/bull)	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend

	<p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
Sheep	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
Goats	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
Poultry (Chicken/duck/ Guinea fowl)	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
Pigs	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
Rabbit/guinea pig/other small animals	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
Fish pond	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p>

	<p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
<p>_____</p> <p>(If applicable, answer provided in Q47 Others, specify....)</p>	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
<p>49. Who mainly makes the decision about how to use the animals and animal products (to consume/sell)?</p> <p>Only for those livestock for which respondent answered "yes" in Q47</p> <p>Note to ENUMERATORS: Ask only for those livestock for which respondent answered "yes" in Q47, for other types of livestock, circle 88= none of the household members /do not work on this livestock/do not sell/consume livestock</p>	
Cattle (cows/calf/bull)	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
Sheep	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
Goats	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
Poultry (Chicken/duck/Guinea fowl)	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p> <p>4= Husband/ boyfriend</p> <p>5= Other male household members</p> <p>6= Children/younger members of household</p> <p>7= none of the household members /do not work on this livestock/do not sell/consume livestock</p> <p>99= Do not know</p>
Pigs	<p>1= Respondent</p> <p>2= Jointly by both male and female household members</p> <p>3= Other female household members</p>

	4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members /do not work on this livestock/do not sell/consume livestock 99= Do not know
Rabbit/guinea pig/other small animals	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members /do not work on this livestock/do not sell/consume livestock 99= Do not know
Fish pond	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members /do not work on this livestock/do not sell/consume livestock 99= Do not know
<hr/> (If applicable, answers provided in Q47 Others, specify....)	1= Respondent 2= Jointly by both male and female household members 3= Other female household members 4= Husband/ boyfriend 5= Other male household members 6= Children/younger members of household 7= none of the household members /do not work on this livestock/do not sell/consume livestock 99= Do not know

50. What are your most important sources of information or support on agriculture or livestock? NOTE for ENUMERATORS: Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. MULTIPLE answers possible. Circle the main answers provided.	1=Agriculture extension agent/through government officials
	2=NAG members
	3=Local organization
	4=NGO (based outside the community)
	5=Male family member/male friends/male neighbors
	6=Female family member/female friends/female neighbours
	7=Radio/television/internet
	77= Other, specify
	99=Don't know
51. Did you receive any advice or support on agriculture or livestock in the past half year? (since November 2017)	88= No information
	1= No 2= Yes

Module 10: Household Food Security

22. Months of Food Shortage	
a. In the past 12 months, were there times when members of your household went hungry because there was not enough food in the house to eat?	1= No ----- >Go to question 53 2= Yes
b. Which were the months (in the last 12 months) in which you experienced a lack of food or money such that one or more members of your household had to go hungry?	01= January 02= February 03= March 04= April 05= May 06= June 07= July 08= August 09= September 10= October 11= November 12= December 99= Don't know
<p>NOTE for ENUMERATORS: Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. MULTIPLE answers possible. Circle all provided answers.</p>	

23. Household Food Insecurity Experience Scale

Notes for ENUMERATORS: These eight questions all relate to availability of food in the household. All eight questions relate to not having enough money to buy food.

Now I would like to ask you some question about food. During the last 12 months was there ever a time in your household when:	
a. You were worried you would not have enough food to eat because of lack of money or other resources?	1= No 2= Yes 99= Don't know 88= Refused
b. Still thinking about that last 12 months, was there a time when you were unable to eat healthy and nutritious food because of a lack of money or other resources?	1= No 2= Yes 99= Don't know 88= Refused
c. You ate fewer types of different foods because of lack of money or other resources?	1= No 2= Yes 99= Don't know 88= Refused
d. You had to skip a meal because there was not enough money or other resources to get food? <i>Note to ENUMERATORS: "skip meals" means that meals are deliberately skipped</i>	1= No 2= Yes 99= Don't know 88= Refused
e. You ate less than you thought you should because of a lack of money or other resources?	1= No 2= Yes 99= Don't know 88= Refused
f. Your household ran out of food because of lack of money or other resources?	1= No 2= Yes 99= Don't know 88= Refused
g. You were hungry but did not eat because there was not enough money or other resources for food?	1= No 2= Yes 99= Don't know 88= Refused

h. You went without eating for a whole day because of lack of money or other resources?	1= No
	2= Yes
	99= Don't know
	88= Refused
55. In the last month, did it happen that your household sold so much of its food or crops that you did not have enough left for own consumption?	1= No
	2= Yes
	99 = Don't know
	88= Refused

Module 11: KAP

Infant and young child feeding

56. Is [NAME] still breastfed?	1=No 2= Yes ---→ Go to Q58 99= Don't know
57. Why is [NAME] not breastfed? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1= Lack of time to breastfeed 2= Child refuses the breastmilk 3= Not enough breastmilk produced 4= The child was refusing all other foods and liked only breastmilk, so I stopped breastfeeding 5= Temporary absence of mother, breast feeding not resumed upon return 6= Child is too old for breastmilk 7= Advised by others to stop breastfeeding/not breastfeed at all 99= Don't know 77= Other, specify.....
58. For how long did you give [NAME] only breastmilk, nothing else? (months) Note to ENUMERATOR: If answer provided is exactly 6 months ----→ Go to Q59 If answers provided is more or less than 6 months ----→ Go to Q60	..... 99=Don't know ----→ Go to Q60 88= Not applicable ----→ Go to Q60
59. Why did you give [NAME] only breast milk and nothing else for _____ (answer from Q58) months? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1= To prevent the child from stunting 2= Breastmilk is nutritious 3= The baby likes it 4= No money for other foods 5= I was advised to do so 99= Don't know 77= Other, specify.....
60.a How long after birth was [NAME] put to the breast?	1= Immediately/ within 1 hour after birth 2= After more than 1 hour 99= Don't know
60.b At what age should babies start eating semi solid and solid food in addition to breastmilk	1= At six months 2= Other, specify..... 99= Don't know
61. Do you find it difficult to provide diverse nutritious food to the child?	1= No ---→ Go to Q63 2= Yes 3= Sometimes 99= Don't know ---→ Go to Q63
62. What makes it difficult to provide diverse complementary food to the child? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the	1= Lack of time to prepare the meal 2= Lack of money to buy diverse nutritious food 3= Lack of support from household members 4= Lack of availability of diverse nutritious food 99= Don't know 77= Other, specify.....

