

Nutrition and Water, Sanitation, and Hygiene (WASH) Assessment



Graduating to Resilience

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LIST OF ACRONYMS

ANC	Antenatal care
CBT	Community based trainer
CSB	Corn soy blend
CWC	Community women councilor
FAO	Food and Agriculture Organization
FCS	Food consumption score
FFBS	Farmer field business school
FGD	Focus group discussion
HIV	Human Immunodeficiency Virus
HCC	Health center in charge
HC	Health center
IPA	Innovations for Poverty Action
IRB	Institutional Review Board
KAP	Knowledge, attitudes, and practices
KII	Key informant interview
KPI	Key performance indicator
LC	Local Council
LWF	Lutheran World Federation
MCHN	Maternal and child health and nutrition
MOH	Ministry of Health
MUAC	Mid-upper arm circumference
MUREC	Mildmay Uganda Research Ethics Committee
NGO	Non-governmental organization
NWSC	National Water and Sewage Company
OPM	Office of the Prime Minister
PLW	Pregnant and lactating women
PO	Program officers
PSE	Private sector engagement
RWC	Refugee Welfare Council
TBA	Traditional birth attendant
UGX	Ugandan shillings
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
USAID	U.S. Agency for International Development
USD	U.S. dollar
VHT	Village health team
VSLA	Village savings and loan association
WASH	Water, sanitation, and hygiene
WRA	Women of Reproductive Age
WFP	World Food Programme
WHO	World Health Organization
WUC	Water user committee

EXECUTIVE SUMMARY

The Graduating to Resilience Activity (the Activity) is a seven-year intervention (October 2017-September 2024) funded by the United States Agency for International Development (USAID), Bureau for Humanitarian Assistance. The goal of the Activity is to graduate extremely poor refugee and Ugandan households in Kamwenge from conditions of food insecurity and fragile livelihoods to self-reliance and resilience. In this report, the assessment team describes the nutrition and water, sanitation, and hygiene (WASH) knowledge, attitudes, and practices (KAP), which was implemented as part of the Activity's refinement process. This report will be used to inform the design of cohort two of the Activity. The assessment team collected primary qualitative data through 45 key informant interviews (KIIs) and 27 focus group discussions (FGDs). The team then triangulated the data collected with primary and secondary quantitative data to contextualize and bolster the KAP information on nutrition and WASH.

I. Shifts in Nutrition and WASH KAP

I.1 Nutrition

Activities for cohort one contributed to the following positive shifts in nutrition KAP:

- **Food security and consumption:** Households rely on food from their own agricultural production as well as purchase food; food insecure households allocate nearly half of their budget to food expenditure. Participants reported that joint decision-making in the household led to a more stable household food supply.
- **Meal frequency:** The majority of participants articulated the importance of consuming three meals a day and children eating the recommended number of daily snacks.
- **Nutrition during pregnancy:**
- **Infant and young child feeding:** Participants demonstrated their shifts in knowledge and practice on infant feeding. The vast majority of households were exclusively breastfeeding infants aged 0 to 5 months, and were practicing and knowledgeable about early initiation breastfeeding, and when and how to introduce solid or semisolid foods.

While **dietary diversity** is high across households, women of reproductive age and children aged 6 to 23 months did not appear to consume minimally diverse diets, which could suggest potential micronutrient deficiencies. Among both groups there appeared to be a lag in consumption of animal-based foods and eggs. In addition, there were **noticeable differences among refugee and host communities** with respect to nutrition: refugee households had lower FCSs driven by less frequent consumption of nutrient-dense food groups, particularly milk and pulses, appearing to be because of lack of sufficient land for cultivation and refugees' ability to afford to purchase nutrient-dense foods. Despite being less food secure on average, most refugee respondents from the household survey perceived that their households are food secure.

I.2 WASH

Activities for cohort one contributed to the following positive shifts in WASH KAP:

- **Handwashing:** The practice of handwashing with soap is reported to have increased substantially since before the Activity and participants were able to articulate their knowledge of critical handwashing moments. A large driver of improved handwashing is reported to be

because of coordinated and consistent messaging across stakeholders on the benefits of handwashing to protect against COVID-19.

- **Water treatment:** Participants adopted water treatment methods widely, with boiling water being the most common. Participants reported that their prior beliefs around boiling water, such as it causes the flu, were dispelled. However, there may still be some gaps in knowledge around the negative effects of drinking unsafe water.
- **Hygiene:** Practices around cleanliness and food safety improved. Participants demonstrated their knowledge on the link between cleanliness and preventing diseases.

At the same time, there appears to be slower progress in shifting WASH KAP on the following topics:

- **Water storage:** Most participants and stakeholders described that water storage practices had not changed significantly in **cohort one**, largely due to a lack of sufficient jerrycans and storage containers. Participants used the same jerrycans and containers for multiple activities including fetching water, and storing water for drinking and cooking, among other purposes. Households shared that this was primarily due to their ability to afford more jerrycans and the problem that jerrycans are often stolen.
- **Sanitation:** Household adoption of improved sanitation facilities remained comparatively low: few households adopted pit latrines with a slab. However, data indicated that open defecation is low. Barriers to further adoption of household latrines included access to affordable materials and labor.

Finally, nearly all participants highlighted that they were **not satisfied with the water supply** in their community. Participants discussed an insufficient presence of boreholes, and long distances to collect water. Healthcare stakeholders even referred to bringing-in water from outside the community for their facility.

1.3 Status of Health Service Provision

In general, the assessment team found that access to health services improved for **cohort one** households, although some gaps remain to be addressed. However, women largely attended ANC visits during their second and third trimesters. ANC visits are crucial because they provide women access to prenatal supplements. The team found that supplements were plenty and available *if* women attended the visits. **Women did not regularly complete their full prenatal supplement cycle** for several reasons: they forgot the appointments and had negative beliefs about pills and limited knowledge of the supplements' benefits. The Ministry of Health (MOH) spousal accompaniment strategy discourages women from attending ANC visits, especially when their spouses are unwilling to attend.

Participants expressed excitement around their **new knowledge on Family Mid-upper arm circumference (MUAC)** and highlighted their adoption of the practice. Adult women were the largest adopters of the practice, while other household members including spouses less so, either because of a lack of knowledge or a perception that it is a woman's role.

2. Drivers and Barriers of Adoption and Adherence

Several themes emerged as key drivers and barriers to participants adopting and adhering to recommended nutrition and WASH practices. Below are the most common and notable.

2.1 Drivers

Participants indicated that the most highlighted driver across all practices was the work of **Activity coaches**. Participants credited coaches with increasing knowledge, sensitizing households, motivating households to follow recommended practices, and being a source of support. Related to coaching, participants reports that **home visits** in particular were a critical motivating factor, as households wanted to demonstrate their progress in achieving nutrition and WASH goals.

The next most highlighted driver was around **economic resources, consumption support, asset transfer, Village Savings and Loan Associations (VSLAs), or incomes**. Access to economic resources were crucial in supporting households to purchase foods to complement their crops, purchase inputs to upgrade farming practices, and purchase materials relevant to WASH, among others. Ultimately these resources enabled them to adopt and adhere to nutrition and WASH practices.

2.2 Barriers

The most significant barrier to food security was **weather**. Households rely on rainfed agriculture, therefore, volatile weather impeded timely harvests and adversely affected crop success, which in turn directly affected household food consumption. Next, across all the practices, **male support surfaced** as a barrier to adherence to food security practices. In terms of nutrition, while joint decision-making around household resources seems to have improved, share of household responsibilities lagged as **cohort one** continued to divide work **based on traditional** gender roles irrespective of Activity interventions. Participants indicated that lack of male support to accompany women to ANC visits, deterred women's attendance to meet the minimum number of ANC visits. Male and household support was also seen as lacking for a greater adoption of the **family MUAC approach**. Third, **access to materials** to support WASH practices, such as slabs and poles for latrines or enough jerrycans for proper water storage, hindered further adoption and adherence to WASH practices. While NGOs in the refugee communities at one time provided these materials, this has declined and created a dearth of access to materials that are affordable for households. Finally, participants indicated that **transportation**, particularly the cost, as well as the distance to health centers, limited women's access to ANC, health services, and others.

3. Recommendations

The assessment team developed eight key recommendations for **cohort two** focused on the challenges and barriers to adoption or adherence to practices that the team identified. These are summarized below and expanded with examples in the body of the report.

1. *Strengthen the coaching curriculum around dietary diversity.* To address challenges in dietary diversity, especially micronutrients among children, the Activity could re-focus its work on "balanced diets" by emphasizing certain foods for certain household members to combat potential micronutrient deficiencies.
2. *Strengthen the FFBS curriculum to emphasize livestock and link to coaching on dietary diversity.* The Activity could also introduce small ruminant farming to the **Farmer Field Business School (FFBS)** methodology. Small ruminant farming could support dietary diversity in two ways. First, supporting households' own consumption of animal-based foods and dairy and second, supporting income-generation for households to purchase foods that they are unable to cultivate. Small ruminants have numerous benefits: less vulnerable to weather changes, reproduce quickly, can act as a household safety net, and can be reared in infertile or marginal land.

3. *Broaden the scope of climate change adaptation agriculture practices within the FFBS methodology and through Private Sector Engagement (PSE) linkages.* To address the challenge of weather and risk to food security, the Activity could include and promote additional practices such as low-technology weather-efficient irrigation methods and linkages to innovative insurance methods, like crop insurance.
4. *Increase engagement of spouses and other household members in the Activity. As **cohort two** considers moving to a group coaching model, incorporate routine home visits to replicate the good practice from the individual coaching model, as it was considered a strong motivator and way to engage spouses and other household members. Build-in activities targeting other household members, such as for family MUAC and husbands' attendance in ANC visits, that reinforce training and sensitization with the primary participants.*
5. *Introduce a community-based pregnancy mapping approach to identify pregnant woman early and support access to services like ANC and prenatal supplements.* The Activity could build upon its plans for **cohort two** around the Telerivet mobile-based communication system and incorporate a community mobilization approach. This will provide the Activity information on households with pregnant women, which will enable the Activity to deploy support early during pregnancy and engage more intensively with spouses to support wives during pregnancy.
6. *Strengthen the coaching curriculum around the usage of the welfare fund.* The Activity could provide greater guidance and support to households to increase understanding of how and when to use the welfare fund, including to cover transportation costs in the event that care is needed and funds from other sources are unavailable.
7. *Collaborate with existing Ministry of Health plans around healthcare worker training.* To help reduce stigma and mistreatment faced by pregnant women seeking healthcare (particularly faced by teen mothers, older mothers, unaccompanied women, women who cannot afford maternity clothes, etc.), the Activity staff could collaborate with Ministry of Health within the existing plan to train health workers and provide examples and scenarios of, and insights into, the kinds of stigma that the Activity's target households face and its effects.
8. *Provide direction in VSLAs to save for WASH goals and link VSLA groups to companies that provide WASH materials through PSE.* The Activity could incorporate messages and seek to guide the direction of VSLA groups' savings and payouts, namely, to meet the gap in access to materials and labor in support of WASH goals. Through PSE linkages, the Activity could introduce materials companies to VSLA group meetings to showcase WASH-relevant materials and products.
9. *Emphasize alternative water collection practices.* To mitigate the ongoing challenge around access to water, the Activity could emphasize alternative water collection practices, such as rainwater harvesting, including training around maintenance. The Activity could consider a group-based rainwater harvesting model or an individual household-based approach.

CHAPTER I. INTRODUCTION

I.1 Background

Graduating to Resilience (the Activity) is a USAID Bureau for Humanitarian Assistance (BHA) funded activity led by AVSI Foundation (AVSI) in partnership with Trickle Up and the American Institutes for Research (AIR), (the consortium), which seeks to test the Graduation Approach's ability to graduate ultra-poor refugee and host community households in Western Uganda from conditions of food insecurity and fragile livelihoods to self-reliance and resilience. This seven-year Activity, from 2017 to 2024, engages 13,200 households in 2 30-month cohorts in Kamwenge District. These households are economically active but unable to meet their basic needs consistently without some form of assistance. The Activity's participants include 50% of participants from the host community and 50% refugees from Rwamwanja Refugee Settlement (the settlement) within the same district. Using a woman-plus-household graduation approach, the Activity aims to provide an integrated mix of interventions, including, but not limited to, coaching, farmer field business school (FFBS), village savings and loans associations (VSLA), consumption support, asset transfer, and business coaching. In doing so, the Activity is testing three variations of the Graduation Approach to identify the most effective and efficient approach to reach ultra-poor refugee and host community populations. The first cohort of implementation began in January 2019 and is comprised of 3,304 host community households and 3,325 refugee community households.¹ Cohort two implementation is scheduled to begin January 2022.

To refine the Activity's approach, the consortium conducted a series of assessments during the first refinement period, including an initial Nutrition and Water, Sanitation and Hygiene (WASH) Knowledge, Attitudes and Practices (KAP) Assessment. The Nutrition and WASH KAP Assessment started during the refinement period and ended four months into the first year of implementation of cohort one. The assessment team examined trends in nutrition for infants, young children, and pregnant and lactating women, along with trends in WASH KAP and access to health care services. More specifically, the assessment recommended the Activity focus its efforts on educating women and men about nutrition, WASH, and health delivery services.

Following the Activity's implementation of these recommendations throughout cohort one of the Activity, the consortium launched a Nutrition WASH KAP Assessment for cohort two. This report describes the following analysis undertaken by the assessment team to examine the objectives of the assessment:

- Explore relative success of knowledge transfer and incentives in adoption of improved nutrition and WASH behaviors by gender, age, nationality, and household demographics (for example the gender of household head or income sources)
- Understand drivers and barriers to improved nutrition and WASH practices and outcomes:
 - How household-level budget constraints, coping strategies, and savings behavior influence resource allocation for food, health, and WASH
 - Understanding how FFBS affected kitchen garden and overall nutrition outcomes

¹ As of June 2021, the Activity included 5,458 active households, representing a drop-out rate of 19% according to the graduation criteria.

- Evaluate gendered implications for decision-making around diet, budget, harvests, use of consumption support/World Food Programme (WFP) cash distribution, and other nutrition and WASH behaviors and related Activity components
- Inform Activity improvements in terms of potential incentives that would improve nutrition and WASH interventions for the second cohort

1.2 Methodology

1.2.1 Study Design

To achieve the objectives of the Assessment, the assessment team developed three research questions and seven sub-research questions across the objectives, as shown in Exhibit 1. To answer these research questions, the assessment team used a mixed-methods approach, including quantitative and qualitative data collection and analysis. As part of our quantitative approach, we conducted a household survey and complemented it with monitoring and evaluation (M&E) data. To collect qualitative data, we convened 27 focus group discussions (FGDs), conducted 55 key informant interviews (KIIs), and a desk review of secondary data sources. In the remainder of this section, we describe the data sources and analysis we used to conduct the Nutrition and WASH KAP Assessment for cohort two.

Exhibit 1. Nutrition/WASH Assessment Research Questions

Research Question	Sub-Research Questions
To what extent did cohort one program activities improve nutrition and WASH outcomes by shifting KAP among refugee and host populations?	Which Activity components most successfully improved nutrition and WASH outcomes?
	How did Activity components affect select outcomes of interest? Such as: - Nutrition: pregnant and lactating women, infants younger than 6 months, and children 6-23 months - Food safety - Personal hygiene - Water and sanitation - Access to health services
	To what degree does KAP vary by individual, household, and community characteristics?
	From the perspective of participants, what activities were most effective? - Which Activity components do they feel led to the greatest behavior change? - Which Activity components were the least relevant and motivated the least change? - Which Activity components were difficult to understand/could be improved? How? - Which other activities and/or services did they wish they had received?
What were drivers of and barriers to adoption of and adherence to recommended practices?	What were unintended consequences of the Activity?
	How did household dynamics and decision-making practices affect adoption and adherence to recommended practices?
What are evidence-based recommendations to improve nutrition and WASH outcomes through changes in cohort two Activity design and implementation?	

1.2.2 Literature Review

The assessment team reviewed existing assessments, reports, and research from cohort one before we developed qualitative data collection tools. This review provided key context for the team to design the group discussion guides, contextualize findings, and develop evidence-based recommendations. The assessment team reviewed the following sources during the initial desk review:

- Activity Quarterly Reports
- Activity Indicator Performance Tracking Table - Annual Results Reports
- Activity Coaching Needs Assessment Report
- Activity Coaching Implementation Guides (Individual and group Coaching Guides and facilitation skills guide)
- Activity Programming Guide
- Food Security and Nutrition Assessment (2018 and 2019)
- Activity Meta-Analysis of Previous Activity Assessments
- Activity April 2020 and June 2020 COVID-19 Context Assessments
- Activity Standing Committee Reports
- Activity Qualitative Case Study Reports
- Activity Gender Analysis Report (2018)
- Menstrual Hygiene Management Survey (2020)
- Medical Teams International (MTI) Infant and Young Child Feeding (IYCF) KAP survey 2020

In addition to reviewing existing research from cohort one, the assessment team also drew upon a wealth of Activity monitoring datasets, which AVSI collected during its implementation of cohort one activities. The assessment team primarily drew upon routine coach monitoring datasets, namely the Coach Annual, Bi-Annual, and Quarterly datasets. With this data, the assessment team reconstructed key performance indicators (KPIs), triangulating them with Household Survey data that were collected specifically for this assessment.

1.2.3 Qualitative Data Collection

Selection of Key Informant Interviews

The survey team also conducted 55 KIs with stakeholders to further understand nutrition and WASH KAP on similar themes as explored in the FGDs. The KIs aimed to gain an in-depth perspective from key stakeholders with firsthand experience, but also to triangulate the information gathered through the FGDs with Activity participants. Exhibit 2 shows the list of KIs that the assessment team conducted with both refugee and host communities' representatives.

Exhibit 2. Key Informant Interviews

Key Informant	Refugee	Host	Total
Religious leaders	3	3	6
Elders	3	3	6
Community women councilors	2	2	4
Health centers	2	2	4

Key Informant	Refugee	Host	Total
Sub-county health assistants	2	3	6
Water use committee members	2	2	4
Village health teams	4	4	8
Refugee welfare councils	4		4
Local councils		4	4
District nutrition focal point			1
District water focal point			1
Community development officers			4
District health inspector			1
Non-governmental organizations (Such as Medical Teams International and Oxfam)			2
TOTAL	22	23	55

KII Protocols

The KIIs enabled the assessment team to understand participant's engagement with Activity interventions and their perceptions of its usefulness and relevance across the following dimensions:

- Feeding infants younger than 6 months
- Feeding young children aged 6 to 23 months
- Nutrition during pregnancy and lactation
- Food hygiene
- Personal hygiene
- Water and sanitation
- Access to nutrition services from male service providers
- Access to health services

The assessment team developed unique KII protocols to tailor interviews to each stakeholder listed above (Exhibit 2) in collaboration with local Activity staff who were a part of the assessment team.

Selection of Focus Group Participants

The qualitative sample encompassed 27 group discussions, each of which included between 2 and 11 respondents (13 in the host community and 14 in the settlement). The group discussions were split between seven groups: adult female participants, adult male participants, youth female participants, youth male participants, adolescent female participants, adolescent male participants, and coaches.

AVSI field staff conducted the group discussions in June 2021 and completed 27 in-person group discussions over 16 days. The final focus group sample is shown in Exhibit 3.

Exhibit 3. Focus Group Discussion Sample

	Host Community		Refugee Community	
	Number of FGDs	Total Number of Participants	Number of FGDs	Total Number of Participants
Adult Women (ages 31-49)	2	19	2	18

	Host Community		Refugee Community	
	Number of FGDs	Total Number of Participants	Number of FGDs	Total Number of Participants
Adult Men (31+ years)	2	20	2	19
Youth Women (ages 18-30)	2	17	2	19
Youth Men (ages 18-30)	1	7	2	17
Adolescent Girls (ages 15-17)	2	15	2	16
Adolescent Boys (age 15-17)	2	18	2	22
Coaches	2	18	2	19
TOTAL FGD PARTICIPANTS	13	114	14	130

Focus Group Discussion Protocols

The FGDs helped the assessment team understand participants' engagement with Activity interventions and their perceptions of its usefulness and relevance across the following dimensions:

- Feeding infants younger than 6 months
- Feeding young children aged 6 to 23 months
- Nutrition during pregnancy and lactation
- Food hygiene
- Personal hygiene
- Water and sanitation
- Access to nutrition services from male service providers
- Access to health services

The assessment team developed seven FGD protocols to explore these dimensions with the seven groups listed above (Exhibit 3). After preparing draft protocols for each group, the assessment team shared the drafts with local Activity staff, who reviewed the protocols for relevance.