respondent provides the answer. Circle all provided answers.	
63. Do you receive any support from other members of the household or community to feed the child?	1= No ----→ Go to Q65
	2= Yes
	99= Don't know
	88=Not applicable
64. If yes, who supports you? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the <u>options</u> out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1= Spouse
	2= Mother
	3= Father
	4= Sister
	5= Brother
	6= Sister-in-law/ daughter-in-law
	7= Son
	8= Daughter
	9= Uncle
	10= Aunt
	11= Nephew/niece/cousin
	12= Community member
	77= Other caregiver, please specify
	99= Don't know

Purchase and intra-household distribution of animal source food

65. Do some members of the household get the main share of any animal source food? (such as milk and dairy, meat, fish, eggs, poultry)	1 = No ----→ Go to Q68 2 = Yes 99 = Don't know 88 = Not applicable
66. If yes, who receives the main share of animal source foods?	1 = Respondent 2 = Other female household member 3 = Husband/ male partner/ boyfriend 4 = Other male household member 5 = Children/ younger members of the household 99 = Don't know ----→ Go to Q68 88 = Not applicable ----→ Go to Q68 77 = Other, specify.....
67. Why does _____ (answer from Q66) receive the main share of animal source food? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1 = As a sign of respect 2 = Cultural practice 3 = Animal source food was bought with the money from _____ (answer from Q66) 4 = _____ (answer from Q66) brings in the largest share of household income 99 = Don't know 77 = Other, specify.....
68. Who in the household gets served food first normally?	1 = No one – all at the same time 2 = Adults men and women 3 = Adult women 4 = Adult men 5 = Adult pregnant women 6 = Children 7 = Boys 8 = Girls 9 = The elderly 77 = Other, specify..... 88 = Not applicable 99 = Don't know
69. Does your household purchase any animal source products? (such as milk and dairy, meat, fish, eggs, poultry)	1 = No ----→ Go to Q72 2 = Yes 99 = Don't know ----→ Go to Q72
70. If yes, what types of animal source products does your household usually purchase? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1 = Milk and dairy products 2 = Beef 3 = Pork 4 = Eggs 5 = Fish/ silver fish 6 = Goat 7 = Guinea pig 8 = Poultry 99 = Don't know 77 = Other, specify.....
71. When animal source products are bought, who purchases these <u>most of the time</u> ?	1 = Respondent 2 = Jointly by male and female household members 3 = Other female household members 4 = Husband/ boyfriend 5 = Other male household members 6 = Children/ younger members of household 99 = Don't know 77 = Other, specify..... 88 = Not applicable

WASH

72. Did (NAME) have diarrhoea in the last two weeks?	1= No
	2= Yes
	99= Don't know
<i>(Note to ENUMERATOR: Diarrhoea is three or more liquid stools in 24 hours)</i>	
73. In your opinion how is diarrhea spread?	1=Dirty hands
	2= Dirty water
	3= Flies
	4= Solid waste
	5=Unclean food
	6=Dirty latrine
	7=Open defecation
	8=Through animal waste/ manure
	99=Don't know
	77 =Others, specify.....
Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	
74. Do you have a habit of hand washing?	1= No ----→ Go to Q77
	2= Yes
75. What do you usually use in handwashing?	1= Water only
	2= Water and soap
	3= Water with ash
	77= Others, specify.....
76. When do you wash your hands with _____ (Response Q75)?	1= When hands are dirty
	2= Before feeding child
	3= Before eating
	4= After eating
	5= After defecation
	6= Before preparing food
	7= After cleaning infant who has defecated (/child's butt)
	8= After touching animals
	88= Not applicable
	77=Others, specify
Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	
77. At home, do you have a fixed hand washing place/station?	1= No
	2= Yes ----→ GO to Q79
	88= Not applicable
	99= Don't know
78. If no, where else do you wash your hands?	1= At the water source
	2= In the latrine
	3= Near the latrine
	4= In the kitchen area
	88= No handwashing elsewhere
	77= Other, specify.....
Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	
79. Why is it important for you to wash the hands with soap?	1= Prevents disease
	2= Prevents diarrhoea
	3= Cleans hands/ removes dirt
	4= Is good hygiene
	5= Prevents dirt from getting into mouth
	6= Prevents dirt from getting into food
	7= Removes germs
	8= Heard from other people
	9= Heard from radio/ TV
Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the	

answer. Circle all provided answers.	10= Have seen other people do so
	11= Smells good
	12= Look/feels good
	99= Don't know
	77= Other, specify.....
80. What is the main source of water for members of your household?	1=Household connection
	2=Tubewell or Borehole
	3=Protected dug well
	4=Improved rainwater collection
	5=Unprotected dug well
	6=Pond, river or stream
	7=Unimproved rainwater collection
	8=Vendor-provided water
	9=Bottled water
	10=Tanker truck water
77=Others, specify	
99= Don't know	
81. Do you use the main water source all year or only part of the year?	1=Whole year ----→ GO to Q83
	2=Dry season only
	3=Wet season only
	88= Not applicable
	99= Don't know ----→ GO to Q83
82. During the other part of the year, what is the main source of drinking water for members of this household? <i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</i>	1=Household connection
	2=Tubewell or Borehole
	3=Protected dug well
	4= Improved rainwater collection
	5= Unprotected dug well
	6=Pond, river or stream
	7=Unimproved rainwater collection
	8=Vendor-provided water
	9=Bottled water
	10=Tanker truck water
	77=Others, specify.....
	88= Not applicable
	99 = Don't know
83. Who, within the household is responsible for collection of drinking water?	1= Respondent
	2= Husband
	3= Daughter (<18 yrs)
	4= Son (<18 yrs)
	5= Daughter (>18yrs)
	6= Son (>18 yrs)
	77= Other, specify
	88= Not applicable
	99= Don't know
84. How long does it take to obtain drinking water from the household to the source of water and back? (minutes)	.....minutes
	88= Not applicable
	99= Don't know
85. Do you treat your drinking water?	1= No ----→ Go to Q89
	2= Yes
	99= Don't know ----→ Go to Q89
86. How do you treat your drinking water? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u>	1=Boil
	2=Water filter (ceramic or porous filtration)
	3=Put against the sun (UV radiation)
	4=Chemical disinfection