1.2.4 Household Survey

Questionnaire

In addition to qualitative data, the assessment team conducted a quantitative survey with Activity participants in Biguli, Bihanga, Bwizi, Nkoma sub counties, and the Nkoma/Katallyeba town council within the Kamwenge District and within the Rwamwanja Refugee Settlement. The survey, which the team administered to the households' primary participant and spouse, explored a breadth of topics, as shown by Exhibit 4. The household survey questionnaire was built upon the previous household surveys administered at the beginning of the Activity. For the purposes of the nutrition and WASH assessment, the household survey provided contextual information on participants' perceptions of their food security and WASH practice status.

Exhibit 2. Quantitative Survey Topics

Survey Section	Respondent	Topics
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1	Primary Participant Spouse (or another male member of the household if no spouse or spouse unavailable)	Household Demographics Role in Household Decision-making Access to Productive Capital Access to Credit Time Allocation Group Membership Perceptions of Gender Equality Gender and Information Communication Technology
2	Primary Participant (Primary participant provides responses for herself and up to 3 additional household members)	Education and Skills Gender Roles Livelihood Activities On-Farm Crop Activities (including crops, crop labor, and agricultural inputs, assets, harvest, and information) Salaried Employment Casual Labor Off-Farm Activities
3	Primary Participant	Livestock Activities (including livestock raised, inputs, and assets) Transportation Self-Efficacy Food Security and Nutrition WASH Health Status Gender-based Violence

Sample Selection

The assessment team utilized a two-stage random stratified sampling process to select the quantitative sample. For the **first stage**, the assessment team randomly sampled households from the current list of all active participant households. As more than 92% of Activity households include women as primary participants who are the focus of the Activity, we excluded households with a male primary participant. We stratified the household sample by geography, age, and nationality of the female primary participant to ensure equal representation of respondents across these characteristics.

For the **second stage** of sampling, we selected the female primary participant in each household to act as the primary survey respondent for the household. We then randomly selected up to three additional members from the household.² Within households, we excluded children (those younger than 18) and short-term visitors (residing in the household for less than 6 months). We asked the primary participant to respond to a subset of questions about each household member (Part 2 of the survey). We also asked spouses³ of the female primary participant separately to answer a subset of questions (Part 1 of the survey).

The assessment team aimed to recruit a sample size of 800 households because evidence from the MEASURE DHS⁴ shows that a household sample size of 800 on woman-based indicators for high fertility countries like Uganda can deliver a reasonable precision for a wide range of demographic and economic variables. Our sample size is further justified by an influential food

² If the household had fewer than four eligible members (primary participant and other adults), then all eligible members were selected.

³ If the primary participant did not have a spouse, or if the spouse was not available to be surveyed, then another adult male member of the household was asked to complete the spouse's portion of the survey.

⁴ https://dhsprogram.com/pubs/pdf/DHSM4/DHS6_Sampling_Manual_Sept2012_DHSM4.pdf

security and livelihood assessment guide⁵ for statistical random sampling that recommends researchers visit between 150 and 250 households for each reporting group to be compared. Thus, our sample size of 800 was deemed large enough to conduct statistical t-tests of differences between outcomes of interest at 95% level of confidence between hosts and refugee, youth vs adult, men vs women. Even within host (N=400) and refugee communities (N=400), we designed the survey so that sample sizes would be within the 150-250 range to facilitate comparison between adult vs youth and men vs women for a range of outcomes.

To allow for non-responses, refusals, or other factors that prevent a household from being surveyed, the assessment team provided the field team with an additional 80 households, for a total sampling frame of 880 households. We instructed the field team to end data collection after they had surveyed a total of 800 households. The final sample frame used for the survey is shown in Exhibit 5.

Exhibit 3. Quantitative Sampling Frame⁶

Subcounty	Number of Households				TOTAL (%)
	Youth Primary (Host)	Adult Primary (Host)	Youth Primary (Refugee)	Adult Primary (Refugee)	
Biguli	25	97	0	0	14%
Bihanga	13	52	0	0	7%
Bwizi	27	91	0	0	13%
Nkoma	22	71	0	0	11%
Nkoma-Katalyeba TC	9	33	0	0	5%
Rwamwanja	0	0	165	275	50%
TOTAL (%)	11%	39%	19%	31%	100%

During data collection, enumerators attempted to interview as many of the primary participants as time and funding would permit, surveying a total of 783 primary participants. Among these respondents, 384 were from refugee communities and 392 were from host communities. Most respondents were adults (582) rather than youth (214) primary participants and nearly all were female (776). The sample is sufficiently distributed across demographic characteristics of interest, thus providing a representative sample of cohort one participants for the purpose of this assessment.

1.2.5 Fieldwork

Training of Coaches; Supervision and any issues in the field

The team chose to utilize AVSI coaches to collect data for the assessment because the coaches possessed existing knowledge of the Activity, had existing relationships with participants, and could easily identify the location of participants' homes, increasing their efficiency compared to external enumerators. The AVSI coaches' existing relationships also reduced the number of

⁵ <https://www.actionagainsthunger.org/sites/default/files/publications/acf-fsl-manual-final-10-lr.pdf>

⁶ All refugee households are located with Nkoma subcounty. Host communities are in Biguli, Bihanga, Bwizi, and Nkoma subcounties and Nkoma-Katalyeba Town Council. Distribution of households across subcounties, youth/adult primary participants, and host/refugee status selected for the sample of 880 respondents are representative of the distribution of households in the entire Activity population.

interactions between data collectors and people in Activity communities. This allowed data collection to safely continue in person while minimizing the risk of spreading COVID-19.

The team conducted a training and pilot of the quantitative survey with 50 coaches, 25 from the host and 25 from the refugee community, from March 15 to 18, 2021. The team trained coaches on how to use the study tools, their purpose, proper data collection practices, and ethical considerations. The team conducted a second training with an additional 156 coaches between March 24 and 25, 2021. During this training, the team identified concerns regarding the functionality of the household survey and how data were stored after collection. To reduce the risk of error during full-scale data collection, the team chose to recode the survey in the first three weeks of April 2021, after which, on April 26, 2021, all 206 enumerators participated in a refresher training to orient the coaches to the new tool.

After fixing issues in the survey tool, the team launched data collection on April 27, 2021. The field team divided the coaches into nine regional teams, which program officers (POs) supervised with support from M&E officers. The M&E officers visited the field throughout data collection to answer any questions the coaches had and resolve issues with the operation of the survey or mobile phones used in data collection. The field staff attempted to address all issues in the field as they were identified and encouraged POs to identify workable solutions that did not require major logistical changes. For example, POs fixed occurrences of the survey not pulling participant information by updating the enumerator's tablets and survey software in the field. Additionally, delays in conducting the fieldwork created scheduling conflicts between data collection and maternity or scheduled annual leave for some coaches, which increased the survey load on the remaining personnel. To account for this, the POs reassigned the households allocated to those coaches on leave equally among the remaining coaches. Finally, the length of the survey tool created some issues for the field team, as this caused some participants to complain and grow uninterested during the interview, while others (especially spouses) found it difficult to honor their scheduled interview due to scheduling delays and competing priorities. The number of interviews that had to be rescheduled reduced the number of interviews that could be completed each day, which affected the size of the final sample.

The coaches conducted surveys through May 14, 2021, at which time the team concluded that we had achieved an appropriately large sample size and further days in the field would not yield significantly more data due to the issues described above.

COVID Mitigation

The assessment team was informed by local staff on June 16, 2021, that four AVSI staff in Kamwenge district tested positive for COVID-19 and that the overall positivity rate in the district exceeded 20%. Considering these numbers, and guidance from the Office of the Prime Minister (OPM) and United Nations High Commission for Refugees (UNHCR) to limit engagement in the district to only essential work, the assessment team decided to 1) reduce any FGDs that were not already scheduled from 10 participants to 5 allowing for greater social distancing, and 2) review in-person qualitative data collection on June 16, 2021, to determine if data collection should be collected remotely or discontinued. Additionally, we utilized our prior experience adapting data collection in the COVID-19 context by adopting the following mitigation measures: 1) we required that all coaches wear masks while conducting surveys and focus groups; 2) provided participants with facemasks if they did not have them; 3) provided hand sanitizer; 4)

maintained social distancing during interviews and focus groups; and 5) conducted all interviews and focus groups in a private, outdoor location, where feasible.

1.2.6 Ethical Considerations

Institutional Review Board

In our application to the Mildmay Uganda Research Ethics Committee (MUREC) Institutional Review Board (IRB) in Uganda, the team outlined the ethical considerations of the study and our processes to protect participants' privacy and confidentiality and reduce potential harm. We submitted the IRB package, which included the study proposal, plan to protect human subjects, data collection instruments, and informed consent forms, to the review board on January 11, 2021. MUREC returned the IRB protocol with clarification questions on dates, which our team responded to. We resubmitted the IRB package on February 17, 2021. We received final approval from MUREC to conduct the assessment on March 15, 2021.

Informed Consent

We informed all survey, FGD, and KII participants that their responses are confidential prior to their agreement to participate. Through the consent/assent process, we informed participants that they may refuse to answer any question or leave the interview or discussion at any time. We assured participants that if they refused to participate or left any interview, they would not be harmed in any way.

During the informed consent/assent process the interviewer explained the study and the goals of participation. Individuals who agreed to participate were required to sign a written consent form, either signature or thumb print, before each survey, FGD, or KII. The interviewers conducted all surveys, FGDs, and KIIs in a private setting to ensure confidentiality of responses, including those conducted remotely. Interviewers conducted surveys one-on-one with the primary participant or spouse (where applicable) so no one could hear the respondent's answers. FGDs were held in locations in which respondents felt free to discuss matters openly and community members outside the group could not overhear their responses. Finally, interviewers and facilitators were instructed during training on how to request informed consent/assent.

1.2.7 Limitations

The team identified some limitations of the assessment which could impact the findings presented in this report. Each limitation is discussed in turn.

Use of Coaches and Program Officers for Data Collection. As discussed previously, the assessment team chose to use existing Activity staff to conduct data collection rather than hire unaffiliated enumerators. Coaches were engaged to conduct survey data collection, while POs conducted the FGDs and KIIs. There were clear benefits to using the coaches to conduct survey data collection; for example, coaches knew where participants lived, and they were more likely to agree to a long survey because of their familiarity with the coach. The team recognized that the existing relationship between coach and participant might have biased the respondent's answer; the respondent might have provided a more socially desirable answer to please their coach, or the coach might have assisted the participant in recalling past information. Taking this into consideration, the assessment team concluded that the benefits of working with Activity staff as enumerators far outweighed the detriments. The team mitigated these concerns in the following ways. The team trained enumerators to conduct a survey, explaining to respondents that the information collected as part of the survey will be used to improve the Activity's design and will

benefit cohort two participants, and has no benefits/consequences for them based on responses they provide. The team triangulated responses through qualitative data collection gathered by POs. The team also recognized that the coach-participant relationship was near the end as data collection took place during the close-out period of cohort one implementation.

Length and Complexity of the Survey Questionnaire. Building off lessons learned from the first refinement period, the assessment team developed a comprehensive assessment framework to integrate the five individual assessments, including a Value Chain, Labor Market, Gender, Nutrition and WASH KAP, and Youth Assessment, to ensure that key research and learning questions are answered, and the Activity's implementers have meaningful, timely information to make decisions regarding the design of cohort two. By creating a comprehensive assessment framework, the assessment team was able to streamline data collection, minimize duplicative data collection, and mitigate survey fatigue among participants and staff. However, the length and complexity of the survey required exceptional skills from the field staff. On average, it took approximately six hours per household in the refugee community and approximately five hours in the host community to complete the entire survey. Due to the length and complexity of the survey, field staff conducted the household survey in two visits per household, reducing the amount of time respondents spent answering questions per visit to three hours in the refugee community and two and a half hours in the host community, mitigating the issue of the long survey and exhaustion from participants.

CHAPTER 2. FINDINGS

In this chapter, the assessment team presents the quantitative and qualitative findings concerning shifts in cohort one participants' knowledge, attitudes, and practices (KAP) as it relates to nutrition, health services, and WASH. We aligned the discussions on findings to respond to the primary research questions posed by this assessment within the three major practice areas. Under each practice area section, we first present findings as they relate to household changes and shifts in KAP, noting where there has and has not been progress, to formulate a response to the research question: *To what extent did cohort one activities improve nutrition and WASH outcomes by shifting KAP among refugee and host populations?* Next, we discuss the key drivers that led or contributed to the observed positive shifts in KAP or barriers to adoption and adherence to recommended practices to formulate answers to the research questions: *Which activities are associated with improved nutrition and WASH outcomes? What were the barriers to adoption of and adherence to recommended practices? What were the drivers of adoption of and adherence to recommended practices?*

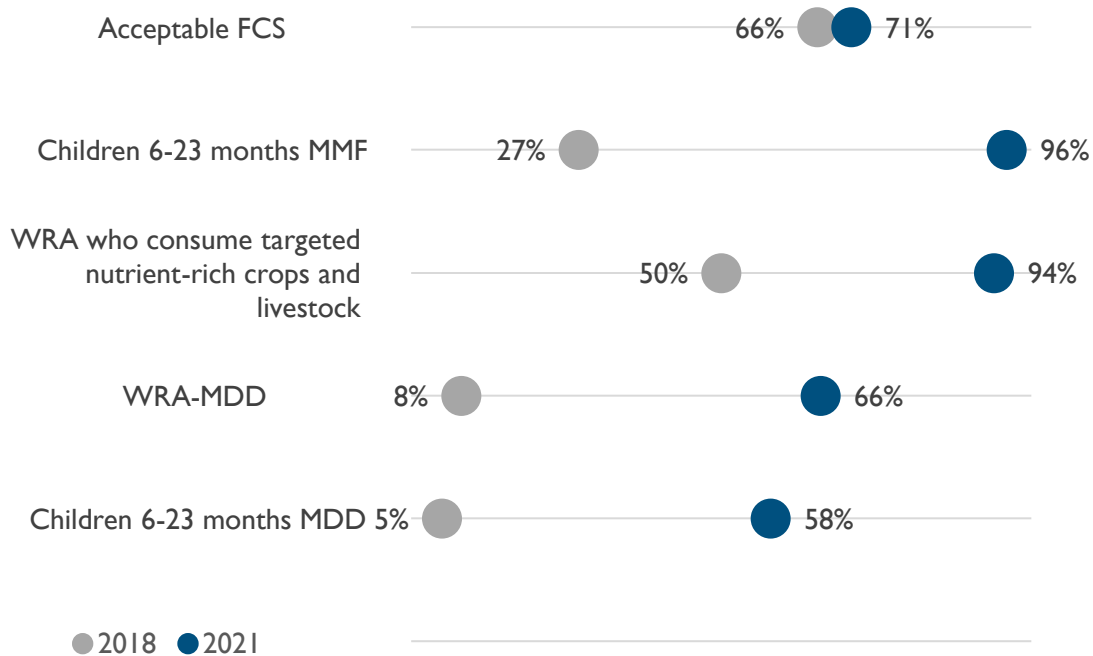
2.1 Nutrition Knowledge, Attitudes and Practices

In this section, we provide our findings related to shifts in KAP along key nutrition practices promoted in cohort one activities, including food security and consumption, dietary diversity, meal frequency, nutrition during pregnancy, infant feeding, and young child feeding. We first discuss cohort one participants' adoption or adherence to recommended practices and then proceed to changes in knowledge and attitudes relevant to those practices. Next, we identify and group key drivers and barriers that emerged as themes across qualitative and quantitative findings.

2.1.1 Household Level Changes

Households set nutrition goals related to increasing dietary diversity and meal frequency. Most FGD participants reported that they had made progress on their nutrition goals, and KII interviewees shared the same sentiment. Nevertheless, many participants in both host and refugee communities noted challenges with increasing dietary diversity, especially that of children.

Exhibit 6: Nutrition Performance Indicators – 2018 vs. 2021



Source: Coach Annual 2021 dataset, $n = 4,913$; Coach Bi-Annual 2021 dataset, $n = 5,471$; 2018 values provided to AVSI by Innovations for Poverty Action (IPA)

As of June 2021, most households (71%) appear food secure as measured by those with an acceptable Food Consumption Score (FCS).⁷ Given the relative importance of different food groups embedded in this measure, the large share of households with an acceptable FCS suggested that most households maintain diverse diets.⁸ This, however, does not account for seasonal variation in dietary composition, distributional considerations within the household, and systematic differences across community types⁹ (i.e., host or refugee), particularly in terms of agricultural activity.

To contextualize this series of nutrition performance indicators, we unpack observed changes in KAP around these nutrition themes in the following section.

Food Security: Positive Shifts in KAP

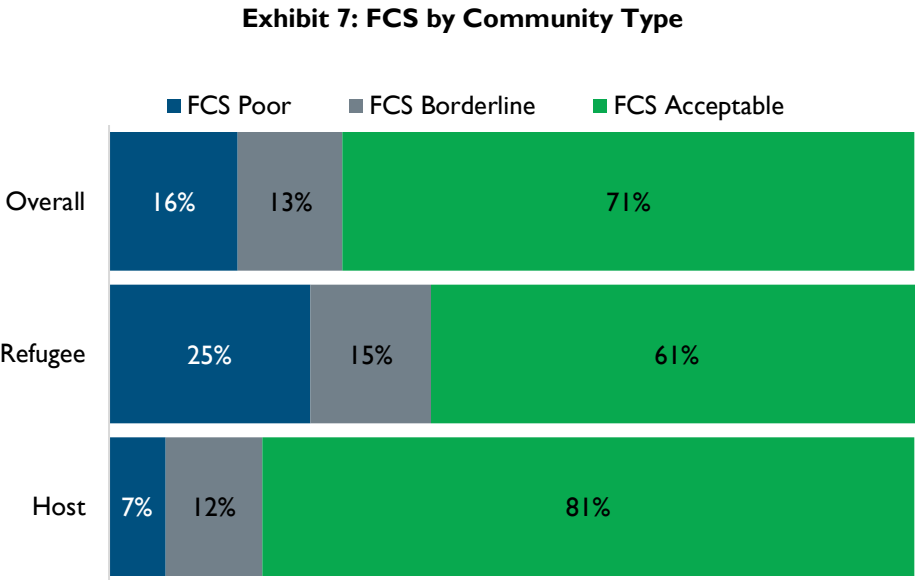
Food Security and Consumption Practices. On average, surveyed refugee households were less food secure relative to host households (Exhibit 7). This difference by community type was driven by the larger share of host households who more frequently consumed nutrient-rich food

⁷ As specified by the World Food Organization (WFO), the FCS aggregates the frequency of household-level consumption of nine food groups seven days before the survey, which is thereafter weighted according to the relative nutritional value of each food group and summed to generate the FCS. The WFO defines FCS scores above 35 as acceptable.

⁸ Given the reference period for this indicator, the FCS does not speak to year-round household dietary diversity.

⁹ In addition to differences by community type, the FCS varies by treatment arm. Households in treatment arm two (75%) more commonly have an acceptable FCS, followed by households in treatment arms one (71%) and three (67%).

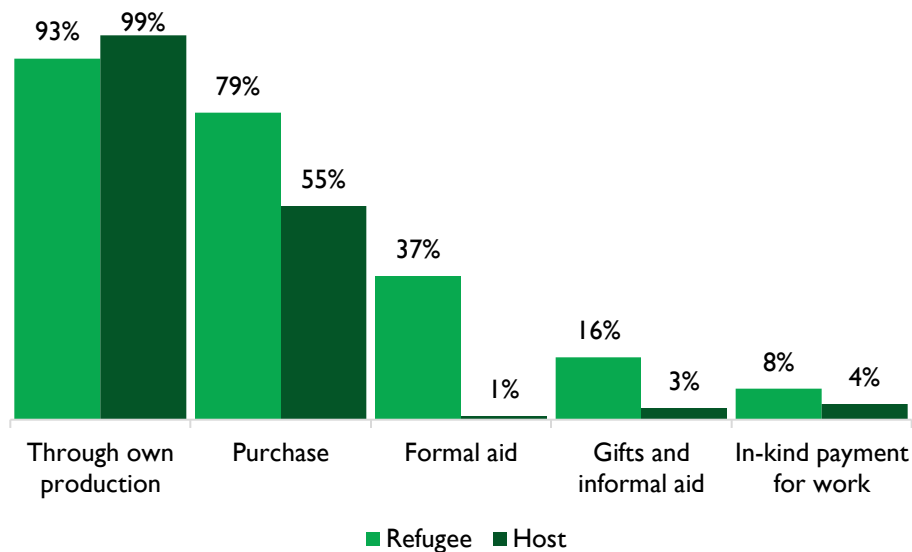
groups such as pulses and milk (see section “Dietary Diversity Practices” on page 18). Across community types, few households reported skipping meals (0%), limiting food portion sizes among any household members (0%), purchasing food on credit (1%), or other coping strategies related to chronic food shortages (2021 Coach Annual Survey).



Source: Coach Annual 2021 dataset, n = 4,913

While most households sourced their food for consumption through their own agricultural production (96%) and purchases (67%), refugee households had more diversified food consumption sources on average (1.61) relative to host community households (2.31). As illustrated in Exhibit 8, this difference resulted predominantly from disbursement of formal and informal food aid within refugee communities.

Exhibit 8: Household Food Sources by Community Type



Source: Household Survey, n = 760

Among households that engaged in agricultural activities (98%), most cultivated maize and beans. On average, host community households grew more diversified crop types (3.87) than their refugee counterparts (2.39), which potentially accounts for greater dietary diversity among these households. In addition, more host households (96%) reported owning livestock, namely chickens (69%), pigs (69%), and goats (57%), relative to refugee households (82%) that predominantly owned chickens (7%) and goats (28%).

By community type, host community households report owning more plots of land on average (2.06) relative to refugee households (1.32). The difference in plot ownership is less stark between food secure households (1.77) and food insecure households (1.53). Among smallholder farmers,¹⁵ which comprises 91% of respondents from the Household Survey, those in host communities reported a higher average plot size (2 acres) across all plots owned relative to those in refugee communities (1 acre). The difference by household food security status is marginal.

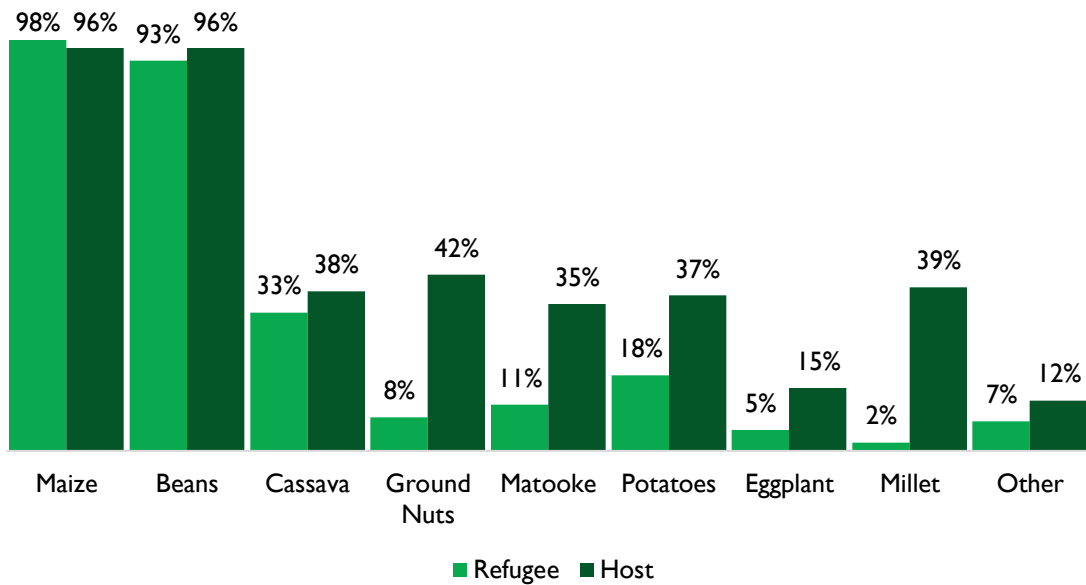
Across owned plots, most respondents reported using their land for food crop cultivation (80%), followed by cash crop cultivation (45%), and pasture for livestock (15%). With respect to land use for pasture, differences by community type are dramatic: while 28% of respondents from host communities reported using some of their owned land for livestock pasture, only 1% of refugee community households reported doing so, which may be due to differences in the kind of livestock raised by community type¹⁶, as well as available funds to invest in livestock¹⁷. This pattern holds by household food security but is less marked, presenting an 8 percentage point difference between food secure (18%) and food insecure (10%) households.

Exhibit 9: Household Crop Cultivation by Community Type

¹⁵ Using FAO conventions as a reference, the assessment team defined smallholder farmers as any household that owns and cultivates 5 acres of land or less.

¹⁶ For instance, only 16% of refugee households reported owning cattle whereas 28% of host households reported as such.

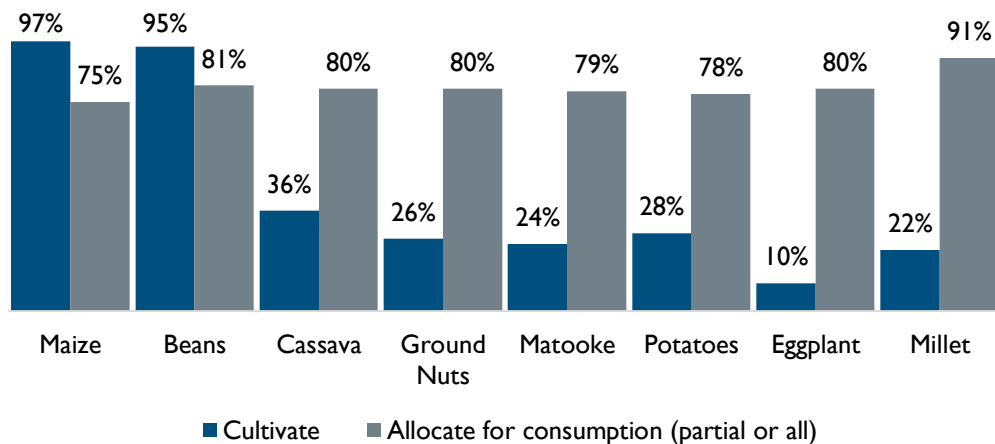
¹⁷ From the qualitative data, host community respondents tended to associate households with greater income with a greater preference to rear livestock.



Source: Household Survey, $n = 681$

Regardless of crop type or community type, most households allocated part or all their harvests for household consumption, which was consistent with self-reported data on food consumption sources (Exhibit 10). Even so, most crop types typically had various uses: the share of households that allocated their crops solely for consumption was comparatively low (36% across crop types), with most households also selling their agricultural output. Nevertheless, food secure households more commonly allocated their harvests for sole consumption relative to food insecure households, save for maize, potatoes, and “other”¹⁸ crops.

Exhibit 10: Household Crop Cultivation and Allocation



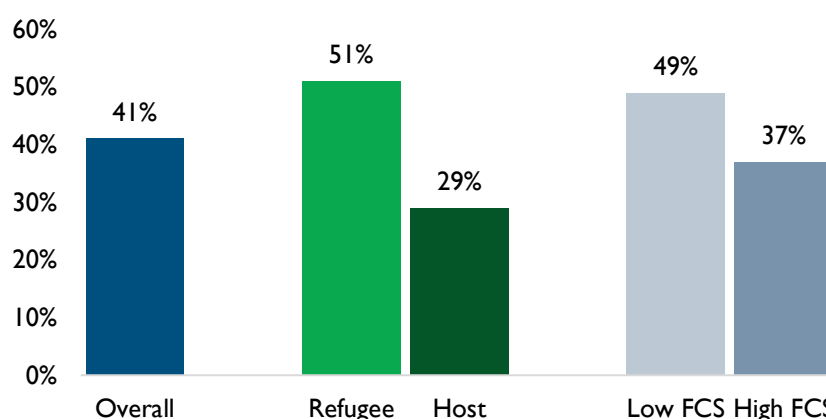
Source: Household Survey, $n = 681$

In addition to sourcing food for consumption from agricultural production, most households also reported purchasing food (67%). On average, food consumption expenditures represented a

¹⁸ From open-ended “other” responses, respondents most mentioned sweet potatoes, followed by cabbage and soybeans.

larger budget share among surveyed refugee households (51%) relative to host households (29%).¹⁹ By food security status, this pattern held with food insecure households allocating nearly half of their budget (49%) to food purchases whereas food secure households allocated just over a third of their budget (37%) (Exhibit 11). The large food expenditure budget share among food insecure households—many of which were refugee households—cast doubt on the affordability of nutritionally adequate diets among this segment of the population and suggested that these households were particularly vulnerable to shocks that could affect food prices, which could thereby have serious implications on both the quality and quantity of household food consumption.

Exhibit 11: Share of Household Expenditures*: Food Consumption

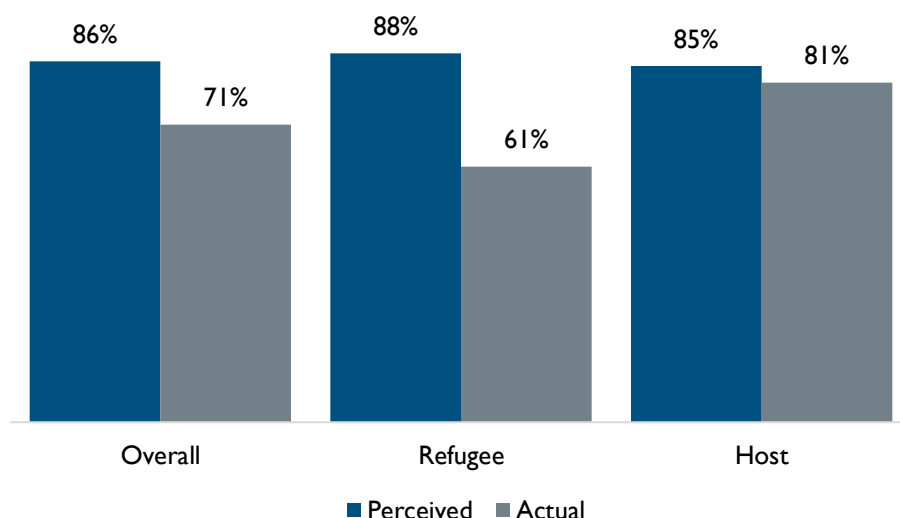


Source: Household Survey, $n = 724$; Note: * Expenditures references the month prior to data collection, which represents April 2021 for most respondents.

Food Security and Consumption Knowledge and Attitudes. Despite being less food secure on average, most refugee respondents from the household survey perceived their households as food secure (Exhibit 12). In FGDs, both communities perceived improvements in their household's food security, which they primarily attributed to their ability to purchase food with their increased income rather than their ability to grow or manage livestock.

¹⁹ Reported expenditures from the Household Survey, which was conducted in April and May 2021, specifically reference expenditures in the last month. Given seasonal variation in expenditures, these estimates do not reflect annual budget allocation trends.

Exhibit 12: Perceived vs. Actual Food Security Status by Community Type

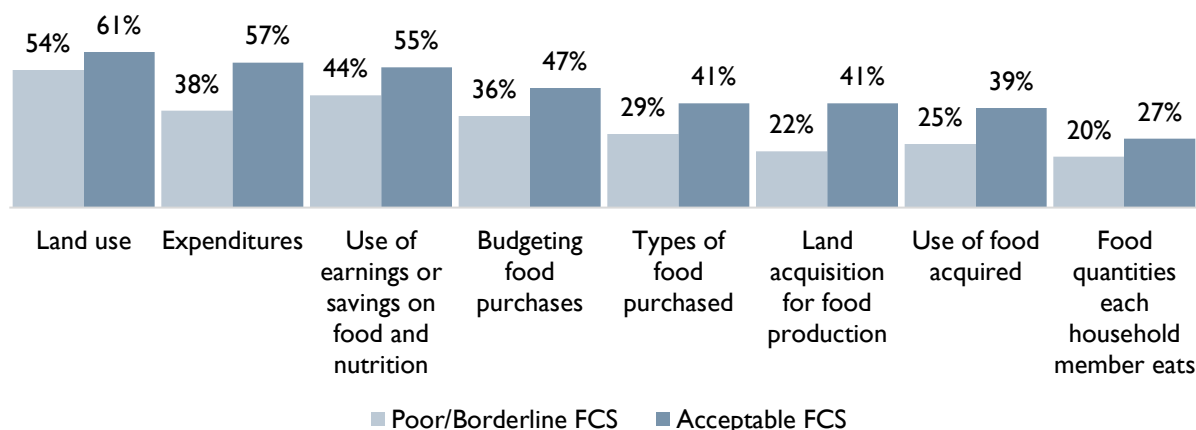


Source: Coach Annual 2021 dataset; Household Survey, n = 756

Activity participants shared that they were taught about the importance of collaboration and joint decision-making as they relate to household food consumption in coaching sessions, noting that this encouraged a more stable food supply in the household and supported overall food security. A group of adult females in the refugee community shared that “when the husbands involved the wives in planning about provision of food in the household together, decisions made were followed and the food was available in the household at all times.” However, not all households were able to change their attitudes regarding joint decision-making skills. Some adult males felt that despite the Activity encouraging joint household decision-making and collaboration, there was sometimes “joint decision-making failure in some households,” due to conflicts between husband and wife. Apart from understanding the purpose of a stable food supply, participants shared that they better understood the value of food. A youth male in the host community noted that “coaching made us appreciate the value of food,” which is important to spur attitude change in the future regarding food consumption decisions.

Exhibit 13 depicts perceived gender roles on decision-making around households’ food consumption across different topics, as reported by respondents from the household survey. Respondents reported for which food security, nutrition, and livelihood topics they practiced joint decision-making versus individual decision-making (either man only or woman only) for their household. Exhibit 13 highlights that respondents from food secure households more commonly reported joint decision-making across key food consumption topics, suggesting more food secure households were also practicing more joint decision-making. Nevertheless, many respondents—regardless of their household’s food security status—viewed women as the primary decision-makers on food consumption matters.

Exhibit 13. Perceived Gender Roles: Joint Decision-Making on Food Consumption by FCS



Source: Household Survey, n = 756

Women and girls are eating a balanced diet, not just them but the whole household.

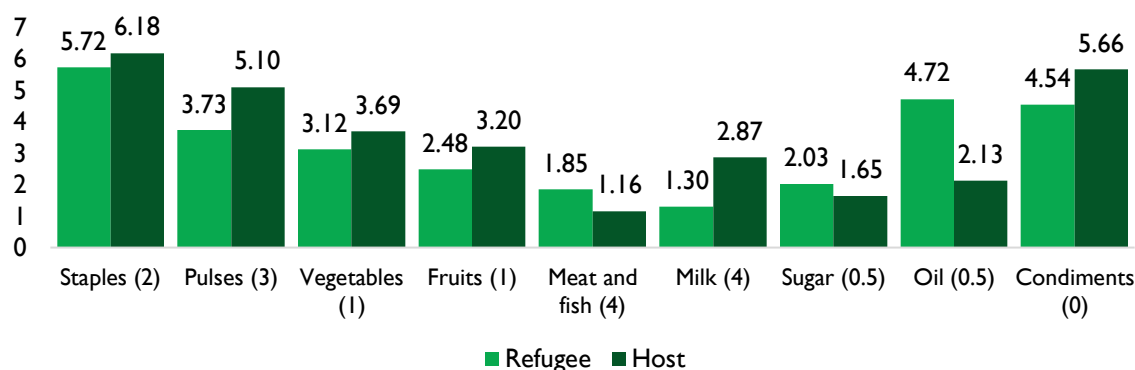
Adult male FGD from the refugee community

Dietary Diversity: Delayed Progress in Shifting KAP

Household Dietary Diversity Practice. Qualitative and quantitative data regarding dietary diversity were mixed among respondents. Based on the underlying food groups that constitute the FCS, households in host communities more frequently consumed nutrient-dense food groups (Exhibit 14). Given distinct patterns in food consumption sources by community type (see Section 2.1.1), the data suggest dietary diversity may be constrained by inconsistent availability and/or affordability of

nutrient-rich food groups, especially among refugee households. The extent to which preferences and social norms contributed to these food choices, however, was unclear. Though most FGD respondents expressed consuming diverse food groups and perceived consuming balanced meals, practices might have diverged due to preferences or affordability.

Exhibit 14: Household-level, Food Groups Consumed (7-Day Average) by Community Type



From the participant FGDs, households stated that, initially, they primarily ate matooke, beans, groundnuts, and maize, largely crops that they were growing.

I used the money to buy food we do not produce at home...and this supported us to have a balanced diet.

Adult female FGD from the host community

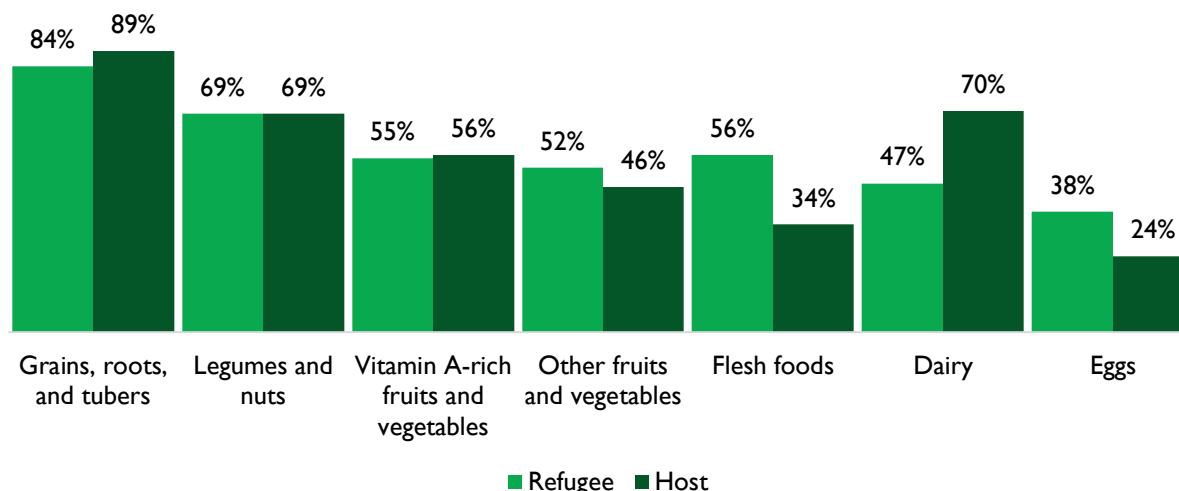
One youth female from the refugee community described eating only “beans and matooke day after day” prior to engaging with the Activity. Another adolescent female from the host community shared that they would eat largely matooke and beans or matooke and groundnuts but that after the Activity that had changed. Across FGDs, respondents shared increased consumption of other food groups, namely meat, fish, rice, and posho. Generally, households stated that they purchased these foods to complement their consumption of the crops they were growing, referencing a desire to help

ensure a balanced diet for themselves and their household. Participants most frequently described purchasing for this purpose the following specific foods: meat (chicken), fish (several noted silver fish), rice, and posho. Some participants also highlighted that they purchased egg-laying hens to enable them to feed eggs to their children. One youth female from the host community shared that she was able to purchase two liters of milk every day for a month from her business profits. However, as can be appreciated from Exhibit 14 above, foods such as meat and fish continue to be consumed less, suggesting that households may have increased their purchases of these complementary foods but perhaps not at a sufficient rate to meet nutrient demands.

Young Children Dietary Diversity Practice. A significant proportion (42%) of children aged 6 to 23 months from surveyed cohort one households do not consume minimally diverse diets. This can have serious implications on childhood micronutrient adequacy and children’s physiological and cognitive development. Exhibit 15 below shows the diet composition of children in this age range, using the 24 hours preceding the respondent’s survey date as the reference period.

In general, a majority of children in this age range consumed staples (e.g., grains, roots, tubers); legumes and nuts; and Vitamin A-rich fruits and vegetables. Flesh foods (i.e., meat, poultry, fish) and eggs are more common among refugee children aged 6 to 23 months than among their counterparts in host communities. Conversely, dairy consumption was more common among children in host communities. These patterns by community type are consistent with household-level trends (Exhibit 14 above).