<u>read the options</u> out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	5=Floculent/disinfectant (e.g. chlorine solution)
	77=Other, specify.....
	99= Don't know
87. How often do you treat drinking water?	1=Always
	2=Usually
	3=Sometimes
	4=Never
	99=Don't know
	88= Not applicable
	77=Other, specify.....
88. Do you have a latrine?	1=No-----> Go to Q92
	2= Yes
89. What type of latrine do your household have? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1=Flush or poured to septic tank or pit
	2=Pit latrine with slab
	3=Public or shared latrine (any type)
	4=Flush or pour flush to elsewhere
	5=Open pit latrine without slab
	6=Latrine overhanging water
	99= Don't know
	88= No information
	77=Other, specify.....
90. Do you use it?	1= No
	2= Yes ----→ Go to Q93
91. If no, why do you not you use it? After this question -----> Go to Q93 Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the most close possible options as the	1= Latrine is not important
	2= Open defecation tradition
	3= Habit of open defecation during field or forest work
	4= Never receive information on the importance of using latrine
	5= Prefer the field/ forest
	6= A pit toilet smell too much
	7= We do not have a nearby water source for flush
	8= Don't want to spend time on cleaning
	9= It is full
	10= It is no privacy structure
	11= It has a weak structure for standing on
	12= It did not in good conditions
	99= Don't now
	88= No information
	77= Other, specify.....
92. If no, what are the reasons you don't have a latrine? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1=No money/ cost is too high
	2= No materials to build a latrine
	3= Latrine is not important
	4= Open defecation tradition
	5= Habit to open defecation during field or forestal work
	6= Vast/ available area (open fields/ forest/ water bodies for open defecation)
	7=No external support/ assistance/ never been offered toilet facilities
	8= Never received information or the importance of using a latrine
	9= Prefer the field /forest
	10= No one to build the latrine

	11= No space in or near the latrine
	12= A pit latrine smells too much
	13= We do not own the house/ land
	14= We do not have a nearby water source for a flush the toilet
	15= Don't want to spend time on clesning
	16= Not thought about it; we are fine the way we do now
	77= Other, specify.....
	99 = Don't know
93. Where do you usually defecate when daytime during dry season?	1=OD (ground/ forest, water body)
	2=In your own latrine
	3=In neighbour latrine
	4=In public latrine
	88= No information
	77 =Others, specify.....
94. Where do you usually defecate when daytime during wet season?	1=OD (ground/ forest, water body)
	2=In your own latrine
	3=In neighbour latrine
	4=In public latrine
	88= No information
	77 =Others, specify.....
95. Where do you usually defecate when night time during dry season?	1=OD (ground/ forest, water body)
	2=In your own latrine
	3=In neighbour latrine
	4=In public latrine
	88= No information
	77=Others, specify.....
96. Where do you usually defecate when night time during wet season?	1=OD (ground/ forest, water body)
	2=In your own latrine
	3=In neighbour latrine
	4=In public latrine
	88= No information
	77=Others, specify.....

Agro-biodiversity and market linkages

97. Do you have access to any types of land that can be used for agriculture?	1=No ----> Go to Q104
	2=Yes
98. If yes, what types of land?	1= Vegetable garden (home garden/ garden along stream)
	2= Production plot/ field belonging to HH/family
	3= Forest land/ fruit trees
	4= Grazing land/ Pasture land
	77= Other, specify.....
<i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT read the options</u> out-loud. Rather, give respondent time to recall and circle the most close possible options as the respondent provides the answer. Circle all provided answers.</i>	
99. What types of crops do you produce?	1= Vegetables
	2= Fruits -----> Go to Q103
	3= nuts/legumes/seeds -----> Go to Q103
	4= staples (cereals/tubers/roots) -----> Go to Q103
	5= Cash crops -----> Go to Q103
	6= No crop production -----> Go to Q103
	77= Other, specify, -----> Go to Q103
<i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT read the options</u> out-loud. Rather, give respondent time to recall and circle the most close possible options as the respondent provides the answer. Circle all provided answers.</i>	
100. Is the plot for vegetables irrigated during dry season?	1= No
	2= Yes -----> Go to Q102
	99= Don't know
101. If no, why is the plot with vegetables not irrigated?	1= Lack of water
	2= Distance of water source
	3= Lack of money
	4= Lack of knowledge on how to irrigate the plot
	5= Lack of tools
	99= Don't know
	77= Other, specify.....
<i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT read the options</u> out-loud. Rather, give respondent time to recall and circle the most close possible options as the respondent provides the answer. Circle all provided answers.</i>	
102. Where do you source your vegetables seeds?	1= Community seed bank
	2= Neighbor
	3= Input market
	4= Local market
	5= Own saved seeds
	77= Other, specify.....
<i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT read the options</u> out-loud. Rather, give respondent time to recall and circle the most close possible options as the respondent provides the answer. Circle all provided answers.</i>	
103. Why is it important to grow different types of crops?	1= Diversify the diet
	2= Risk mitigation strategy in case of crop failure
	3= Better for the soil
	4= Income opportunity
	5= Not important
	99= Don't know
	77= Other, specify.....
<i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT read the options</u> out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</i>	
104. Do you think that own production of food can have an impact on the nutritional status of you and your family?	1= No
	2= Yes
	99= Don't know
105. How long does it take to reach the nearest main road from your house by foot? (minutes)	.....minutes
106. How long does it take to reach the nearest market from your house by foot? (minutes)	.....minutes
	1= Directly in the market

107. To whom or where do you sell the food of your own production? <i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the <u>options</u> out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</i>	2= To a company (e.g. processors)
	3= To a trader
	88= Not applicable -----> Go to Module 12
	99= Don't know
	77= Other, specify.....
108. Are you the person responsible for the sell of the food of your own production?	1= No
	2= Yes -----> Go to Q110
	99= Don't know -----> Go to Q110
109. If no, who is responsible? <i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the <u>options</u> out-loud. Rather, give respondent time to recall and circle the most close possible options as the respondent provides the answer. Circle all provided answers.</i>	1= Jointly female and male of the household
	2= Spouse
	3= Other female of the household
	4= Other male of the household
	5= Children
	99= Don't know
	77= Other, specify.....
110. Do you have a contract with a company or trader to sell your household food production?	1= No
	2= Yes
	99= Don't know
111. Do you decide the price of the produce?	1= No
	2= Yes
	99= Don't now

End of the interview

Is the interview complete?	1=no
	2=yes

This is the end of the survey:

Thank the respondent for their cooperation and time. Repeat that results will be treated confidentially and will stay anonymous.