Exhibit 15: Children 6-23 months, Food Groups Consumed in the Past 24 Hours

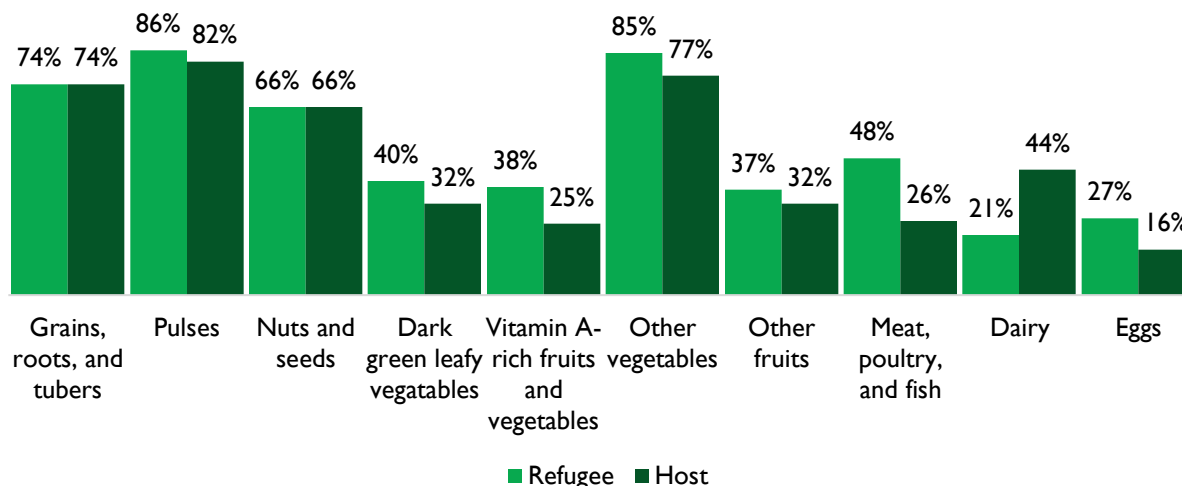


Source: Coach Bi-Annual 2021 dataset, n = 5,471

According to FGD participants, prior to the Activity, children aged 6 to 23 months were primarily fed foods such as milk, potatoes, matooke, or pumpkins because they were considered “soft foods.” Other foods, such as cassava, posho, sweet potatoes, and meats were reserved for adults. However, after the Activity, participants shared that they are feeding children foods from different food groups, first chopped into small sizes, and blended together. Participants referred to largely feeding their children beans, cassava, sweet potato, and fruits after preparing them properly. One youth female from the host community shared that after the Activity, she fed her child meat whereas before she often would give her child matooke and bean soup.

Women of Reproductive Age Dietary Diversity Practice. According to the 2021 Coach Annual Survey, dietary diversity among women of reproductive age also lags behind household-level dietary diversity. More than one third of women in this age group reportedly did not consume minimally diverse diets in the 24 hours immediately preceding their survey date. By community type, diet composition varied little in terms of staples, pulses, and nuts and seeds; but differences in vegetable and animal-based food consumption were more pronounced and mirrored trends at the household level and among children aged 6 to 23 months (Exhibit 16).

Exhibit 16: Women of Reproductive Age, Food Groups Consumed in the Past 24 Hours



Source: Coach Bi-Annual 2021 dataset, n = 5,471; Note: Values restricted to primary survey respondent.

Dietary Diversity Knowledge and Attitudes. Across FGDs, participants demonstrated increased knowledge and favorable attitudes around dietary diversity, including knowledge of

I didn't know someone could grow greens, I thought they grow by themselves in the wild.

Youth male FGD from the refugee community

different food groups and their nutritional benefits, changed attitudes around nutrient-dense foods, changed knowledge of the kinds of foods to feed children aged 6 to 23 months, and an increased understanding of the link between pregnant women's diets and fetal development. For example, adult males in the refugee community noted that they learned "about the different food groups, and the different nutrients that foods carry," which aligned with the Activity's approach to sensitizing participants around balanced diets. The

approach, focusing on the "Go, Grow, and Glow" food groups, was reiterated by adult females in the refugee community: "I did not know about . . . different categories containing body building foods, energy giving foods, and protective foods." Participants noted a large perception shift around dark green vegetables, with some participants sharing that they were treated as a last resort in times of scarcity or that they weren't something to be grown by households (refer to quote). One adult female from the host community shared that she knew that when cooking primarily staples, "then I need to get vegetables such as sukuma wiki to make a complete meal." Adult males in the refugee community echoed these sentiments sharing that "Community Based Trainers (CBTs) trained [them] how to plant vegetables . . . and this helped [them] to have the three food groups at every meal hence being able to fight malnutrition." It is worthwhile to note that most of the discussions around dietary diversity focused on balanced meals, ensuring that each meal includes one of the food groups from the Go, Grow, and Glow framework.

This knowledge of dietary diversity was echoed in participant discussions around pregnant women's diets and feeding children aged 6 to 23 months. An adolescent male from the refugee community shared his new understanding that "feeding on varieties of foods helps young babies to grow well and develop their brains," highlighting increased household understanding of the link between nutrition during pregnancy and infant development. As referenced in the practice

section, the majority of participants demonstrated a change in attitudes towards “hard foods” as unsuitable for children, with several participants sharing that prior to the Activity, they did not believe foods such as meat, chicken, sweet potatoes, eggs, cassava, or posho were appropriate. One adult female from the host community shared “I could not believe that a 2-year-old baby can eat meat,” and several participants referenced learning to prepare Ekitobeero, helping them prepare more balanced meals for their children.

Meal Frequency: Positive Shifts in KAP

Meal Frequency Practices. As of 2021, children aged 6 to 23 months reportedly consumed an average of 2.5 meals/snacks daily,²⁰ as reported by respondents from the 2021 Coach Bi-Annual Survey. More specifically, children aged 6 to 23 months who were not breastfed consumed 2.74 meals/snacks and 4.11 food groups on average daily, whereas breastfed children consumed slightly fewer meals/snacks (2.44) and food groups (3.93). Children aged 6 to 23 months in refugee communities reportedly consumed more food groups on average as compared to their counterparts in host communities.

In interviews with the Activity’s participants and stakeholders, both the host and refugee communities shared that they had increased the number of times per day that they fed their children since the beginning of the Activity. A coach in the host community shared that one participant in particular “increased [] the frequency to three times in a day. She used a proportion of the consumption support to buy food, started saving in three VSLA groups and used the asset transfer to buy a cow alongside farming.” In the refugee community, a Community Women Councilor (CWC) explained that “since the transfer started, I noticed good improvement; households that were consuming one meal a day started consuming three because people started small businesses and the profits enabled them to buy food.” All coaches generally praised participants for increasing the number of meals consumed per day.

Meal Frequency Knowledge and Attitudes. In addition to improved practices, households experienced changes in their knowledge and attitudes surrounding meal frequency. Across FGDs, participants shared that they gained knowledge regarding how to increase the frequency of their meals by generating income to purchase more food for the household. Not only were participants taught how to do so, but they were taught the general importance of eating multiple times per day. A group of adult males in the refugee community shared that coaching “taught [them] about the need and how to eat three times” a day. Adult males in the refugee community added that Activity “coaches that have given [them] education,” teaching them how to best grow and store enough food for household consumption.

Nutrition During Pregnancy: Positive Shifts in KAP

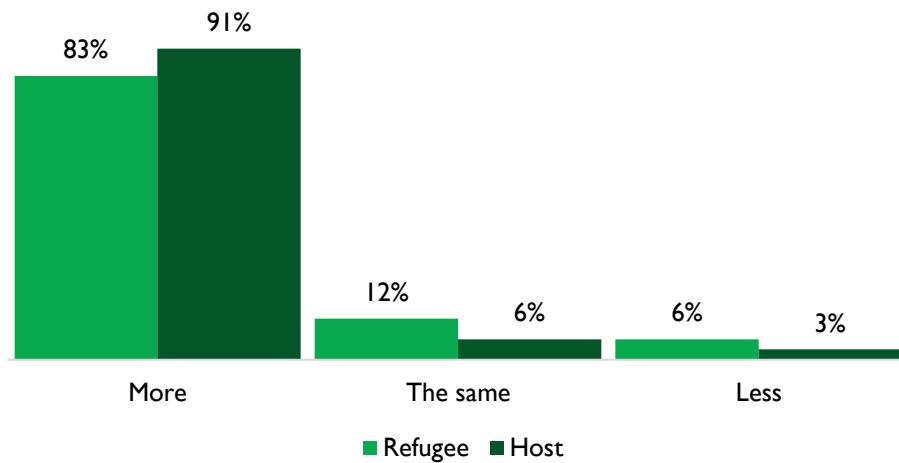
Nutrition During Pregnancy Practices. Both female and male participants shared that women have improved their dietary practices during pregnancy and lactation. An adult female in the refugee community noted that “pregnant women . . . eat three full meals with three categories of food both during pregnancy and after delivery, in order to prevent weight loss and malnutrition.” This is an incredibly important change in practice resulting from the Activity.

²⁰ This does not account for milk feeds. In the 2021 Coach Bi-Annual Survey, the number of meals was truncated at greater than three, so the estimates for average number of meals/snacks may understate the average. For example, among surveyed households, most reported that their breastfed and non-breastfed children who were aged 6 to 23 months ate more than 3 meals/snacks (57% and 78%, respectively).

Adolescent males in the host community shared that “our mothers are feeding very well.” One youth female in the host community noted that “pregnant women and breastfeeding mothers are now given a priority when it comes to nutrition. They eat more than three times and are given nutritious food such as meat.” However, this same interviewee also added, “we still have mothers that still do not eat when they are pregnant because of the pregnancy and being too selective,” which is a common theme and refers to normal food preferences during pregnancy. While meal frequency and dietary diversity practice has changed, from the quantitative data, it appeared that dietary diversity across women of reproductive age was lagging, as described above (refer to Exhibit 16).

Nutrition During Pregnancy Knowledge and Attitudes. All participant age groups were able to demonstrate an increased understanding of how pregnant and lactating women should eat and why. For example, a youth male in the refugee community explained that he “learnt about the need for lactating and pregnant mothers to eat more times than any ordinary member” of the family. An adult female in the refugee community reiterated this, saying that “I know that a pregnant or lactating mother has to eat an extra meal besides the three meals in a day in order to boost her nutrition since she is feeding a baby, she needs to add snacks in between meals.” This was further emphasized in the quantitative data, illustrated in Exhibit 17, indicating that there was high agreement that pregnant women should be eating more during pregnancy.

Exhibit 17: Maternal Nutrition Knowledge: Should a Woman eat More, Less, or the Same Amount During Pregnancy?



Source: Coach Bi-Annual 2021 dataset, n = 877; Note: Values restricted to primary survey respondent and respondents with children under 2 years old.

Infant Feeding: Positive Shifts in KAP

Infant Feeding Practices. According to the 2021 Coach Quarterly Survey, 8% of surveyed households have a child aged 0 to 5 months, and of these households, 95% reported exclusively breastfeeding the child aged 0 to 5 months. This is aligned with the best practice of exclusive breastfeeding for the first six months of life recommended by the World Health Organization (WHO) and United Nations Children’s Fund (UNICEF). This finding was echoed in the qualitative data from KIs in both the host and refugee communities: in both communities, participants highlighted the change to adhere to exclusive breastfeeding (refer to quote). The frequency of breastfeeding also increased. An adult male in the host community noted that “the number of times a child is breastfed in a day has changed . . . significantly” to more than six times daily. Adolescents also were familiar with these changes. However, multiple female participants in both the host and refugee communities shared they still struggled with a lack of breastmilk, either due to naturally having a lack of breastmilk, having twins, and needing to feed two babies at the same time, or struggling with breastmilk at initiation and losing the patience to wait for it to form.

Women are now breastfeeding exclusively up to 6 months unlike before.

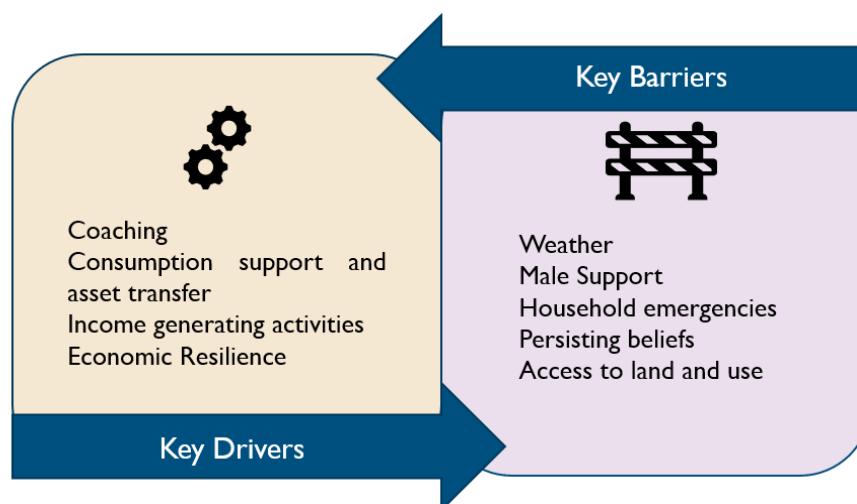
KI with RWC in refugee community

Infant Feeding Knowledge and Attitudes. Across both refugee and host community groups, 94% of respondents from the 2021 Coach Bi-Annual Survey correctly identified that women should start breastfeeding within one hour of birth and 98% correctly identified that infants should be introduced to solid or semisolid foods at six months of age, demonstrating high knowledge levels of infant feeding practices. This was reflected in the qualitative data, with adult female FGDs sharing that they know that mothers should be exclusively breastfeeding up to six months and not introducing other foods, such as hot water or mushroom soup as was the practice before. A youth female FGD from the refugee community was able to articulate the link between breastfeeding and malnutrition, sharing that exclusive and frequent breastfeeding during the first six months reduces the likelihood of malnutrition among children. In terms of early initiation breastfeeding, adult female and youth female participants were also able to clearly articulate their knowledge of when breastfeeding should begin, for example, one shared that she “learnt that immediately after giving birth, a baby should be breastfed at least within an hour” and she “did not know [that] before.” In terms of breastfeeding frequency, knowledge of frequency seems to have increased among males who shared they did not know that children had to be breastfed as frequently and would “only consider breastfeeding when the child cries.” Adult male FGDs commented less around exclusive breastfeeding or early initiation breastfeeding practices but demonstrated their knowledge that breastfeeding should continue up to two years, which is aligned to young child feeding practices regarding non-exclusive breastfeeding.

2.1.2 Drivers and Barriers to Nutrition KAP Changes

The main drivers and barriers cohort one participants identified as shifting their KAP across nutrition practices are summarized in Exhibit 18 and further detailed below.

Exhibit 18: Drivers and Barriers to Nutrition KAP Changes



Drivers

Coaching. Across participant FGDs and stakeholder KIIs, participants most frequently identified coaching as the basis that supported observed changes around food security, household meal frequency, infant feeding practices, young child feeding practices, and dietary diversity, despite some remaining challenges, as discussed above. Participants highlighted the following areas in which they were supported by coaches:

Exhibit 19: Areas in Which Coaches Support Participants in Nutrition

Food Security	- Ensuring households have kitchen gardens - Following up on CBT trainings - Ways to minimize food waste - Saving to purchase food	
Meal Frequency	- Emphasizing eating 3 meals a day - Planning for meals as a household	
Infant Feeding	- Emphasizing exclusive breastfeeding under 6 months - Frequency of breastfeeding	
Young Child Feeding	- Kinds of foods suitable for children - Introducing soft foods after 6 months and non-exclusive breastfeeding	
Dietary Diversity	- Benefits of different food groups - Cooking demonstrations of nutritious meals - Value of food already available	

Coaching enabled me access to information that I would rarely receive, I was periodically guided and was given constant feedback on things I was doing well and was encouraged on things that weren't going according to plan.

Youth male FGD from the refugee community

Participants widely identified coaching as a particular benefit to households not only in supporting the shifts in nutrition KAP, but also as being a source of holistic encouragement and support, as highlighted by one youth male from the refugee community (refer to quote). Coaches' contributions to shifting nutrition KAP was also recognized by stakeholders in KIs. For example, a host community Village Health Team (VHT) stated, "coaching has helped most women to learn how to best feed their children" and that there are no longer malnutrition cases in the households that have coaching.

While participants perceived coaching as a strong influence on their nutrition KAP regardless of the coaching model (i.e., group or individual coaching) they experienced, the 2021 KPIs on dietary diversity demonstrate mixed patterns by coaching model and exhibit small percentage point differences between the different models. As previously noted, 2021 FCS scores and MDD among children 6 to 23 months are highest among households in treatment arm two, which implements a group coaching model, relative to treatment arms one and three, which implements an individual coaching model; nevertheless, MDD-WRA was highest among primary participant females in coaching arm one, followed by arms two and three. Higher indicators for treatment arm two points to the potential role of social reinforcement in group settings in addition to coaching. However, given this small set of KPIs, which demonstrated small differences on average by treatment arm, the differential influence of coaching models requires further analysis.

Consumption support/asset transfer. Participants in FGDs emphasized that consumption support and asset transfers enabled them to purchase foods that they could not produce themselves, including meat, fish (especially silver fish), rice, posho, and egg-laying hens. The FGD participants asserted that these funds enabled them to increase their meal frequency and dietary diversity, even if full adherence to minimally diverse diets faltered in practice. This is further supported by the analysis on the FCS, where treatment arms one and two, which did receive the asset transfer, had higher FCS than treatment arm three, which did not receive the asset transfer. Adult male FGDs from the refugee community described going a long time without eating meat or other animal proteins however, because of the asset transfer, they asserted that "after getting the support we could eat meat every weekend because we had the money." Both adult and youth from the refugee community described how the consumption and asset transfer helped complement and "top up" the food rations provided by WFP, which by and large were considered insufficient by all participants who referenced them. Participants referenced that because of the support they were able to stock food while waiting for the harvest, when cultivated crops were less available.

While participants referenced food purchases with *both* consumption support and asset transfers, participants less frequently reported using their asset transfer to finance improvements in agricultural inputs. Only one adult male FGDs described using the asset transfer to buy livestock, including goats, cows, and hens, which allowed him to provide milk and eggs for his children. Women and youth who reported buying livestock tended to describe doing so because of their profits from income generating activities. Women shared that they used the asset transfer to

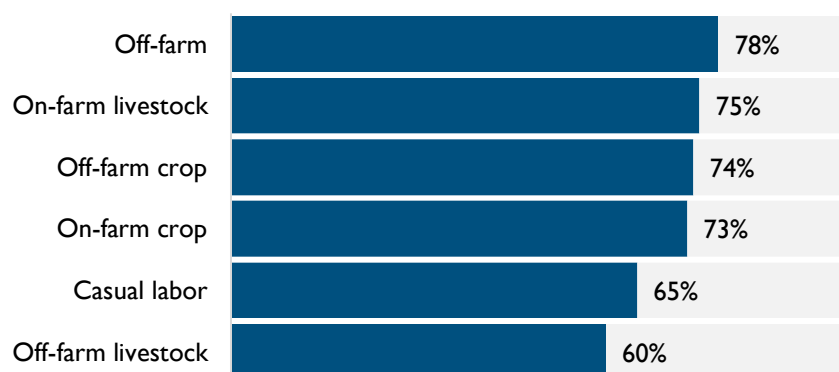
spur the growth of their income generating activities (IGAs), which income they used to purchase food and WASH supplies to the household.

Across FGDs, participants' discussions of consumption support and asset transfers in relation to nutrition largely focused on giving participants the ability to increase meal frequency and diversity for the whole household, particularly for children and pregnant women. However, in practice, some participants stated that they would not spend this money on food or starting or expanding an IGA. Conflict within the household, often stemming from alcoholism largely among men, prevented some households from spending the money from consumption support or asset transfer on increasing their household's food security or IGA opportunities. Coaches in the host community noted that some "used almost all money to buy alcohol, thus trading off buying food with alcohol."

Income generating activities. Across participant FGDs, respondents shared that they perceived that their food security improved. They attributed this improvement to activities that increased household income, whether from businesses or from their agricultural production, which in turn enabled them to purchase more food for the household.

The quantitative data underscored participants' perceptions. When comparing household food security status, as measured by the FCS, with reported livelihood activities, it appeared that households with off-farm economic activities, which included formal and informal businesses as well as micro-enterprises, were most likely to be food secure (Exhibit 20). Households engaged in on-farm livestock and agricultural activities (e.g., off-farm crop, and on-farm crop) also were more likely to be food secure, which was consistent with previously discussed quantitative and qualitative findings.

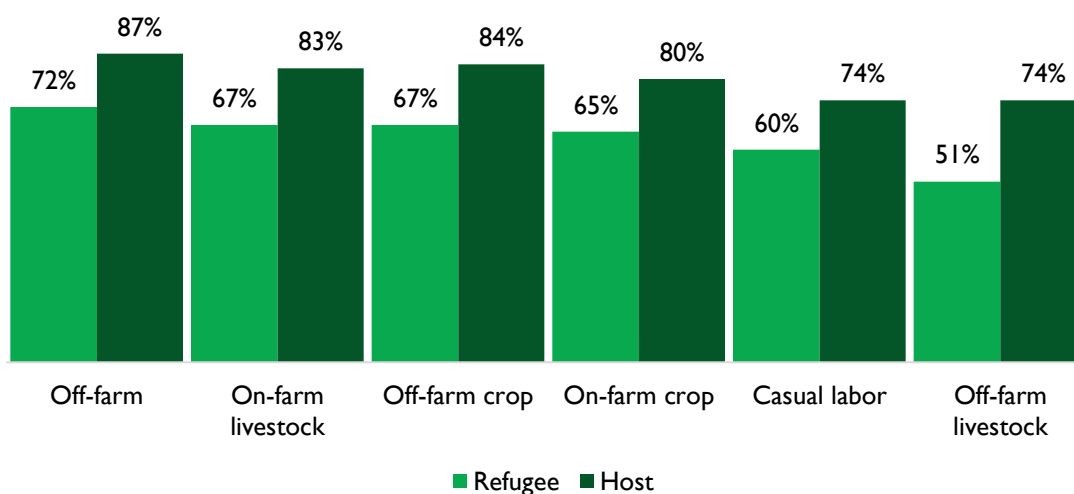
Exhibit 20: Likelihood of Food Security by Livelihood



Source: Household Survey, n = 660

Although the type of livelihood in which a household engages appeared to be a driver of food security, refugee households were less likely to be food secure regardless of the type of livelihoods in which their households engaged. This reflects unique underlying barriers to food security faced by households in refugee communities.

Exhibit 21: Likelihood of Food Security by Economic Activity and Community Type

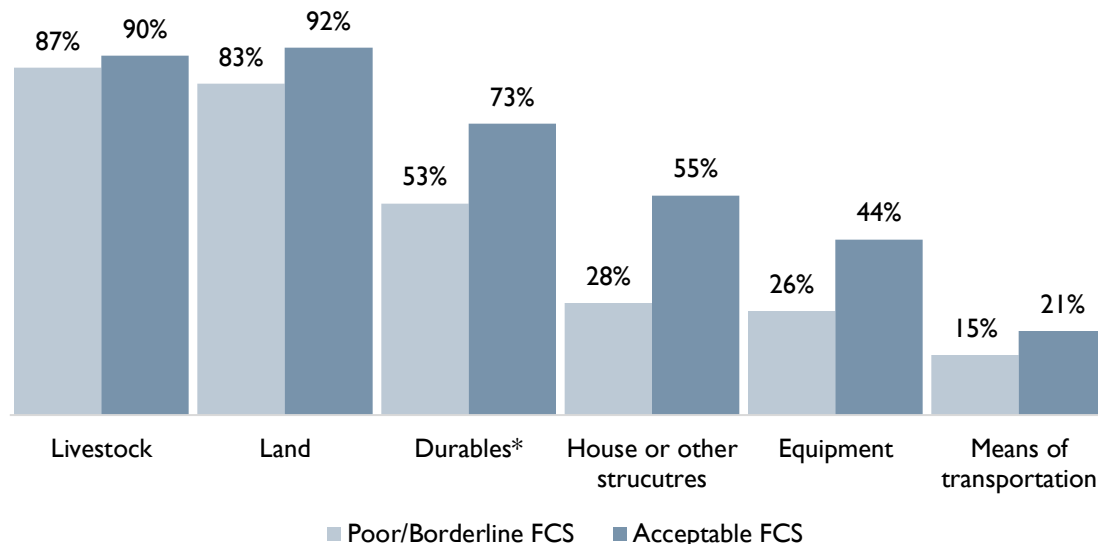


Source: Household Survey, n = 660

Data from the household survey simultaneously indicated that livelihood diversification in terms of the average number of livelihoods a household reported was associated with food security status. The average number of livelihood activities among food secure households (2.29) was lower than food insecure households (2.46). This disparity was driven mostly by the fact that food insecure households more frequently engaged in various kinds of agricultural livelihood activities as well as casual labor.

Economic resilience. The household survey data indicated that net household annual earnings across livelihoods was strongly associated with food security status. Food secure households reported an average of 1,126,277 Ugandan Schillings (UGX) in annual net earnings, which was comparatively higher than that of food insecure households (782,209 UGX). In addition, food secure households more frequently reported ownership of productive capital, especially equipment (44%), durables (73%), means of transportation (21%), and shelter (55%) (Exhibit 22).

Exhibit 22: Household Ownership of Productive Capital by FCS



Source: Household survey, $n = 775$; Note: *Durables include household consumer goods (e.g., refrigerator, cookware, television, sofa) that are not consumed in one instance but rather yield utility over time.

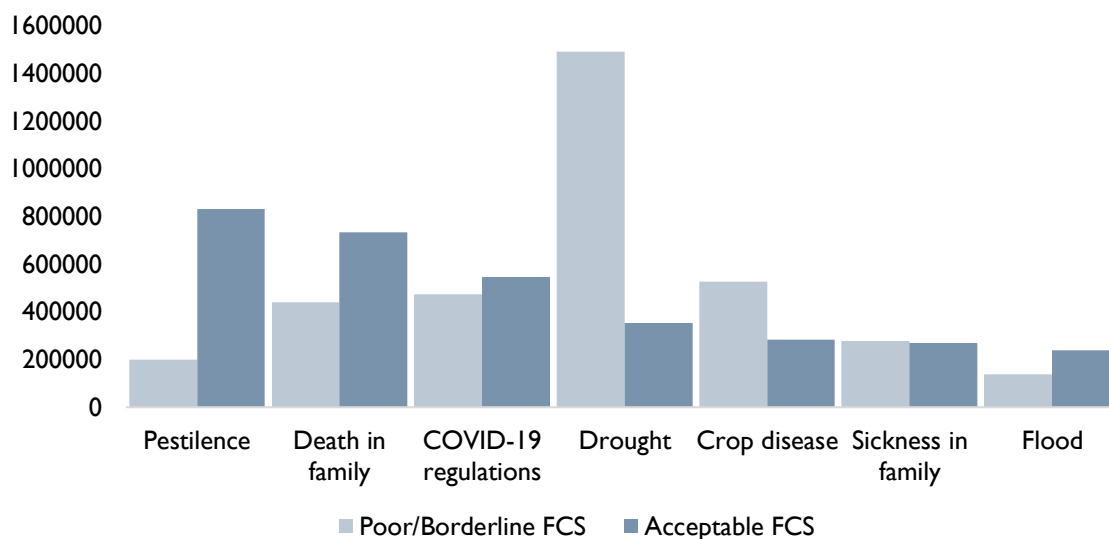
While these associations did not speak to causal relationships, they indicated that food secure households had more economic resources and, as such, were less vulnerable to shocks (e.g., food price volatility) that could undermine their ability to consistently consume nutritious diets.

Barriers

Weather. All participants and stakeholders, across FGDs and KIIs, indicated that the most common impediment limiting their ability to achieve nutrition goals was unfavorable weather conditions for crop growth. Adult females in the host community shared that “sometimes the weather is not favoring the crops, and this results in low yields hence limiting the food available for the household.” Adverse weather conditions created obstacles to maintaining their improved practices around meal frequency, as well as limited dietary diversity within households, including those with pregnant women and children aged 6 to 23 months. This sentiment was echoed by youth males from host communities who shared that there was “unpredictable weather” and that the “late onset and early climax of rains” left crops fragile and led to poor yields. However, drought also remained an issue. Given that both the refugee and host communities rely on rain-fed irrigation practices, weather presents a considerable risk and barrier to food security and nutrition regardless of community type.

Quantitatively, many more food secure households who responded to the household survey reported drought (37%) as a household economic shock than food insecure households (21%). Additionally, among households that reported cash shortages, more food secure households reported that weather caused the shortages (37%) than food insecure households (26%). Although drought was less commonly reported as an economic shock among food insecure households, Exhibit 23 demonstrates the magnitude of losses imposed by drought on these households when they reported facing this shock.

Exhibit 23: Household Income Loss (UGX) in the Past 12 Months by Shock Type and FCS



Source: Household Survey, n = 718

When COVID-19 hit, meals decreased because we lacked where to sell our business items.

FGD with adult females in refugee community

COVID-19. The participants' ability to purchase foods to supplement crops and ensure meal frequency and dietary diversity practices was limited at times due to restricted access to markets, especially during COVID-19. Adult females in the refugee community shared that they "had to improvise and start other businesses" to help make ends meet when government-imposed movement restrictions and market closures to reduce the spread of COVID-19. These restrictions resulted in limited availability of products, leading to participants' inability to buy a wider range of foods for their

families. Many participants shared that they had to reduce their meal frequency (refer to quote) because of lost profits.

Lack of male or household support. Throughout the FGDs, participants highlighted improvements in joint decision-making and household planning between women and men. Adult females from the refugee community shared that "we plan together for all things in the household including food and care of the children." The majority of participants articulated how in the beginning, male spouses tended to want to make the decisions and not engage with women in household resource planning, but that this changed. However, less progress appeared with respect to *sharing* household responsibilities, especially along gendered distributions of household labor that were relevant to nutrition, including kitchen gardens, preparing meals, and caring for children. For example, coaches from the refugee community shared that some households believed that men should only help with cultivation while women are responsible for most of the garden work including planting, weeding, fertilizing, applying pesticide, and harvesting, in addition to household chores like cooking and caring for children. They shared that in these cases, households tended to produce less from gardens given the time burdens faced by women. Coaches further emphasized that men tended to want to be engaged more in finance-related activities, including saving, resource planning, and business. However, the coaches shared that

some men took up new household responsibilities, mostly related to WASH-relevant activities, because of Activity sensitizations.

In addition, lack of male support including the mismanagement of household income, in some cases, affected women's abilities to have a balanced diet during pregnancy. A Refugee Welfare Committee (RWC) interview mentioned that the "mismanagement of households' income by men" and the "neglect by husbands who are supposed to care for their wives" contributed to pregnant women's poor diets. Related to supporting women in breastfeeding practices, women's time burdens are vast, and it affected breastfeeding practice. A youth female in the refugee community lamented that "there is improvement with exclusive breastfeeding however some mothers have challenges around it such as going to work in the host community and leaving the baby behind," noting that it would be beneficial for women to have household support during the first six months post-partum so that women could stay near their child for breastfeeding purposes.

Household conflicts between spouses also affected breastfeeding or child feeding practices. An adult female in the host community noted that some women "have issues in the households where a woman is forced to leave the child behind with the father," preventing her from spending time with the child to breastfeed them or relying on the father to feed the child appropriately as per the recommended practices. Finally, improvements in household joint-decision making around finances was, at times, hampered by household conflicts driven by substance abuse. Adolescent females in the host community described "conflicts in a home where the parents do not agree on how to use the money and they use it to drink alcohol when there is not enough food at home."

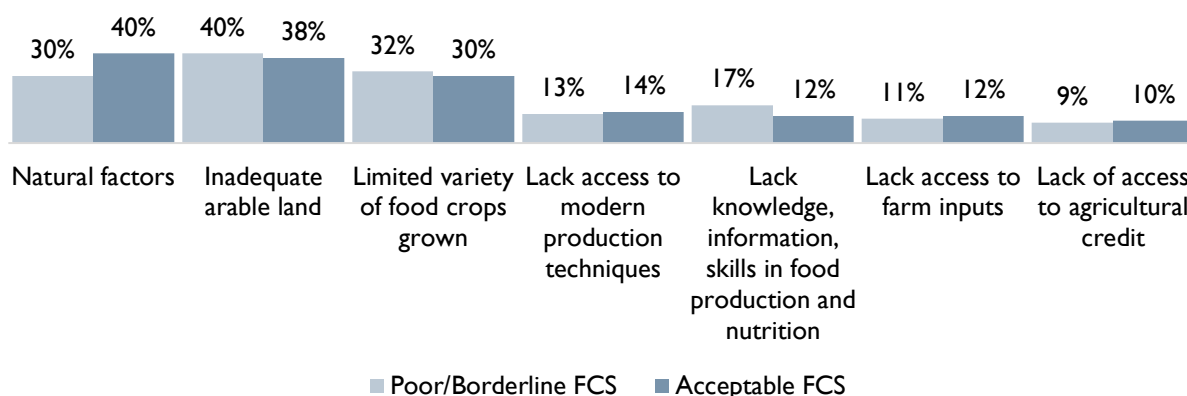
Household emergencies. Sudden emergencies that required a diversion of household funds also prevented some households from making progress towards their nutrition goals. Adult males from the refugee community shared that while they knew consumption support was meant to support food purchases, they had to divert the funds to support a medical emergency. Meanwhile, adolescent males from the host community shared that when a parent fell ill during critical moments in the crop cycle, they would not receive any harvest during that season. This was further echoed by youth males from both the refugee and host communities, highlighting how vulnerable household food security is to shocks.

Persisting beliefs around pregnant women. There were several persistent beliefs in the region that limited women's diets during pregnancy. An elder in the refugee community shared two taboos: "pregnant women are not supposed to eat blood from a goat for it is believed that you will have a child that has nose like that of a goat," and "when a woman eats red pepper when she is pregnant, she gives birth to a child without eye lids." Because of these taboos, women limit their dietary diversity, although there are no scientifically proven consequences to eating these foods. Religious leaders also shared their beliefs that eating porridge will limit a mother's ability to push when giving birth. Similarly, there is no scientific basis for this claim. Religious leaders and elders also described religious practices that limit dietary diversity, including Muslim proscriptions on eating pork. Another religion, Bagorissi, does not permit followers to eat meat of any kind. Activity nutrition programming such as cooking demonstrations and sessions on the Go, Grow, and Glow framework should take into consideration religious dietary restrictions to be sure everyone knows how to prepare nutritious and diversified meals within the bounds of their religious beliefs. Meanwhile, health stakeholders and participants shared that the taboo that

women should not breastfeed while pregnant has persisted despite the Activity’s efforts, which, as mentioned before, causes problems especially among women with small spacing between births.

Access to land and land use. Participants shared that they had access to limited land for food production. A host community CWC stated that some households are “living on less than 0.25 acres and unto which they cannot grow enough food for the household and their children.” A CWC in the refugee community echoed this opinion. A Health Center in Charge (HCC) in the refugee community also noted that those who experience minimal food insecurity are those “who can’t afford more land to cultivate more food.” For those who have access to rented land, it is generally distant from their household. Furthermore, respondents from the household survey who did not perceive their household as food secure (14%) commonly cited inadequate arable land as a constraint (39%), regardless of their food security status (Exhibit 24).

Exhibit 24: Perceived Constraints on Household Food and Nutrition Security



Source: Household Survey, n = 106

2.2 Status of Health Service Provision

Access to health services is a crucial aspect of reinforcing and further supporting households’ health in addition to nutrition and WASH practices. In assessing household perception and practice changes around accessing antenatal care (ANC) and other health services, using prenatal supplements, and practicing family mid-upper arm circumference (MUAC), the team identified notable shifts in KAP across each of these topics. In this section, we provide our findings related to the shift in KAP around health services, divided by ANC visits, prenatal supplements, and family MUAC. Next, we discuss cohort one participants’ use of referrals and their perceptions of services. Finally, we identify and categorize key drivers and barriers that emerged as themes across quantitative and qualitative findings.

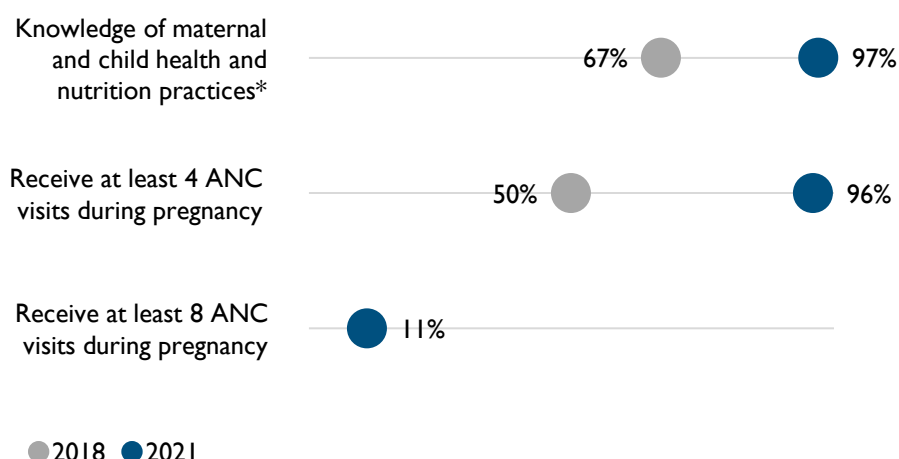
2.2.1 Health Service Provision KAP

Pregnant women in host and refugee communities are encouraged to have a minimum of four ANC visits. For cohort one, the Activity focused on promoting adherence to the four ANC visits throughout pregnancy following the Focused Antenatal Care Model (FANC) best practices. In 2016, the WHO issued updated guidance, which increased the recommended number of ANC

visits to eight, after findings suggested fewer visits may be associated with higher risks of perinatal deaths.²¹ The Activity did not introduce the guidance around eight ANC visits to the cohort one training and sensitization content until 2020 when the Activity started tracking this through its KPIs. As a result, the focus of the progress will center on the recommended four ANC visits, while the relevant drivers and barriers may be important consideration if the Activity decides to promote the eight ANC visits for cohort two.

ANC visits usually include health education sessions on pregnancy, and general health checks of the pregnant woman, such as measuring MUAC, weight, height, and blood pressure. If a pregnant woman is suffering from malnutrition, she is referred to a maternal health program. According to stakeholders from Medical Teams International (MTI) interviewed in KIIs, ANC visits are also used as a moment to provide critical health education, such as danger signs during pregnancy (extreme swelling, headaches, etc.), delivering healthy babies, immunizations, and Human Immunodeficiency Virus (HIV) prevention, as well as HIV testing. During ANC visits, women are provided with recommendations for prenatal supplements, including iron, folic acid, and Fansidar.²² Finally, to further support malnutrition screenings among children, the Activity introduced during cohort one the practice of family MUAC, which seeks to empower participants to monitor their children's nutrition status and seek appropriate services with the support of a coach. The family MUAC approach was introduced to cohort one later in implementation, due to the constraints of COVID-19. The sections below provide greater detail about the changes that we observed in KAP across ANC, prenatal supplements, and family MUAC.

Exhibit 25: Child Health Performance Indicators – 2018 vs. 2021



Source: Coach Annual 2021 dataset, n = 4,913; Coach Bi-Annual 2021 dataset, n = 5,471; Coach Quarterly 2021 dataset, n = 5,019; 2018 values provided to AVSI by IPA

ANC Health

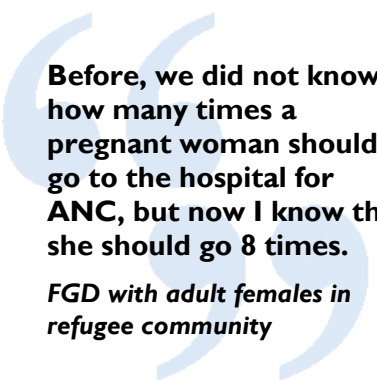
ANC health practices. According to the 2021 Coach Annual Survey, households with children under five years of age reported that women had an average of five ANC visits before the birth

²¹ WHO 2016. <https://apps.who.int/iris/bitstream/handle/10665/250796/9789241549912-eng.pdf>

²² Fansidar is an anti-malarial tablet.

of any child in their household under five years of age. However, with WHO's change in recommended best practice increasing to eight ANC visits during pregnancy, households are lagging, likely because of the Activity's prior focus on sensitization around four ANC visits during pregnancy. ANC practice did not feature prominently in participant FGDs across communities and groups. However, community stakeholders' observations gave some insights into ANC practice among participating households. They observed that pregnant women in the communities tended to report only once or twice for ANC to get an ANC booklet, which women are required to have during pregnancy. While it may be the case, we observed that Activity participants seemed to seek more frequent ANC. However, stakeholders revealed several important and unique barriers further discussed in section 2.2.2.

ANC knowledge and attitudes. While participant FGDs did not reveal significant changes in knowledge and attitudes around ANC, one adult female from the refugee community shared her experience (refer to quote). It was interesting that she recalled the need to attend eight times, which is the recommended practice, but sensitization had previously focused on four ANC visits. At the same time, the performance monitoring data in Exhibit 25 above highlights an increase in knowledge around maternal and child health practices, which includes ANC. Stakeholders reported through KIs that there continues to be a lack of knowledge on the importance and benefits of ANC, particularly among different age groups. For example, they shared that first time mothers often don't know what to do and are influenced by their mothers and grandmothers, who successfully gave birth without ANC, thereby making the case for increased number of visits difficult. Another such example is a belief cited by a sub-county health assistant that ANC visits are only for women who have pregnancy complications. Across KIs, stakeholders shared that women received mixed messages from healthcare workers and traditional birth attendants concerning the need for ANC visits. Some women preferred to adhere to traditional birth attendants' practices, thereby hindering knowledge around the importance of ANC visits for healthy child development. Finally, VHTs shared that they observed changes in knowledge around ANC amongst participants; for example, the belief that an ANC visit is only needed when sick or the knowledge that early attendance to an ANC visit is the recommended practice.



Before, we did not know how many times a pregnant woman should go to the hospital for ANC, but now I know that she should go 8 times.