- *Make sure you filled all questions & tables*
- *Check that a response has been filled in for every line.*
- *Check that there is only one response for every line.*
- *Circle that the interview has been completed at the first page.*
- *Check that you put the household ID on all the pages*

Module 12: Anthropometry

[For this module please send the respondent with the questionnaire to the enumerator who takes the length and weight of the child]

1. Date of interview: ____/____/2018

2. Name of index child: _____

3. Sex of index child: 1 Female
 2 Male

4. Date of birth of index child:

Day: |__|_| Month: |__|_| Year: |__|_| |__|_|

Follow the instructions for anthropometric measurements from the enumerator's manual.

	Measurement 1	Measurement 2
Weight child kg
Length in cm

5. Child was wearing cloths during measurement:

0 No

1 Yes

Notes/comments/observations by enumerator

Appendix 2 KAP questionnaire

Date...../...../.....

Enumerator ID_____

Respondent ID_____

SN4A Phase II KAP module (2018)

Filling instructions

The questionnaire consists of questions on the left hand side of the page and list of possible answers on the right hand side. The list of possible answers is numbered (pre-coded). Do not read the coding categories (numbers) to the participant. To record a response, simply CIRCLE the appropriate code. Unless, explicit instruction are given in the question column that multiple answers are allowed, only one response is allowed per question.

- For multiple choice, circle the answer(s)
- Ask the questions as they are written.
- Do not try to influence the way the participant answers.
- Never give your own opinion or advice to the participant.
- When there is written: [**NAME**], say the name of the child
- Text written in [*Italic*] is an instruction to the interviewer, this should not be said out loud to the respondent.
- Text written with an --> is a probing instruction

Name of Supervisor		
Name Enumerator		
Enumerator Number		
Name of Respondent		
Respondent Number		
Date and time of interview	Date (day/ month/year)	
	Time (hr/min)	(...../..... am/pm)
Country		
District		
Hub		
Village/Section		

Module 1: Selection of index child

NOTE FOR ENUMERATORS: Circle the boxes you follow during selection and fill the SPACE () where needed.

1. Respondent gender

1= Female -----> **CONTINUE**
interview

2= Male -----> **STOP** interview

2. How many children between 6-23 months do you have?

88= None -----> **STOP**
interview

1= One-----> **CONTINUE**
interview

If there is more than 1 child, explain to the respondent that the reason for selecting only one child, even if there are more children under 2, is to come up with accurate data for dietary diversity.

_____ no. of children

Note:

If 2 -----> Flip a coin and select one child

If more than 2...> write names on a small piece of paper, place in a bowl, and draw one at random.

3. Are you the person who fed the child most of their meals yesterday?

1= No ----- > **STOP** interview

2= Yes ----- > **CONTINUE**
interview

Module 2: Consent form

Please remember to read this word-for-word to the respondent and make sure that they fully understand and give consent before continuing.

Respondent: Main caregiver of child

"Hello. My name is _____ and I work for the SN4A project, with SNV. We are conducting a survey on food and nutrition. The results of the survey will be used to adapt the project to the needs of this community. You have been selected by chance for this survey and we would very much appreciate your participation. The survey usually takes about 30 minutes. Your participation is voluntary and you may end the survey at any time or decide not to answer a particular question. Your answers will be kept confidential. I will ask you questions about the diet of you and your child of 6-23 months old. If you decide not to participate this doesn't have implications for participation in any program. "

The objective and procedure for the SN4A nutrition research have been explained to me by the research staff. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

Date _____/_____/2018

Signature or tick of interviewee _____

I certify that the nature, the purpose and the potential benefits with participating in this research have been explained to the above individual.

Date _____/_____/2018

Signature of person who obtained consent _____

Module 3: Information on Index Child

4. Name of the child 6-23 months:	<div></div> <div></div>
5. Is the date of birth of [NAME] known, at least month & year? Note of ENUMERATORS: If unknown, use the EVENT CALENDAR to find out at least the month and year of birth, then write this in Q6	1= Unknown 2= Known
6. Date of Birth of the Index Child	Day_____ Month _____ Year_____
Note to ENUMERATOR only (do not read to respondent) Please check if the date of birth is between the 25th of May 2016 and 21st of November 2017.	1= No-----→ STOP the interview 2= Yes -----→ CONTINUE the interview
7. Sex of the child	1= Girl 2= Boy

Module 4: Details on households and respondents

8. How many people are living in your household?	.....
<i>Note: This means every person who usually resides in this households at least four nights a week on average and has so done over the last four weeks.</i>	
9. How many children under 18 years (born before May 2000) live in your household?	.....
10. What is your relationship to [NAME]?	1 = Mother
	2 = Sister
	3 = Sister-in-law
	4 = Grandmother
	5 = Aunt
	6 = Niece/cousin
	77 = Other caregiver (e.g. boyfriend's mother; foster parent, neighbor etc.)
99 = I don't know	
11. Are you the head of the household?	1 = No -----> Go to Q12
Note to ENUMERATOR: The household head is the person in the household acknowledged as head by the other members. The head has primary authority and responsibility for household affairs.	2 = Yes -----> Go to Q 13
12. What is your relationship to the household head?	1 = Spouse
	2 = Mother
	3 = Sister
	4 = Sister-in-law /daughter-in-law
	5 = Daughter
	6 = Aunt
	7 = Niece/cousin
77 = Other, please specify.....	
99 = I don't know	
13. What is your age (in years)	.....
14. What is the highest education level you completed?	1 = No schooling
	2 = Lower Primary
	3 = Upper primary
	4 = Ordinary level
	5 = High School
	88 = Don't know
	77 = Other Specify.....
15. What is your employment status?	1 = Agriculture – own farm
	2 = Agriculture wage labour
	3 = Non-agriculture, Please specify.....
	4 = Housewife
	5 = Student
	6 = Unemployed
	88 = Not applicable
	99 = Don't know
16. What is your marital status?	1 = Single/never married
	2 = Divorced
	3 = Separated (temporary)
	4 = Spouse migrated for work temporarily
	5 = Widowed
	6 = Marriage, monogamous
	7 = Marriage, polygamous
88 = Not applicable	