FGD with adult females in refugee community

Prenatal Supplements

Prenatal supplements practices. The majority of KI stakeholders emphasized that women had access to supplements, largely for free, which are given to them when they go to the HC for ANC visits. CWC, VHTs, LCs, HC workers, and subcounty health assistants shared that women typically are given prenatal supplements including folic acids, iron tablets, vitamins, and corn soy blend (CSB). Another healthcare worker noted that their facility has never run out of stock and emphasized that if women visit, they are given supplements. While there appears to be access, in terms of practice, participating households did not discuss their KAP around supplements and we gathered information on practices primarily from stakeholder observations. According to VHTs, the main challenge in supplement practice concerned women not competing the recommended dose, particularly of folic acid, because it is a three-month dose. Elders echoed

this sentiment, sharing that because women are very busy, they may forget a dose and then discontinue the remainder of the supplements.

Prenatal supplements knowledge and attitudes. Religious leaders, CWC, and HC workers emphasized some prevailing knowledge and attitudes that seem not to have shifted substantially among the community members. They shared that pregnant women in both refugee and host communities fear medicine or pills, and, in many cases, opt for the local medicinal herbs provided by older women in the communities. A healthcare worker shared that there is a perception among some women that the supplements may hurt their baby. Others believed that the pills “smelled bad” and would make them ill. VHTs highlighted that because the prescribed doses tend to be long, including up to three months, women mostly needed reinforcement and encouragement to finish their course. Finally, stakeholders broadly agreed that many women just did not really know the benefits of supplements and thus were less motivated to take them.

Family MUAC

Family Mid-Upper Arm Circumference Practices. Most adult female Activity participants shared that they have adopted and are applying the practice of family MUAC, most for the first time. Adult females were the greatest adopters of family MUAC practices by far, and adult males expressed more involvement than did youths or adolescents. Adult participants described the ways they practiced family MUAC, including using a MUAC tape to measure the nutritional status of children, interpreting the results, measuring edema, and identifying suspected cases of malnutrition. The majority of participants reported that they screened their children more than once a month. Female youth participants in the host community noted that they only screened in the presence of coaches. Participants shared motivations for screening that centered around weight gain or loss, appetite loss, or being selective with the foods children chose to eat. According to a youth female participant in the host community, some participants “screened three times in a month . . . to ensure that by the time the coach comes to the household” they know what to do, reinforcing the theme in other sections of this report that home visits by coaches served as powerful motivators around adherence to practices.

Though the practice seemed well-adopted by adult women, the majority of adolescent male and female participants noted that they did not know how to do the MUAC screenings. Only some shared that they knew the purpose of the “tape” in their household. They noted they had very limited experience in family MUAC and did not feel it was their role to engage in its administration. They shared that they missed MUAC training because they were either at school, out grazing, or doing other assigned chores during the time of the training. At the same time, adult males shared that they felt limited in their involvement, because the active screening was viewed as the women’s role. However, a few male adults expressed interest in administering it, given that they had received the training.

We measure the length from the shoulder bone to the elbow bone using the tape and divide it in half. After which we measure the circumference of the middle arm and if the child is in yellow, it means the child has started being malnourished, in green, you confirm that the child normal and in red, it means that the child is in danger.

FGD with adult female refugee community

Family MUAC Knowledge and Attitudes. Participants, mostly adults, expressed excitement about their new ability to monitor their children’s nutrition status continuously to overcome malnutrition. During FGDs, participants clearly articulated their new knowledge of how to do MUAC screenings and interpret the results to take the right action, as highlighted by female adults in the refugee community (refer to quote above). Participants also shared that they increased

Even if the neighbor’s child falls sick, we support them by screening the child to see if they are malnourished.

FGD with adult females in refugee community

their knowledge of how to conduct other measurements, such as height and weight.

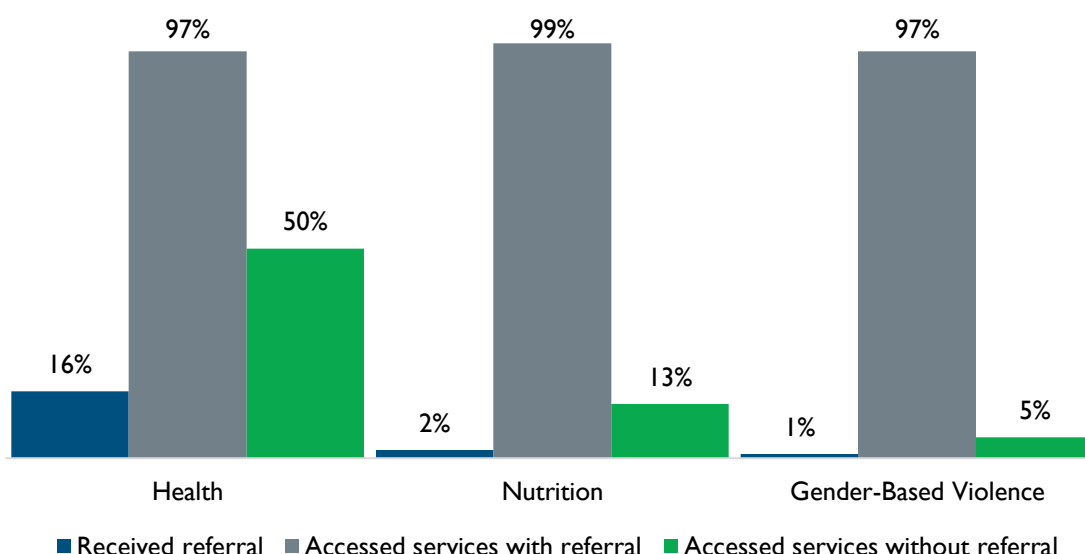
Participants shared that a ripple effect of their newly acquired knowledge and application of the practice was that they were able to support other community members. They discussed that they were able and interested in supporting their neighbors screen their children who showed signs of malnutrition and supported them to seek VHT referrals as needed (refer to quote, left). In administering family MUAC, youth female participants noted the screening process was

hard in the initial stages, but ongoing practice and support increased their confidence. Further, coaches observed that the participants became more self-reliant in managing their own household’s malnutrition.

Experiences with Referrals

To access a referral, VHTs refer a malnutrition case to the HCC. The HCC then engages in a reassessment and classification of the case, which then guides the management protocol that the case should follow. After a child is referred and seen at the health facility, the information is then given back to the VHT, who follows up to see if the recommendations are being followed, which usually entails giving CSB to the child. Throughout this follow up period, VHTs also engage in sensitization and if the child improves, the case is closed. For very mild cases, VHTs aim to teach the mother how to feed the child properly and manages the case at home rather than in a HC or other facility. Activity participants shared mixed reviews of the referral system, described below, but many shared that they had not received a referral or know anyone who did. Quantitative data supports this perception of limited use of the referral system: few households reported receiving any kind of referral (19%); however, of those that received referrals, nearly all were able to access the services to which they were referred (Exhibit 26). With the exception of health services, few households sought services without a referral. By community type, refugee households more likely sought services without a referral across all service types.

Exhibit 26: Referral Frequency vs. Ability to Access by Referral Type



Source: Coach Bi-Annual 2021 dataset, n = 5,471

Satisfaction by participants and health centers with referrals. The participants who accessed the Activity’s referral services and attended referral visits generally had positive experiences. For

One of our group members had a malnourished child and the child was referred to Rwamwanja ... and as of now the child has fully recovered.

FGD with adult females in refugee community

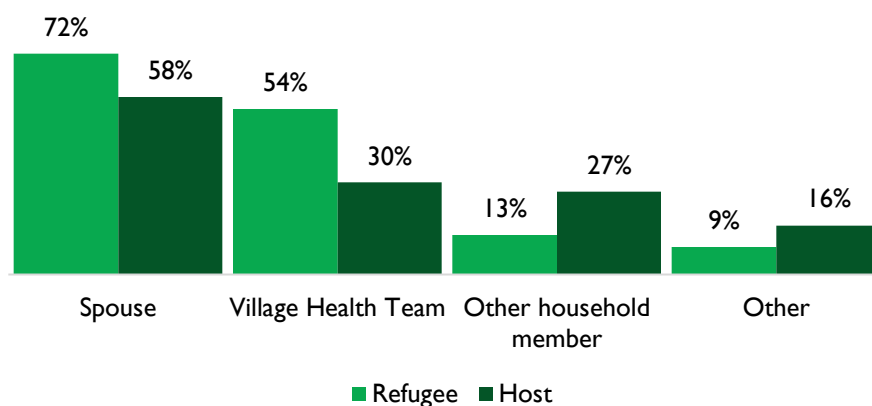
example, adult males in the refugee community described that at referral visits for their children, they were given CSB and other supplements, and the children since have recovered. A youth male praised that his wife received “services for free,” sharing that the family would have not been able to afford the treatment. An adolescent male added that with the referral form, his mother was “served immediately with malnutrition treatment” and did not have to wait in a long line at the health facility. At the same time, HC expressed seeing value in coordinating with the Activity’s referral system. For example, host community HCC shared that they received referral participants who were easy to handle because they already had nutrition counseling and

education from the Activity, and they had “not feeling of denial or thinking of witchcraft” and quickly responded to treatments.

Feedback on VHTs. The District Nutrition Focal Point in Kamwenge praised the VHTs’ follow up. However, with the large amount of work required of VHTs, some were “overwhelmed” and might “drop out,” according to the District Health Officer in Kamwenge. An NGO echoed this statement, sharing that some VHTs in the host communities were inactive and belatedly identified cases. The quantitative data indirectly reinforced this finding (Exhibit 25). When we asked participants about whom they referred to when discussing health and nutrition, 54% of the refugee community respondents and only 30% of host community respondents mentioned VHTs, signaling that VHTs were less present or less available. According to Activity staff, the higher number among the refugee community might have been the results of increased NGO funding directed to the VHTs in the refugee communities than in the host communities. One NGO

recommended that the Activity hold more frequent capacity building sessions with VHTs during cohort two, citing that the issue of delays largely resulted from ineffective VHTs.

Exhibit 27: Discusses Their Own Health and Nutrition with Others by Community Type

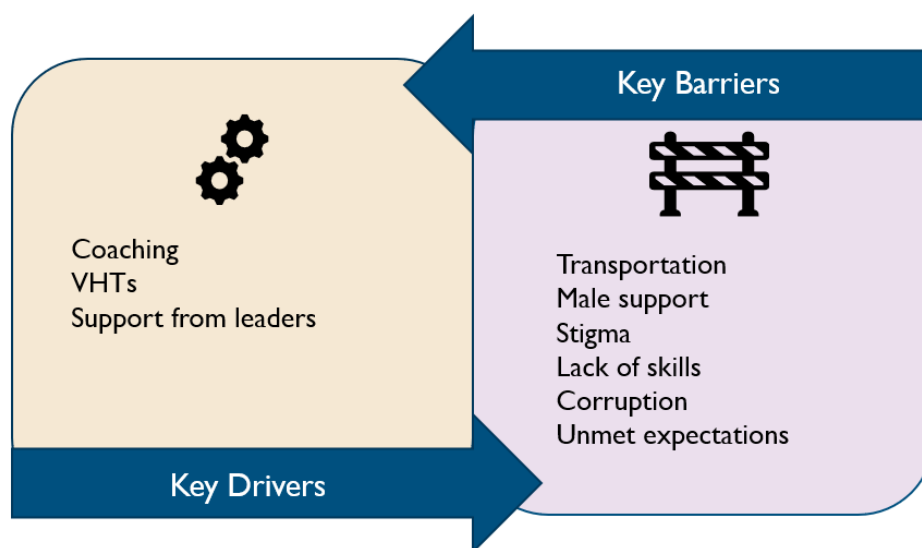


Source: Household Survey, n = 773

2.2.2 Health Service Provision KAP Drivers and Barriers

Several key barriers that prevented access to health services or could present obstacles emerged as common themes, as well as drivers that supported access to required services. These are summarized in Exhibit 28 and detailed below.

Exhibit 28: Drivers and Barriers to Accessing Health Services



Barriers

Distance and transportation. HCCs, VHTs, and a wide variety of Activity stakeholders identified the largest barriers impeding both refugee and host community participants' abilities to attend the requisite number of ANC visits, acquire prenatal supplements, and access health services after a referral, as access to transportation, time to travel to a facility that is far away,

the quality of the roads for travel, and the expense of transportation costs. The Nutrition Focal Point and District Health Officer in Kamwenge echoed both the issues of transport and distance to access services. The average distance to a HC in the refugee community is 4.45 km, while in the host community it is much larger at 30.95 km. Accordingly, those in the host community face greater barriers in terms of physical distance than do those in the refugee community. In terms of cost, VHT in Biguli noted that one needs 14000 UGX (approximately 4 USD) to travel to and from Rwamwanja HCIII, the most well-stocked and preferred facility by community members, while another VHT in Buguta reported that one needs 12000 UGX (approximately 3.50 USD) to travel to and from the same health facility. Though there are closer facilities, participants choose to spend the time and money to travel to the Rwamwanja HCIII. The cost of this trip for each referred service, or four or eight times for ANC visits, is quite expensive, and represents a large sum in comparison with overall household budgeting. The cost can deter individuals from accessing health services.

Male and household support. The Ugandan Ministry of Health initiative requiring that pregnant women must be accompanied by their husbands during ANC visits deterred ANC visits and acquiring prenatal supplements. This initiative aims to encourage male support and couples to take HIV tests together to prevent HIV transmission from mother to child. HC workers and VHTs noted that participants reported that spouses refused to accompany their wives to ANC visits and that this deterred women from accessing ANC. Women shared that they feared health workers' critiques at visiting without their husbands, as well as did not like the bad feelings that resulted when non-accompanied women were served last. Further, men were reported to not provide their pregnant wives with the necessary financial resources to travel to the health facilities or purchase maternity clothes, which women felt were appropriate to travel to the facilities. Men often spent time working away from the home, making their participation difficult, and feared HIV testing.

Household support in family MUAC. While adult women were well-versed in MUAC practices and had the right attitudes to apply the practice, many of the youth and adolescent participants shared that they did not take part in the family MUAC approach because they lacked the knowledge after being unable to attend the trainings. Despite this, they expressed an interest in the practice and, as exhibited by those who did have more engagement (refer to quote), could play a valuable role in reinforcing the practice. At the same time, persistent gender roles prevented some men from engaging in MUAC screenings, believing that MUAC is a woman's role.

Stigma. As briefly noted above, when women attended ANC visits without their spouses, they were concerned about the stigma they would face and that the treatment they received at appearing alone. However, the perception of stigma from healthcare workers arose as a prominent theme in seeking health services in general as a part of referrals or with ANC visits. Stakeholders described these perceptions as follows:

- Health services from referrals: Both host and refugee community coaches cited the treatment centers' biases, nurse attitudes, and the HCs as reasons that participants did not want to follow up on their referrals. This was echoed by adult women who shared they would be judged for being dirty or not having maternity clothes. One refugee community coach shared that there is a "lack of confidentiality" that prevents referral patients from wanting to follow up when they are referred and avoid treatment.

- **ANC visits:** Pregnant women reported feeling judged when giving birth to many children with little spacing, giving birth at a young age (teen pregnancies), and giving birth at an advanced age (geriatric pregnancies). The stigma felt by pregnant women with these characteristics deterred them from going to ANC visits, even though they had greater need of the services and care.
- **Stigma from constrained resources:** many stakeholders shared that congestion at the health facilities was a barrier to seeking services. According to VHTs, host community members resented that refugee community members sought care, causing congestion at health facilities, and treated them poorly. This additional layer of stigma further deterred pregnant refugee women from attending ANC visits.

Traditional birth attendants. According to sub-county health assistants and local council leaders, there continues to be a reliance on traditional birth attendants around pregnancy advice and home births, given that their mothers and grandmothers also followed this practice. Community members continue to hold beliefs that traditional birth attendants are suitable alternatives for ANC visits and thus prefer to use the herbal remedies they prescribe over prenatal supplements, presenting barriers to adhering to recommended practices.

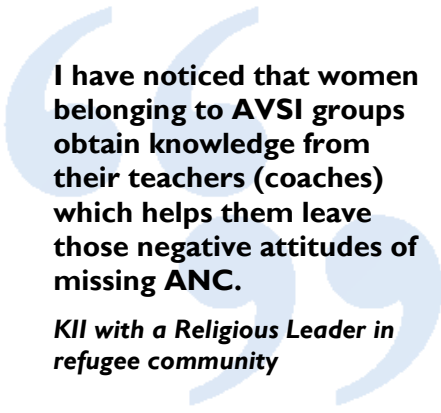
Lack of fundamental skills. Illiteracy greatly affected participants in their family MUAC practices. They reported a lack of confidence and an inability to read actual centimeters to determine progress within the same color code. As noted in the household survey, youth household members on average tended to be more literate than adults and parents in both local languages and English: 45% of youth aged 18 to 24 and 27% of youth aged 25 to 30 were literate, compared to only 14% of adults older than 31. The challenges with literacy and how it could affect family MUAC practices further reinforced the benefits of engaging the whole household in family MUAC and not only adult mothers.

Corruption. Activity stakeholders noted that HCs, at times, tried to take advantage of them in terms of bribes and making participants pay for services that should have been free of charge. Both host and refugee community coaches cited the treatment centers' corruption as a reason that participants did not want to follow up on their referrals. The HCs "ask[ed] for money for a service that should be free of charge." Despite the Activity's initiatives to increase household disposable income, households still worked to save money, inevitably making bribes a deterrent to seek health services. In addition to coaches, a small number of stakeholders, including CWCs and elders, reported that while prenatal supplements were supposed to be free of charge for pregnant women, some women were being asked to pay bribes to healthcare workers to acquire the free supplements.

Unmet expectations. Activity stakeholders, including HCCs and VHTs, as well as participants shared that their own expectations were not met when accessing services. HCCs and VHTs attributed this to the high expectations held by the participants, which, in turn, were not met by the facilities. The facilities, stakeholders shared, addressed cases well, but they perceived that participants' expectations were too high leading into their visits. A host community HCCs shared that sometimes "based on the nurse's assessment oftentimes their expectations are not met," which deterred them from accessing the services. A refugee community HCCs noted that the refugee population, in particular, has "very high expectations" and if these are not met, then they "report to not having received any service." Thus, because of their dissatisfaction with services, the participants did not seek further services from HCs.

Drivers

Individual and group coaching. Across all three areas, coaching was the most referenced factor



I have noticed that women belonging to AVSI groups obtain knowledge from their teachers (coaches) which helps them leave those negative attitudes of missing ANC.

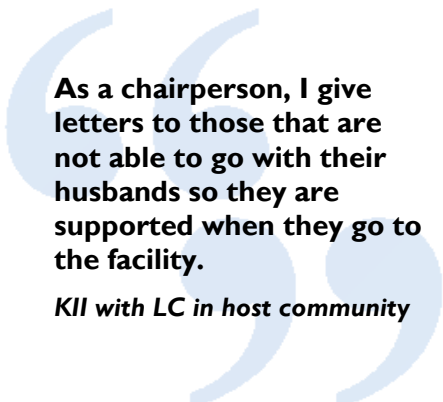
Kil with a Religious Leader in refugee community

reinforcing practices. To encourage ANC visits, coaches provided households with critical information about the importance of ANC visits to ensure healthy pregnancies and babies. The coaches also informed households about the number of visits they should attend and the importance of starting visits early (refer to quote). They followed up on their visits and provided reminders to encourage visit attendance. Beyond information sharing and follow up, coaches addressed intra-household dynamics, encouraging, and motivating husbands to accompany their wives to ANC visits, while conducting home visitations. Coaches also addressed some of the women's attitudes and fears regarding ANC, including helping them access maternity

clothes, as noted by the District Health Officer (DHO). Coaches followed a similar pattern around prenatal supplements, tying the access to prenatal supplements to the ANC visits. The majority of healthcare workers and the DHO shared that they had a reliable supply of prenatal supplements, and thus they only needed to ensure women attended so they could access supplements. After participants acquired prenatal supplements, coaches supported spouses to sit and plan together how to keep the prenatal supplement schedule and complete the full course. In terms of family MUAC, coaching also emerged as a driving factor for screening with different experiences for individual coaching and group coaching. Across all FGDs, participants noted that families more readily adopted the family MUAC approach after receiving coach support, follow up, and knowledge during trainings from coaches. Coach FGDs echoed this sentiment: they stated that training was helpful to empower participants to regularly track the nutrition status of their children, reducing cases of malnutrition and bridging VHT gaps. In the group coaching model, where household visits were not as common, the Activity introduced a "buddy system" to encourage peer-to-peer support for group coaching participants. An adult female in the refugee community celebrated the buddy system, which helped her seek help from another participant who could take the MUAC reading. On the other hand, some coaches, particularly coaches from the group model, felt the training alone was insufficient as some participants forgot certain aspects and needed reinforcing. Given that the group coaching model had more limited home visits and thus more limited interactions with other household members, they found it more difficult to reinforce the practice.