Module 5: Infant and young child feeding

17. Is [NAME] still breastfed?	1=No 2= Yes ---→ Go to Q19 99= Don't know
18. Why is [NAME] not breastfed? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1= Lack of time to breastfeed 2= Child refuses the breastmilk 3= Not enough breastmilk produced 4= The child was refusing all other foods and liked only breastmilk, so I stopped breastfeeding 5= Temporary absence of mother, breast feeding not resumed upon return 6= Child is too old for breastmilk 7= Advised by others to stop breastfeeding/not breastfeed at all 99= Don't know 77= Other, specify.....
19. For how long did you give [NAME] only breastmilk, nothing else? (months) Note to ENUMERATOR: If answer provided is exactly 6 months ----→ Go to Q20 If answers provided is more or less than 6 months ----→ Go to Q21	..... 99=Don't know ----→ Go to Q21 88= Not applicable ----→ Go to Q21
20. Why did you give [NAME] only breast milk and nothing else for _____ (answer from Q19) months? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1= To prevent the child from stunting 2= Breastmilk is nutritious 3= The baby likes it 4= No money for other foods 5= I was advised to do so 99= Don't know 77= Other, specify.....
21. How long after birth was [NAME] put to the breast?	1= Immediately/ within 1 hour after birth 2= After more than 1 hour 99= Don't know
22. At what age should babies start eating semi-solid and solid food in addition to breastmilk?	1= At six months 2= Other, specify..... 99= Don't know
23. Do you find it difficult to provide diverse nutritious food to the child?	1= No ---→ Go to Q25 2= Yes 3= Sometimes 99= Don't know ---→ Go to Q25
24. What makes it difficult to provide diverse complementary food to the child? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and	1= Lack of time to prepare the meal 2= Lack of money to buy diverse nutritious food 3= Lack of support from household members 4= Lack of availability of diverse nutritious food 99= Don't know 77= Other, specify.....

<p>circle the closest possible options as the respondent provides the answer. Circle all provided answers.</p>	
<p>25. Do you receive any support from other members of the household or community to feed the child?</p>	<p>1 = No ----→ Go to Q27</p> <p>2 = Yes</p> <p>99= Don't know</p> <p>88=Not applicable</p>
<p>26. If yes, who supports you?</p> <p>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the <u>options</u> out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</p>	<p>1 = Spouse</p> <p>2 = Mother</p> <p>3 = Father</p> <p>4 = Sister</p> <p>5 = Brother</p> <p>6 = Sister-in-law/ daughter-in-law</p> <p>7 = Son</p> <p>8 = Daughter</p> <p>9 = Uncle</p> <p>10 = Aunt</p> <p>11 = Nephew/niece/cousin</p> <p>12 = Community member</p> <p>77 = Other caregiver, please specify</p> <p>99 = Don't know</p>

Module 6: Purchase and intra-household distribution of animal source food

27. Do some members of the household get the main share of any animal source food? (such as milk and dairy, meat, fish, eggs, poultry)	1 = No ----→ Go to Q30 2 = Yes 99 = Don't know 88 = Not applicable
28. If yes, who receives the main share of animal source foods?	1 = Respondent 2 = Other female household member 3 = Husband/ male partner/ boyfriend 4 = Other male household member 5 = Children/ younger members of the household 99 = Don't know ----→ Go to Q30 88 = Not applicable ----→ Go to Q30 77 = Other, specify.....
29. Why does _____ (answer from Q28) receive the main share of animal source food? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1 = As a sign of respect 2 = Cultural practice 3 = Animal source food was bought with the money from ____ (answer from Q28) 4 = _____ (answer from Q28) brings in the largest share of household income 99 = Don't know 77 = Other, specify.....
30. Who in the household gets served food first normally?	1 = No one – all at the same time 2 = Adults men and women 3 = Adult women 4 = Adult men 5 = Adult pregnant women 6 = Children 7 = Boys 8 = Girls 9 = The elderly 77 = Other, specify..... 88 = Not applicable 99 = Don't know
31. Does your household purchase any animal source products? (such as milk and dairy, meat, fish, eggs, poultry)	1 = No ----→ Go to Q34 2 = Yes 99 = Don't know ----→ Go to Q34
32. If yes, what types of animal source products does your household usually purchase? Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	1 = Milk and dairy products 2 = Beef 3 = Pork 4 = Eggs 5 = Fish/ silver fish 6 = Goat 7 = Guinea pig 8 = Poultry 99 = Don't know 77 = Other, specify.....
33. When animal source products are bought, who purchases these <u>most of the time</u> ?	1 = Respondent 2 = Jointly by male and female household members 3 = Other female household members 4 = Husband/ boyfriend 5 = Other male household members 6 = Children/ younger members of household 99 = Don't know 77 = Other, specify..... 88 = Not applicable

Module 7: WASH

34. Did (NAME) have diarrhoea in the last two weeks?	1= No
(Note to ENUMERATOR: Diarrhoea is three or more liquid stools in 24 hours)	2= Yes
	99= Don't know
35. In your opinion how is diarrhea spread?	1=Dirty hands
Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	2= Dirty water
	3= Flies
	4= Solid waste
	5=Unclean food
	6=Dirty latrine
	7=Open defecation
	8=Through animal waste/ manure
	99=Don't know
	77 =Others, specify.....
36. Do you have a habit of hand washing?	1= No ----→ Go to Q39
	2= Yes
37. What do you usually use in handwashing?	1= Water only
	2= Water and soap
	3= Water with ash
	77= Others, specify.....
38. When do you wash your hands with _____ (Response to Q37)?	1= When hands are dirty
Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	2= Before feeding child
	3= Before eating
	4= After eating
	5= After defecation
	6= Before preparing food
	7= After cleaning infant who has defecated (/child's butt)
	8= After touching animals
	88= No information
	77=Others, specify
39. At home, do you have a fixed hand washing place/station?	1= No
	2= Yes ----→ GO to Q41
	88= No information
	99= Don't know
40. If no, where else do you wash your hands?	1= At the water source
Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	2= In the latrine
	3= Near the latrine
	4= In the kitchen area
	88= No hand washing elsewhere
	77= Other, specify.....
41. Why is it important for you to wash the hands with soap?	1= Prevents disease
Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.	2= Prevents diarrhoea
	3= Cleans hands/ removes dirt
	4= Is good hygiene
	5= Prevents dirt from getting into moth
	6= Prevents dirt from getting into food
	7= Removes germs
	8= Heard from other people
	9= Heard from radio/ TV
	10= Have seen other people do so