VHTs. In addition to coaches, participants and stakeholders shared that VHTs played a key role in encouraging ANC visits and taking prenatal supplements. VHTs already played a crucial role in referrals and follow up around malnutrition cases. Healthcare workers shared that VHTs organized door-to-door dialogues and home visits to encourage ANC visits and conduct sensitizations around taking supplements. VHTs shared that they were empowered to follow up with pregnant women while in the households and ensure that women were taking supplements. According to one VHT in Nkoma, VHTs in this community registered all pregnant women to send them regular reminders and follow ups as a part of the Ministry of Health's Integrated Community Case Management drive. While these reminders helped women remain on schedule with their supplements, participants reported that when VHTs did not follow up as per the

schedule because of VHT's schedules and workload, pregnant women would “fall off” or fail to take the prescribed full course of supplements. VHTs, thus, both helped women's compliance with prenatal supplement schedules and deterred it when they failed to provide continuous reminders.



As a chairperson, I give letters to those that are not able to go with their husbands so they are supported when they go to the facility.

KII with LC in host community

Support from leaders. Healthcare workers, religious leaders, VHTs, RWCs, and local council members all shared that support from local leaders, namely LCI or RWC, helped to mitigate husbands' lack of support to attend ANC visits referenced above. The local council leader produced a letter for pregnant women to take with them on their healthcare visit to excuse the absence of their husband and ensure that they are provided with the needed care, including prenatal supplements (refer to quote). Participants shared that this support was especially crucial for single mothers, pregnant women with absent husbands (due to work, travel, etc.), or pregnant women whose husbands simply refused to engage

in pregnancy-related concerns. However, despite this support, according to a refugee coach, the “biasness of the RWC” when producing this letter makes women feel shame from local leaders.

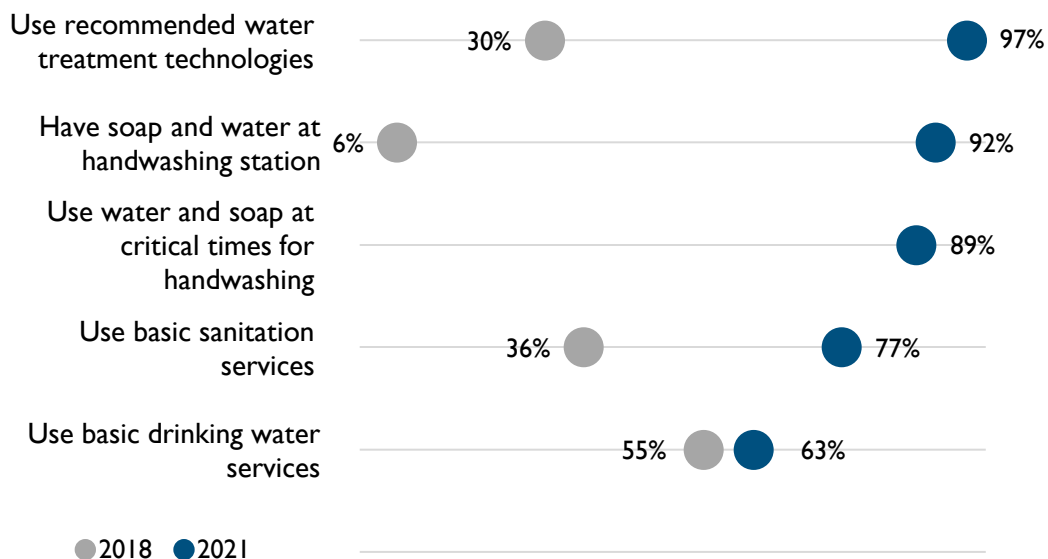
2.3 WASH Knowledge, Attitudes and Practices

In this section, we provide our findings related to shifts in KAP along key WASH practices promoted in cohort one activities, including handwashing, water treatment, water storage, hygiene, and sanitation. We first discuss cohort one participants' adoption or adherence to recommended practices, and then discuss changes in knowledge and attitudes relevant to those practices. Next, we identify and categorize key drivers and barriers that emerged as themes across qualitative and quantitative findings. Finally, we conclude this section with cohort participants' perceptions of access to water in their communities.

2.3.1 Household Level Change

Households set WASH goals pertaining to overall household cleanliness, handwashing, treating drinking water, and building and using latrines. Most FGD participants reported that they made progress on their WASH goals, with participants and KII stakeholders emphasizing notable KAP changes around handwashing, water treatment, and basic hygiene. At the same time, most participants and stakeholders agreed that households had looming challenges around sanitation (namely latrines), water access, and water storage.

Exhibit 29: WASH Performance Indicators – 2018 vs. 2021



Source: Coach Annual 2021 dataset, n = 4,913; Coach Bi-Annual 2021 dataset, n = 5,471; Coach Quarterly 2021 dataset, n = 5,019; 2018 values provided to AVSI by IPA

Handwashing: Positive Shifts in KAP

Handwashing Practices. Adult, youth, and adolescent refugee and host community participants agreed broadly that recommended handwashing practices improved. For example, youth male FGDs shared that the prior practice was to wash their hands in a basin filled with water, thereby mixing dirty and clean water. Meanwhile, adolescent females shared that before the Activity soap was not routinely available, and, thus, they did not wash hands frequently, regularly, or not always with soap. Participants and stakeholders both shared that common messaging from multiple sources (including the Activity, international and local organizations, and the government) around the importance of handwashing to protect against COVID-19

Nowadays, the handwashing stations are placed in strategic points that make it difficult to bypass them without washing.

FGD with adolescent males in host community

both served as a key factor in the improved practice of handwashing itself. HCCs and the Water Focal Point both expressed hope that this practice will continue beyond the pandemic.. The youth and adolescents articulated that they used running water and washed between their fingers. Adult males, youth, and adolescents further emphasized that there was a greater availability of tippy taps and handwashing stations in their community and within their compounds, facilitating their ability to follow recommended handwashing practices (refer to quote). Messaging around COVID-19 served as a motivator in influencing households to set up tippy taps according to participants in both the host and refugee communities. One group shared that handwashing facilities were usually placed at household entry gates and by latrines, whereas previously there was not always one present outside of latrines. Kills with elders, religious leaders, water use community members, and VHTs, reiterated the overall improved handwashing practice, sharing

that more people washed their hands at critical times when they had access to water and handwashing facilities.

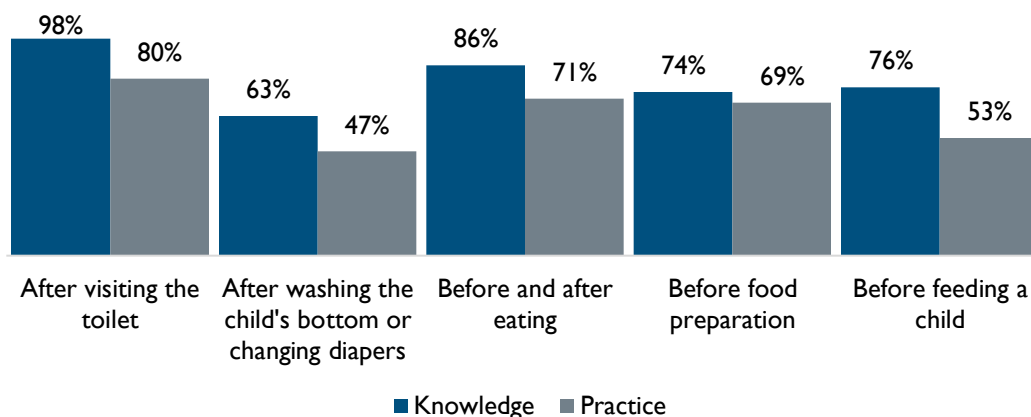
Handwashing Knowledge and Attitudes. Throughout the FGDs, participants articulated changed perceptions and correct knowledge about handwashing practices. Adolescent FGDs shared that prior to the Activity, they perceived that soap was reserved only for bathing one's whole body. Another adolescent conveyed his understanding of germs and how using soap kills germs. Adult female FGDs joined youth and adolescents in sharing their improved understanding of the critical times a person should wash his or her hands, reporting examples such as after visiting the latrines, before feeding a baby, and before preparing meals. Adult and youth FGDs, highlighted the knowledge they gained on constructing tippy taps, which, as seen above, has been crucial in supporting households to follow recommended handwashing practices. KIs largely agreed that better knowledge and attitudes around handwashing improved practices. One HCC shared that they observed fewer cases of diarrheal diseases linked to improved handwashing, a sentiment that was also echoed by a youth refugee (refer to quote).

The rate of children falling sick in the community reduced. The community used to report many cases of diarrhea before which was resulting from poor hygiene and sanitation.

FGD with youth males in refugee community

Exhibit 30 demonstrates that participants exhibited high knowledge levels of critical moments for handwashing according to the 2021 Coach Bi-Annual dataset.

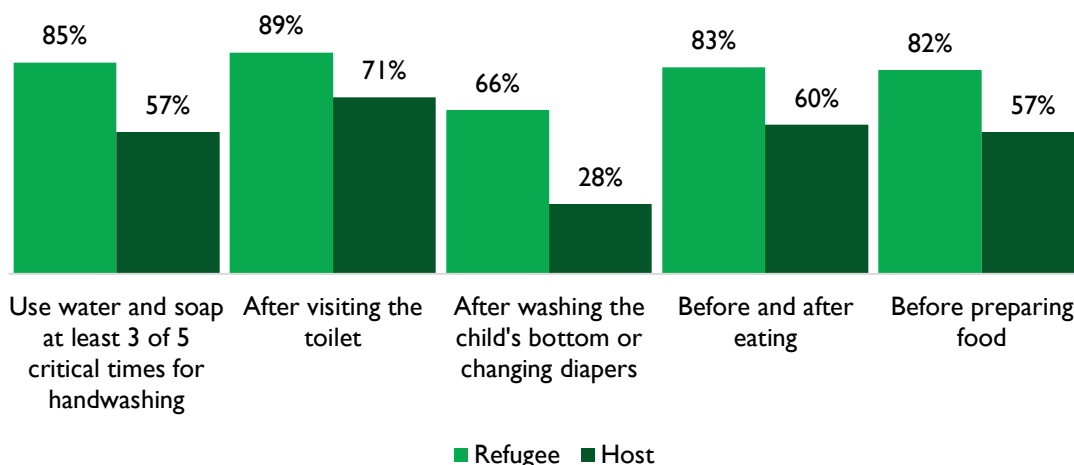
Exhibit 30: Handwashing Knowledge vs. Practice



Source: Coach Bi-Annual 2021 dataset, n = 877; Coach Quarterly 2021 dataset, n = 877; Note: Values restricted to primary survey respondent, respondents with children under 2 years old, and respondents who reported all household members use soap and water for handwashing.

Handwashing at critical moments presented distinct patterns by community type (Exhibit 31). The average number of handwashing moments among households in refugee communities (four critical moments) outpaced households in host communities (three critical moments). Consistent with insights from key informants, access to soap and water at handwashing stations also varied dramatically by community type: while 99% of surveyed refugee households reportedly had these handwashing inputs, only 79% of surveyed host households reported as such.

Exhibit 31: Critical Moments Respondents Reported Handwashing by Community Type



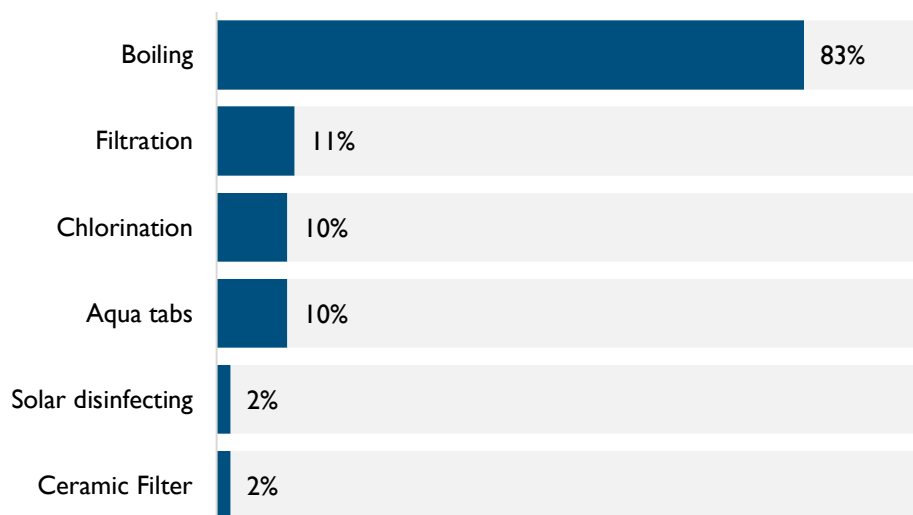
Source: *Coach Quarterly 2021 dataset*, $n = 5,470$; Note: Values restricted to respondents who reported all household members use soap and water for handwashing.

Apart from community type, the average number of handwashing moments varied little based on gender of the primary participant, gender of the household head, net household earnings, whether the respondent had any formal education, or whether the respondent was literate in a local language. While these bivariate relationships are not exhaustive, the lack of distinct patterns among them tentatively suggests that the primary barrier to adopting recommended handwashing practices is having the requisite resources for handwashing, such as access to water or the costs for jerry cans.

Water Treatment: Positive Shifts in KAP

Water Treatment Practices. The majority of participants reported widespread adoption of water treatment practices (98%); boiling water was the most frequently used method (Exhibit 32). Across FGDs, participants highlighted that this was an important change, noting that participants drank untreated water before the Activity. One adolescent female emphasized that “we never used to do [boil water].”

Exhibit 32: Household Water Treatment Methods



Source: Coach Bi-Annual 2021 dataset, n = 5,471

Most FGD participants discussed boiling water as their primary treatment practice, and only adult female FGD participants reported using chlorine water treatment tablets. VHTs distributed these tablets and there was limited availability, thus, women reported that they used them only when firewood was unavailable for boiling. The quantitative data echoed this finding: among households who reported using chlorination to treat water, the majority of respondents were female primary participants (91%) rather than male primary participants (8%). In refugee communities, stakeholders such as elders, health assistances, and VHTs noted a lack of access to water treatment tablets and filters, and costs were too high. Nevertheless, cohort one households seemed to be adhering to boiling water for water treatment, which is a recommended good and affordable practice.

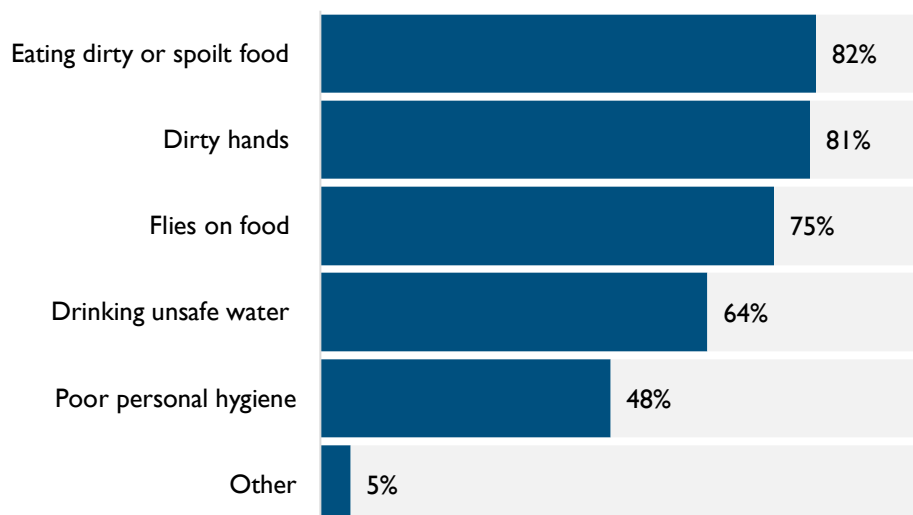
Water Treatment Knowledge and Attitudes. Along with improved practices, households experienced changes in their knowledge and attitudes about water treatment. Across FGDs, participants shared that they previously believed boiled water caused the flu or that boiled water tasted bad. Adult female FGD participants were able to demonstrate their knowledge by articulating up to three ways of treating water, including boiling, solar disinfection, and chlorine tablets. Meanwhile, youth FGD participants demonstrated their knowledge that untreated water carries germs and treating water kills germs (refer to quote). Stakeholders, including religious leaders, elders, VHTs, and individuals in KIs stated that many of the previous taboos and perceptions around drinking water had changed. For example, because the participants live in a water deprived area, they believed that any water provided by an informal vendor was safe to drink untreated. Stakeholders and participants also stated that the Activity's interventions had changed previous beliefs that dirty water causes malaria, boiled water does not quench thirst, and that boiled water itches the throat.

I would drink un-boiled water as is, but now, I cannot drink untreated water because I got knowledge that I should always boil or treat the water to kill germs.

FGD with youth males in refugee community

Although the importance of water treatment for disease prevention is emphasized in the qualitative data—particularly among youth respondents—the quantitative data indicated that roughly a third of respondents²⁵ from the 2021 Coach Bi-Annual dataset did not recognize unsafe drinking water as a cause of diarrhea. In fact, slightly more adult respondents (65%) cited unsafe drinking water than youth respondents (57%). Likewise, when asked about methods to prevent diarrhea, a similar share of respondents (64%) cited treating drinking water as a method.

Exhibit 33: WASH Knowledge: Causes of Diarrhea



Source: Coach Bi-Annual 2021 dataset, n = 877; Note: Values restricted to primary survey respondent and respondents with children under 2 years old.

Hygiene: Positive Shifts in KAP

Hygiene Practices. Many participants did not discuss how hygiene practices changed because of the Activity, but those who did discussed improvements in overall cleanliness and food safety. An adult female in the host community shared that “I have learnt that I need to sweep my compound

We now clean our compounds, wash our clothes and clean around the house following coaching sessions on the importance of good hygiene.

FGD with adult females in refugee community

... as well as cleaning my house.” Participants not only made improvements in the physical tidiness and cleanliness of their homes, but also began to wash clothes more frequently and properly. With respect to food safety, participants improved their dining practices and ate with cleaner utensils to prevent illness. An adult male in the refugee community shared his experience of learning the importance of using a drying rack, which “helped the households ... [to] clean utensils to avoid many diseases. Participants perceived that this practice improved overall health. Youth males and females in the

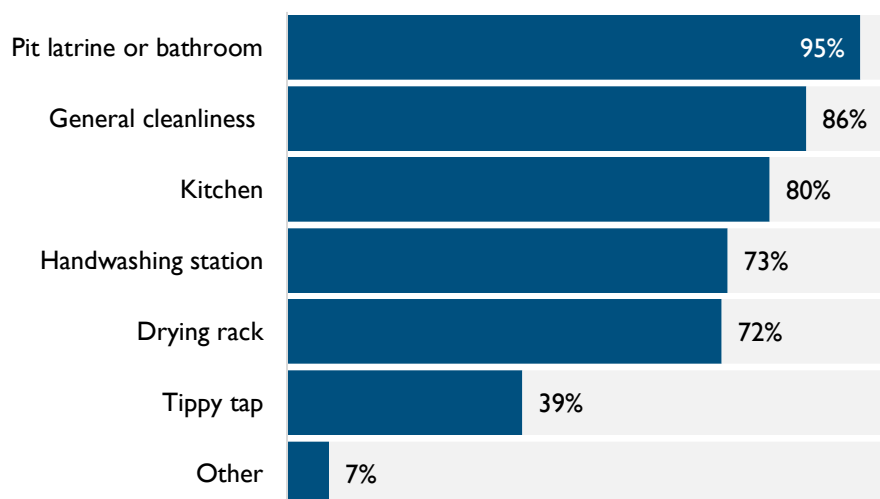
refugee community shared a similar experience in eating with cleaner utensils. Contrary to the overall positive change, a WUC member in the refugee community shared that girls do not

²⁵ WASH knowledge questions were exclusively administered to male and female respondents who have children less than two years old.

regularly wash their underwear in the open, largely due to gendered taboos, leading to yeast infections that worsen their personal hygiene overall.

Hygiene Knowledge and Attitudes. Participants’ knowledge of the importance of cleaning increased as demonstrated by improvements in their practices. Exhibit 34 highlights participants’ knowledge about the components of a clean home. Participants’ attitudes shifted to become more accepting of improving their personal and household-level hygiene as well. An adult male in the host community shared that “women had to prepare very clean environments expecting a visitor. They have later realized there is no harm in leaving in a clean environment even when not expecting” any guests.

Exhibit 34: WASH Knowledge: Components of a Good Home



Source: Coach Bi-Annual 2021 dataset, n = 877; Note: Values restricted to primary survey respondent and respondents with children under 2 years old. The responses for the other category consisted of various components, including garbage pits, dust bins, and having animals outside the home.