	11= Smells good
	12= Look/feels good
	99= Don't know
	77= Other, specify.....
42. What is the main source of water for members of the household?	1=Household connection
	2=Tubewell or Borehole
	3=Protected dug well
	4=Improved rainwater collection
	5=Unprotected dug well
	6=Pond, river or stream
	7=Unimproved rainwater collection
	8=Vendor-provided water
	9=Bottled water
	10=Tanker truck water
	77=Others, specify
	99= Don't know
43. Do you use the main water source all year or only part of the year?	1=Whole year ----→ GO to Q45
	2=Dry season only
	3=Wet season only
	88= Not applicable ----→ GO to Q45
	99= Don't know ----→ GO to Q45
44. During the other part of the year (dry season), what is the other sources of drinking water for members of this household?	1=Household connection
	2=Tubewell or Borehole
	3=Protected dug well
	4= Improved rainwater collection
	5= Unprotected dug well
	6=Pond, river or stream
	7=Unimproved rainwater collection
	8=Vendor-provided water
	9=Bottled water
	10=Tanker truck water
	77=Others, specify.....
	88= Not applicable
	99 = Don't know
45. Who, within the household is responsible for collection of drinking water?	1= Respondent
	2= Husband
	3= Daughter (<18 yrs)
	4= Son (<18 yrs)
	5= Daughter (>18yrs)
	6= Son (>18 yrs)
	77= Other, specify
	88= Not applicable
	99= Don't know
46. How long does it take to obtain water for domestic use from the household to the source of water and back? (minutes)	.....minutes
	88= Not applicable
	99= Don't know
47. Do you treat your drinking water?	1= No ----→ Go to Q50
	2= Yes
	99= Don't know ----→ Go to Q50
48. How do you treat your drinking water?	1=Boil
	2=Water filter (ceramic or porous filtration)
	3=Put against the sun (UV radiation)
	4=Chemical disinfection
	5=Floculent/disinfectant (e.g. chlorite solution)
	77=Other, specify.....

Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.

<i>respondent provides the answer. Circle all provided answers.</i>	99= Don't know
49. How often do you treat your drinking water?	1=Always
	2=Usually
	3=Sometimes
	4=Never
	99=Don't know
	88= Not applicable
	77=Other, specify.....
50. Do you have a latrine?	1=No -----> Go to Q54
	2= Yes
51. If yes, what type of latrine do your household have?	1=Flush or poured to septic tank or pit
	2=Pit latrine with slab
	3=Public or shared latrine (any type)
	4=Flush or pour flush to elsewhere
	5=Open pit latrine without slab
	6=Latrine overhanging water
	99= Don't know
	88= No information
	77=Other, specify.....
52. Do you use it?	1= No
	2= Yes -----> Go to Q55
53. If no, why do not you use it?	1= Latrine is not important
	2= Open defecation tradition
	3= Habit of open defecation during field or forest work
	4= Never receive information on the importance of using latrine
	5= Prefer the field/ forest
	6= A pit toilet smell too much
	7= We do not have a nearby water source for flush
	8= Don't want to spend time on cleaning
	9= It is full
	10= It is no privacy structure
	11= It has a weak structure for standing on
	12= It did not in good conditions
	99= Don't now
	88= No information
	77= Other, specify.....
54. If no, what are the reasons you don't have a latrine?	1= No money/ cost is too high
	2= No materials to build a latrine
	3= Latrine is not important
	4= Open defecation tradition
	5=Habit of open defecation during field or forest work
	6= Vast/ available area (open fields/ forest/ water bodies for open defecation)
	7= No external support/ assistance/ never been offered toilet facilities
	8= Never received information on the importance of using latrine
	9= Prefer the field/ forest
	10= No one to build the latrine
	11= No space in or near house
	12= A pit toilet smells too much
	13= We do not own the house/ land
	14= We do not have a nearby water source for a flush toilet
	15= Don't want to spend time on cleaning
	16= Not thought about it; we are fine the way we do it now
	77= Other, specify.....

55. Where do you usually defecate when daytime during dry season?	1=OD (ground/ forest, water body)
	2=In your own latrine
	3=In neighbour latrine
	4=In public latrine
	88= No information
	77 =Others, specify.....
56. Where do you usually defecate when daytime during wet season?	1=OD (ground/ forest, water body)
	2=In your own latrine
	3=In neighbour latrine
	4=In public latrine
	88= No information
	77 =Others, specify.....
57. Where do you usually defecate when night time during dry season?	1=OD (ground/ forest, water body)
	2=In your own latrine
	3=In neighbour latrine
	4=In public latrine
	88= No information
	77=Others, specify.....
58. Where do you usually defecate when night time during wet season?	1=OD (ground/ forest, water body)
	2=In your own latrine
	3=In neighbour latrine
	4=In public latrine
	88= No information
	77=Others, specify.....

Module 8: Agro-biodiversity and market linkages

59. Do you have access to any types of land that can be used for agriculture?	1= No ----> Go to Q66 2=Yes
60. If yes, what types of land? <i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</i>	1= Vegetable garden (home garden/ garden along stream) 2= Production plot/ field belonging to HH/family 3= Forest land/ fruit trees 4= Grazing land/ Pasture land 77= Other, specify.....
61. What types of crops do you produce? <i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</i>	1= Vegetables 2= Fruits -----> Go to Q65 3= nuts/legumes/seeds -----> Go to Q65 4= staples (cereals/tubers/roots) -----> Go to Q65 5= Cash crops -----> Go to Q65 6= no crop production -----> Go to Q65 77= Other, specify, -----> Go to Q65
62. Is the plot for vegetables irrigated during dry season?	1= No 2= Yes -----> Go to Q64 99= Don't know
63. If no, why is the plot with vegetables not irrigated? <i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</i>	1= Lack of water 2= Distance of water source 3= Lack of money 4= Lack of knowledge on how to irrigate the plot 5= Lack of tools 99= Don't know 77= Other, specify.....
64. Where do you source your vegetables seeds? <i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</i>	1= Community seed bank 2= Neighbor 3= Input market 4= Local market 5= Own saved seeds 77= Other, specify.....
65. Why is it important to grow different types of crops? <i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please <u>DO NOT</u> read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</i>	1= Diversify the diet 2= Risk mitigation strategy in case of crop failure 3= Better for the soil 4= Income opportunity 5= Not important 99= Don't know 77= Other, specify.....
66. Do you think that own production of food can have an impact on the nutritional status of you and your family?	1= No 2= Yes 99= Don't know
67. How long does it take to reach the nearest main road from your house by foot? (<i>minutes</i>)	.....minutes 88= not applicable 99= Don't know
68. How long does it take to reach the nearest market from your house by foot? (<i>minutes</i>)	.....minutes 88= not applicable 99= Don't know
69. To whom or where do you sell the food of your own production?	1= Directly in the market 2= To a company (e.g. processors) 3= To a trader

<i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</i>	88= Not applicable
	99= Don't know
	77= Other, specify.....
70. Are you the person responsible for the sale of the food of your own production?	1= No
	2= Yes -----> Go to Q72
	99= Don't know -----> Go to Q72
71. If no, who is responsible? <i>Note to ENUMERATOR: Multiple answers possible, circle the main answers provided. Please DO NOT read the options out-loud. Rather, give respondent time to recall and circle the closest possible options as the respondent provides the answer. Circle all provided answers.</i>	1= Jointly female and male of the household
	2= Spouse
	3= Other female of the household
	4= Other male of the household
	5= Children
	99= Don't know
72. Do you have a contract with a company or trader to sell your household food production?	77= Other, specify.....
	1= No
	2= Yes
73. Do you decide the price of the production?	99= Don't know
	1= No
	2= Yes
	99= Don't now

End of the interview

Is the interview complete?	1=no
	2=yes

This is the end of the survey:

Thank the respondent for their cooperation and time. Repeat that results will be treated confidentially and will stay anonymous.

- *Make sure you filled all questions & tables.*
- *Check that a response has been filled in for every line.*
- *Check that there is only one response for every line.*
- *Circle that the interview has been completed at the first page.*
- *Check that you put the household ID on all the pages.*

Module 9: Anthropometry

[For this module please send the respondent with the questionnaire to the enumerator who takes the length and weight of the child]

6. Date of interview: ____/____/2018

7. Name of index child: _____

8. Sex of index child: 1 Female
2 Male

9. Date of birth of index child:

Day: ____|____| Month: ____|____| Year: ____|____|____|____|

Follow the instructions for anthropometric measurements from the enumerator's manual.

	Measurement 1	Measurement 2
Weight child kg
Length in cm

10. Child was wearing cloths during measurement:

0 No
1 Yes

Interview End time	
Is the interview complete?	1=No
	2= Yes

Notes/ comments/ observations by enumerators

Appendix 3 Training programmes

Programme SN4A KAP and Baseline surveys: training and data collection, 13th of May – 25th of May 2018 Uganda.

Date	Time	Topic	Participants	Trainer
Sunday		Arrival Giulia and Sanne Kampala		
Monday 14-05	Morning	Arrival of Giulia and Sanne in Kasese District		
	Afternoon	Train Supervisors at Rwenzori International Hotel- Kasese Town Preparation with Programme country team Arrival of Enumerators from Kakumiro (New district) in Kasese	4 SN4A staff	Giulia and Sanne
Tuesday 15-05	8.30-10.30	<ul style="list-style-type: none"> • Introduction of programme & objectives (by SN4all staff) • Introduction of enumerators and supervisors 	Supervisors and enumerators for Kakumiro	SN4A Staff, Giulia, Sanne
	10.30-11.00	Tea/coffee break		
	11.00-13.00	<ul style="list-style-type: none"> • Introduction to survey and survey instrument (Baseline) 		
	13.00-14.00	Lunch break		
	14.00-15.00	<ul style="list-style-type: none"> • How to administer the questionnaire (Baseline) 		
	15.00-17.00	<ul style="list-style-type: none"> • Translation and practice 		
Wednesday 16-05	8.30-10.30	<ul style="list-style-type: none"> • Reflection on learning previous days • Explanation of different modules (Baseline module) • Roles and responsibilities 	Supervisors and enumerators for Kakumiro	SN4A Staff, Giulia, Sanne
	10.30-11.00	Tea/coffee break		
	11.00-13.00	<ul style="list-style-type: none"> • Explanation of 24h recall 		
	13.00-14.00	Lunch break		
	14.00-17.00	<ul style="list-style-type: none"> • Practice of 24h recall 		
		Arrival of Kyenjojo Enumerators & Anthropometrics enumerators		
Thursday 17-05		Arrival of Kasese enumerators & Anthropometrics enumerators		
	8.30-10.30	<ul style="list-style-type: none"> • Introduction of enumerators Kyenjojo and Kasese • Reflection on learning previous days • Introduction survey and modules 	Supervisors, all enumerators, anthropometric staff	SN4A staff, Giulia, Sanne
	10.30-11.00	Tea/coffee break		
	11.00-13.00	<ul style="list-style-type: none"> • Explanation KAP module 		
	13.00-14.00	Lunch break		
	14.00-15.00	<ul style="list-style-type: none"> • Explanation of Anthropometric measurements 		
	15.00-17.00	<ul style="list-style-type: none"> • Practice KAP module and anthropometric measurements • Prepare for pre-test (for KAP module, anthropometrics and baseline modules) 		

Date	Time	Topic	Participants	Trainer
Friday 18-05	8.30-14.00	<ul style="list-style-type: none"> • Pretesting in the field (Bugoye sub county, Kasese district) 	Supervisors, all enumerators,	SN4A Staff, Giulia and Sanne
	14.00-17.00	<ul style="list-style-type: none"> • Debrief and reflection on pre-test of KAP module, baseline survey and anthropometrics • Survey planning • Data quality • Reflection overall training & certificates 	anthropometric staff	
Saturday 19-05		Enumerators from Kakumiro and Kyenjojo travel back to their districts		
	13.00-15.00	Data entry training <ul style="list-style-type: none"> • Data entry ground rules • Data entry with Kobo Toolbox • Overview of the questionnaire 	Data entry clerks	Giulia and Sanne
	15.00-17.00	<ul style="list-style-type: none"> • Exercise with data from pre-test 		
		Mobilisation of survey participants in all the 3 districts start		SN4A staff
Sunday 20-05		Sunday Break-All team members		
Monday 21-05		Data collection(New and old districts)	Supervisors and enumerators	SN4A staff, Giulia Sanne
Tuesday 22-05		Data collection(New and Old district)	Supervisors and enumerators	SN4A staff, Giulia, Sanne
Wednesday 23-05		Data collection (New and old districts)	Supervisors and enumerators	SN4A staff, Giulia, Sanne
		Data collection in old districts end		
Thursday 24-05		Data Collection(New district)	Supervisors and enumerators	SN4A staff, Giulia and Sanne
Friday 25-05		<ul style="list-style-type: none"> • Data Collection(New district) 		SN4A staff
		<ul style="list-style-type: none"> • Giulia and Sanne departure 		

Programme SN4A KAP and Baseline surveys: training and data collection, 13th of May – 27th of May 2018 Zambia

Date	Time	Topic	participants	Trainer
Sunday 13-05		Arrival Marion in Kasama		
Monday 14-05	Morning	Arrival of participants at training location		
	Afternoon	Preparation with programme country team		
Tuesday 15-05	Morning	<ul style="list-style-type: none"> Recap introduction of programme & objectives (by supervisors) purpose of survey Introduction of all enumerators and supervisors Roles division Introduction to survey and survey instrument 	Enumerators and supervisors	Marion, Etah & John
	Afternoon	<ul style="list-style-type: none"> How to administer the questionnaire Translation and practice 	Enumerators and supervisors	Marion, Etah & John
Wednesday 16-05	Morning	<ul style="list-style-type: none"> Explanation of different modules Roles and responsibilities 	Enumerators and supervisors	Marion, Etah & John
	Afternoon	<ul style="list-style-type: none"> Explanation of 24h recall Practice of 24h recall 	Enumerators and supervisors	Marion, Etah & John
Thursday 17-05	Morning	<ul style="list-style-type: none"> Explanation of anthropometrics Practice of anthropometrics measurements Preparation pre-test (KAP, baseline, anthropometric modules) 	Enumerators, supervisors & anthropometric staff	Marion, Etah & John
	Afternoon	<ul style="list-style-type: none"> Pre-test on field at Mutale village 	Enumerators, supervisors & anthropometric staff	Marion, Etah & John
Friday 18-05	Morning	<ul style="list-style-type: none"> Debrief and reflection on pre-test of KAP module, baseline survey and anthropometrics Survey planning Data quality Reflection overall training 	Enumerators, supervisors & anthropometric staff	Marion, Etah & John
	Afternoon	<ul style="list-style-type: none"> Data entry training Data entry ground rules Data entry with Kobo Toolbox Overview of the questionnaire 	Data entry clerks	Marion, Etah & John
Saturday 19-05	Morning	Start data collection (end of the day: data entry). Travel to Chinsali and Isoka teams from Kasama. Kasama team start data entry on this day.	Enumerators, supervisors, anthropometric staff and data entry clerks	
	Afternoon	<i>Data collection</i>		
Sunday 20-05		Pentecost Holyday		
Monday 21-05	Morning	Data collection		
	Afternoon	Data collection		
Tuesday 22-05		<i>Data collection</i> <i>Marion leaves</i>		
Wednesday 23-06		Data collection		
Thursday 24-05				
Friday 25-05				
Saturday 26-05		Finalise data collection in Chinsali and Isoka respectively		
Sunday 27-05		Chinsali and Isoka teams travel back to Kasama		

Appendix 4 Plausibility check

Plausibility check for Kakumiro district.

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	Score
Flagged data (% of out of range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	0 (1.9%)
Overall Sex ratio (Significant chi square) (p=0.945)	Incl	p	>0.1 0	>0.05 2	0.001 4	<=0.001 10	0
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (6)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	2 (11)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (0)
Standard Dev WHZ .	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	5 (1.12)
.	Excl	SD	>0.9 0	>0.85 5	>0.80 10	<=0.80 20	
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.07)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (-0.13)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	0 (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	7%

The overall score of this survey is 7%, this is excellent.

Percentage of values flagged with SMART flags: WHZ: 1.9%, HAZ: 11.8%, WAZ: 4.3%

Plausibility check for Kasese district.

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	Score
Flagged data (% of out of range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	0 (1.0%)
Overall Sex ratio (Significant chi square) (p=0.727)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	4 (14)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	4 (15)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (0)
Standard Dev WHZ .	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	0 (1.04)
.	Excl	SD	>0.9 0	>0.85 5	>0.80 10	<=0.80 20	
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.04)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	1 (-0.21)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	0 (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	9%

The overall score of this survey is 9%, this is excellent.

Percentage of values flagged with SMART flags: WHZ: 1.0%, HAZ: 2.9%, WAZ: 0.0%

Plausibility check for Kyenjojo district.

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	Score
Flagged data (% of out of range subjects) (2.4%)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	0
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=0.240)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (7)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	10 (25)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (0)
Standard Dev WHZ .	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	0 (1.02)
.	Excl	SD	>0.9 0	>0.85 5	>0.80 10	<=0.80 20	
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (-0.15)
Kurtosis WHZ (0.41)	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	3
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	0 (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	13%

The overall score of this survey is 13%, this is good.

Percentage of values flagged with SMART flags: WHZ: 2.4%, HAZ: 14.4%, WAZ: 4.8%

Plausibility check for Kasama Rural district.

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	Score
Flagged data (% of out of range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	0 (1.6%)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=0.942)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	10 (p=0.000)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	2 (8)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	4 (17)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (0)
Standard Dev WHZ .	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	0 (1.05)
.	Excl	SD	>0.9 0	>0.85 5	>0.80 10	<=0.80 20	
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (-0.03)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.09)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	0 (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	16%

The overall score of this survey is 16%, this is acceptable.

Percentage of values flagged with SMART flags: WHZ: 1.6%, HAZ: 3.7%, WAZ: 3.1%

Plausibility check for Kasama Rural district.

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	Score
Flagged data (% of out of range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	0 (1.0%)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=0.398)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	0 (p=)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	2 (10)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	4 (14)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	0 (0)
Standard Dev WHZ .	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	0 (1.04)
.	Excl	SD	>0.9 0	>0.85 5	>0.80 10	<=0.80 20	
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	0 (0.08)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	1 (-0.35)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	0 (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	7%

The overall score of this survey is 7%, this is excellent.

Percentage of values flagged with SMART flags: WHZ: 1.0%, HAZ: 3.5%, WAZ: 1.5%

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Report WCDI-18-018

The mission of Wageningen University and Research is "To explore the potential of nature to improve the quality of life". Under the banner Wageningen University & Research, Wageningen University and the specialised research institutes of the Wageningen Research Foundation have joined forces in contributing to finding solutions to important questions in the domain of healthy food and living environment. With its roughly 30 branches, 5,000 employees and 10,000 students, Wageningen University & Research is one of the leading organisations in its domain. The unique Wageningen approach lies in its integrated approach to issues and the collaboration between different disciplines.



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The Wageningen Centre for Development Innovation works on processes of innovation and change in the areas of food and nutrition security, adaptive agriculture, sustainable markets, ecosystem governance, and conflict, disaster and reconstruction. It is an interdisciplinary and internationally focused unit of Wageningen University & Research within the Social Sciences Group. Our work fosters collaboration between citizens, governments, businesses, NGOs, and the scientific community. Our worldwide network of partners and clients links with us to help facilitate innovation, create capacities for change and broker knowledge.

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