Water Storage: Delayed Progress in Shifting KAP

Water Storage Practices. Health assistants, WUCs, and RWCs across host and refugee communities described water storage practices as not having changed significantly as a result of the Activity. They stated that community members used the same water storage containers and jerrycans to collect water and store water for drinking, cooking, and other uses. Further, they emphasized this was due to a lack of availability of water storage materials in the communities, including buckets and jerrycans. Participant FGDs highlighted this same sentiment on a lack of materials. Several stakeholders in the refugee community explained that different NGOs previously had provided community members with jerrycans for safe water storage, but that NGOs no longer did so. As a result, households made slower progress on safe water storage practices.

Some households have very few utensils which makes it hard to store water effectively, since the same items are used for many things – fetching water, keeping water for drinking, cooking, others.

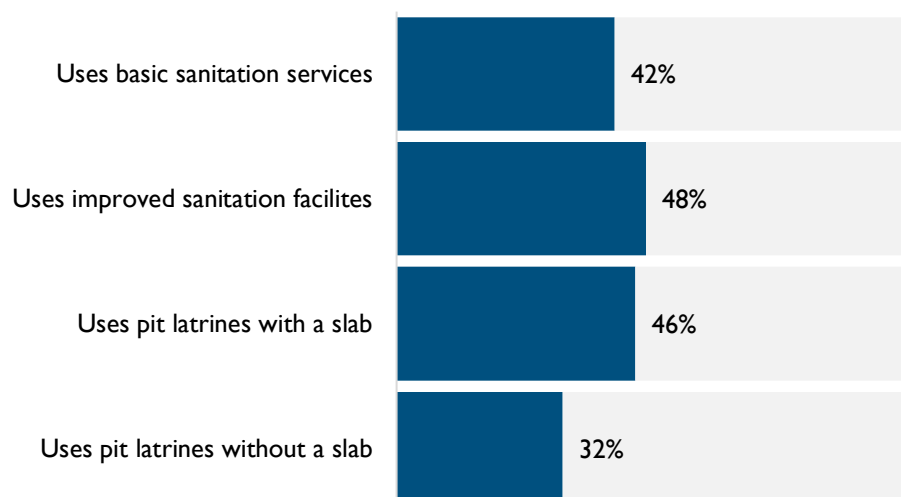
KII with Religious Leader in Refugee Community

Water Storage Knowledge and Attitudes. As described in the sections above, participants across the FGDs articulated the importance of water treatment and enumerated ways to do so. However, participants in FGDs made few mentions of their knowledge and attitudes surrounding water storage. From those that did mention it, they conveyed the importance of proper water storage but relayed the challenge posed by the limited supply of materials, particularly jerrycans.

Sanitation: Delayed Progress in Shifting KAP

Sanitation Practices. According to responses to the 2021 Coach Bi-Annual Survey in Exhibit 35, household adoption of improved sanitation facilities remained comparatively low. Of the two most common sanitation facilities that households reported having, pit latrines with and without a slab, only pit latrines with slabs are considered improved sanitation facilities.²⁶

Exhibit 32: Household Use of Sanitation Facilities



Source: Coach Bi-Annual 2021 dataset, n = 5,471

Despite sanitation trends in the quantitative data, according to participants and KII stakeholders, the practice of using a latrine improved. A health assistant in the host community described a decrease in open defecation. Likewise, the quantitative data indicated that open defecation is highly uncommon: less than 1% of households reported they had no sanitation facility and engaged in open defecation. To this end, widespread use of basic sanitation services and other recommended sanitation practices was constrained by a lack of materials to construct latrines, and poorly constructed or maintained latrines. Participants in FGDs reported specific examples of these challenges, including (1) high cost of poles, (2) high cost of iron sheets, (3) small household plots in refugee settlements, (4) NGOs stopped providing latrine materials, and (5) the Office of the Prime Minister (OPM) disallows tree cutting for latrine construction. Water user committee members, VHTs, and RWCs echoed participants' statements about the

²⁶ Improved sanitation facilities are defined according to the standards cited in the Millennium Development Goals (MDGs) and include flush or pour/flush facilities connected to a piped sewer system, septic system, or pit latrine; pit latrines with a slab; composting toilets; and ventilated improved pit latrines. Apart from pit latrines with a slab, less than 5% of surveyed households reportedly had any of the other kinds of improved sanitation facilities.

challenges of obtaining materials, sharing that there was a lack of poles, slabs, and iron sheets needed to build latrines.

In addition to supply-side constraints impeding the construction and use of improved sanitation facilities, quantitative data indicated distinct patterns among households with improved sanitation facilities. First and foremost, households with improved sanitation facilities were concentrated predominantly in refugee communities (82%) rather than host communities (18%). Among households in host communities with improved sanitation facilities, most were female-headed households (58%), had access to at least one formal credit source (100%), had higher net earnings, owned household durables (73%), and had a primary participant who is literate in local languages (56%). For further discussion on drivers and barriers for WASH practices, refer to section 2.3.2.

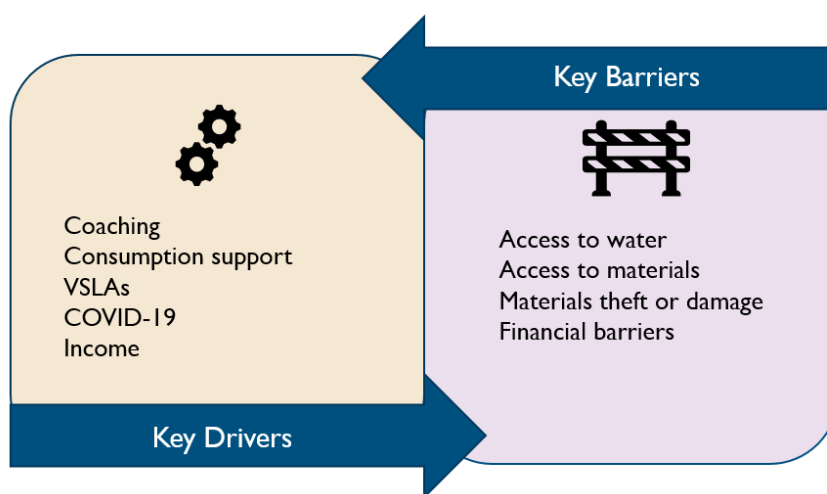
Sanitation Knowledge and Attitudes. Despite some of the previously mentioned challenges associated with the use of improved sanitation facilities, both adult and youth FGDs shared that they increased their knowledge on latrine construction and maintenance. They further demonstrated their knowledge of the steps needed to construct a latrine and, if they had sufficient resources to purchase materials and hire services, the steps to take to construct a latrine. However, prevailing attitudes around proper sharing of latrines, as explained by adult males (refer to quote) and echoed by adult females, may have constrained more consistent uptake in the practice in households with one latrine and multiple families.

A father-in-law is not supposed to share a pit latrine with his daughter-in-law. Since the start of this project this has not really changed but our young men are encouraged to build own houses before marrying.

FGD with adult males in host community

2.3.2 Drivers and Barriers to WASH KAP Changes

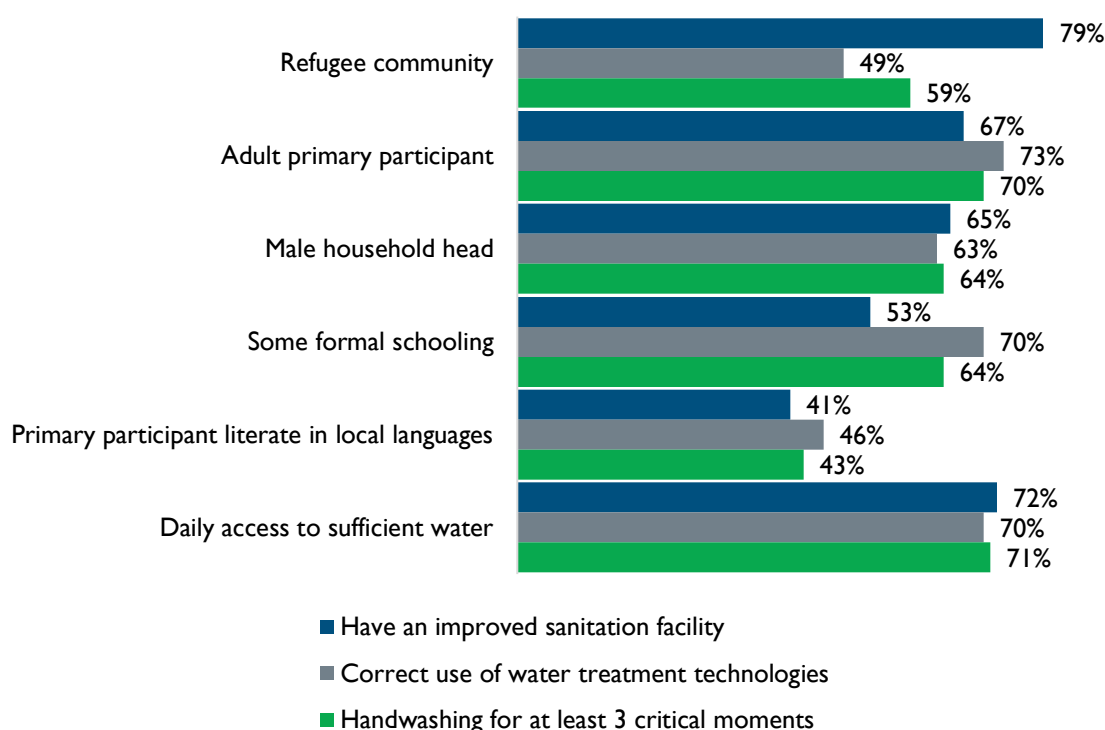
Exhibit 33: Drivers and Barriers to WASH KAP Changes



Several key barriers and drivers emerged as themes across FGDs, KIs, and the quantitative data. These are summarized in Exhibit 33 above and described below. In addition, the assessment found differences in household characteristics that seemingly drove adoption of WASH practices.

Among respondents to the household survey, adoption of recommended WASH practices—specifically, correct use of water treatment technology, handwashing for at least three critical moments, and use of improved sanitation facilities—was higher among households 1) in refugee communities, 2) with adult primary participants, 3) with primary participants who were *not* literate in local languages,²⁷ 4) with primary participants who received some formal education,²⁸ and 5) had daily access to sufficient water for each household member (Exhibit 34).

Exhibit 34: Adoption of Recommended WASH Practices by Household Characteristics



Source: Coach Bi-Annual 2021 dataset, n = 768; Household Survey, n = 768; Note: Responses from the Coach Bi-Annual 2021 dataset restricted to households that also responded to the Household Survey.

Drivers

The most commonly reported drivers of the observed shifts in WASH KAP were the Activity and contextual factors, namely coaching and home visits, consumption support, VSLAs, and COVID-19.

²⁷ Adoption of recommended WASH treatment technologies by literacy in local languages is skewed by refugee households whose primary participant in the Activity were more commonly *not* literate in local languages (63%) relative to their host community counterparts (45%).

²⁸ In the 2021 Coach Bi-Annual dataset, respondents reported the highest level of education they received. Some formal schooling refers to participants who received any level of primary, secondary, tertiary, or technical education. Tertiary and technical education were highly uncommon among respondents, representing less than 1% of the sampled population.

Coaching and home visits. Participants credited coaching with their increased knowledge and awareness around a multitude of WASH topics, including different water treatment methods, handwashing, and sanitation and hygiene. This was echoed by Water Use Committee members, VHTs, RWCs, local council leaders, and the District Water Focal Point who noted that participants learned the importance of and put into practice using treated water to drink, clean, and wash. Similarly, a refugee elder attributed the education received from coaching as the reason for an increase in tippy taps among households. Across the FGDs, participants emphasized that the fact a coach would come to their household motivated them to keep their household clean and ensure they were following WASH practices to not disappoint their coach (refer to quote). Participants in group coaching emphasized the importance of attending sessions with their husband, where their husband was able to learn about breastfeeding and encourage them to continue to support them at home. These reflections point towards the value of coaching as a household activity, including visits, to support internalizing of messages and sustained change in practice.

Before, we couldn't think of having a toilet, cleaning the compound, or sanitation but with coaching, we knew that the coach would come and ask about the toilet or cleanliness hence we were prompted to practice what was taught so as to not to disappoint them as they did home visits.

FGD with adult females in refugee community

By coaching model, 2021 WASH KPIs varied by small margins and demonstrate mixed patterns. While use of basic sanitation services was slightly higher among households that received group coaching (i.e., households in treatment arm two) (77%) relative to those that received individual coaching (i.e., treatment arms one and three) (76%), the magnitude of this difference is not statistically meaningful. Likewise, household use of recommended water treatment technologies varied by one percentage point across treatment arms, which was higher for households in treatment arms one and two (98%) relative to treatment arm three (97%). In addition, adoption of basic water services was higher among households in treatment arms one (66%) and three (62%) relative to those in treatment arm two (61%). Given the small differences by treatment arm among this sub-set of WASH indicators and the contextual constraints related to adoption of WASH services, the role coaching models played in translating increased knowledge and awareness of WASH topics into observable changes in WASH practices (e.g., use of basic water services) is inconclusive.

Consumption support. While participants overall tended to report using consumption support towards nutrition goals, many also shared that it helped them make progress towards WASH goals. They described using the funds to purchase soap, pay water bills, buy water storage containers, buy clothes, and buy plates. A host community sub county health assistant shared that consumption support also enabled people to construct latrines.

VSLAs. Participants reported using VSLA savings to purchase WASH equipment, such as soap, jerricans, and safe water, as well as save money to construct latrines. A host community WUC member added that with the VSLA, they collectively “accumulated savings to afford the installation of safe water/tap” for their group. The quantitative data showed that a slightly larger share of households who adopted recommended WASH practices, also had savings in VSLAs. The District Water Focal Point noted participants used the savings made from the groups to finance latrine construction and noted that the social aspect of the VSLA contributed to promoting the usage of latrines throughout the community. Host community CWCs, WUCs, and

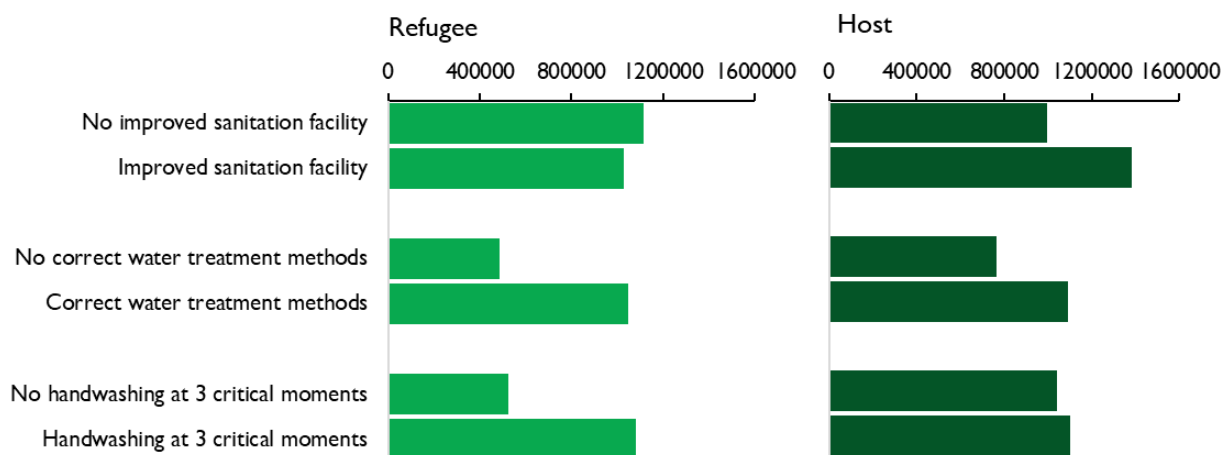
a CDO reiterated this statement, sharing that the impact of the VSLA rippled far beyond that of just household finances. Members were more likely to show up to group meetings bathed and in clean clothes, with one host community WUC noting that the VSLA “has instilled in them a sense of self-care.”

COVID-19. Participants and stakeholders reported that NGO’s collective strong public health messaging about COVID-19, combined with different organizations distributing supplies, contributed to increased handwashing and hygiene practices. Stakeholders, such as HCCs, elders, and the District Water Focal Point, observed that handwashing improved throughout the rise of the COVID-19 pandemic, and hoped that this improvement would be sustained. One HCC observed that improved handwashing resulted in a reduction in cases of diarrheal diseases. While COVID-19 presented barriers to improvements in nutrition, it reinforced certain WASH practices and contributed to shifts in KAP, most frequently reported around handwashing.

Income. On average, net household earnings across livelihoods, which serves as a proxy for household income, was higher among host households who adopted recommended WASH practices, namely using an improved sanitation facility, correctly treating water, and regularly handwashing²⁹ at critical moments (Exhibit 35). This potentially indicates that households with higher incomes were more inclined to adopt these practices relative to households with lower incomes. We found that among host households that adopted handwashing practices, earnings did not vary significantly; this potentially pointed to the affordability of adopting that practice, which is comparatively low cost compared to improved sanitation facilities, which require a more substantial monetary investment. With boiling as the most common water treatment method among respondents, affordability might not necessarily explain the earnings gap among households that followed recommended water treatment methods in host communities.

Exhibit 35: Net Earnings across Livelihoods by Community Type and WASH Practices

²⁹ The handwashing performance indicator reflects handwashing reported for at least three critical moments. This threshold was set at the Activity’s inception.



Source: Coach Bi-Annual 2021 dataset, $n = 768$; Household Survey, $n = 768$; Note: Responses from the Coach Bi-Annual 2021 dataset restricted to households that also responded to the Household Survey.

In analyzing differences in household earnings by whether the households followed recommended WASH practices, the team detected similar patterns among refugee households for water treatment and handwashing practices. However, the average earnings gap among refugee households was less pronounced relative to host households. This potentially points to the role of NGOs in establishing these facilities in refugee communities.

The question of affordability of improved sanitation facilities was particularly poignant among host community households, not only as it pertained to their net earnings but also to their ability to access formal credit, which was strongly associated with household ownership of improved sanitation facilities. Across community types, use of correct water treatment methods was also associated with access to formal or informal credit sources. This suggests credit-constrained households might experience greater barriers to following recommended WASH practices, at least as pertains to those practices which require inputs such as sanitation facilities and water treatment technologies.

In addition to net earnings and access to credit, households across community types were also more likely to adopt the recommended WASH practices if they were engaged in non-farm economic activities. While this association in isolation cannot fully explain or account for differences in WASH practices, it perhaps suggests that households that engaged in more resilient economic activities that are not susceptible to commonly reported economic shocks (e.g., drought, crop disease) had a greater ability to adopt recommended WASH practices.

Barriers

Participants and stakeholders cited the following barriers that impeded their adoption of WASH practices: lack of access to water, lack of access to materials, materials theft or damage, and financial barriers.

Access to water. A consistent theme among stakeholders was their lack of access to water, which impeded their ability to adhere to and adopt WASH practices. Elders, HCs, assistants, VHTs, and NGOs in the host and refugee communities, mentioned scarcity of water and prioritizing available water for other needs, such as cooking or chores, over handwashing.

Greater detail around this structural barrier to WASH practices is further discussed in section 2.3.3.

Access to materials. Participants commonly cited access to materials as a barrier to following recommended handwashing, water treatment and storage, and sanitation practices. Participants in FGDs highlighted they lacked access to the materials listed in Exhibit 36 and which WASH KAP themes they affected.

Exhibit 36. Lack of Access to WASH Materials, by Practice

Handwashing	▪ Water storage containers (jerry cans) ▪ Tippy tap materials ▪ Soap 
Water Storage	▪ Water storage containers (jerry cans) 
Water Treatment	▪ Water storage containers (jerry cans) ▪ Lack of enough firewood to boil water ▪ Treatment supplies (chlorine tablets, etc.) 
Hygiene	▪ Water storage containers (jerry cans) 
Latrines	▪ Poles, slats, and iron sheets ▪ Lack wood for building 

Water storage containers emerged as the challenge that affects most of the WASH practices. Health assistants, WUCs, and RWCs, in the refugee community, along with NGOs mentioned that NGOs, such as Lutheran World Federation (LWF), previously provided jerrycans to community members for safe water storage but discontinued this practice, and as a result more individuals got sick. The low availability of jerricans compounded other challenges, such as being able to harvest water, which was a way to mitigate lack of access water, according to a health assistant in the host community.

Materials theft or damage. Adult and youth females from the host communities reported that theft of jerricans from tippy taps was an ongoing challenge, sharing that people tired of replacing materials, presenting risk to the improvements observed in handwashing practices. This was

On tip taps with jerricans, children take them away for playing hence people get bored and tired of constructing tip taps every day.

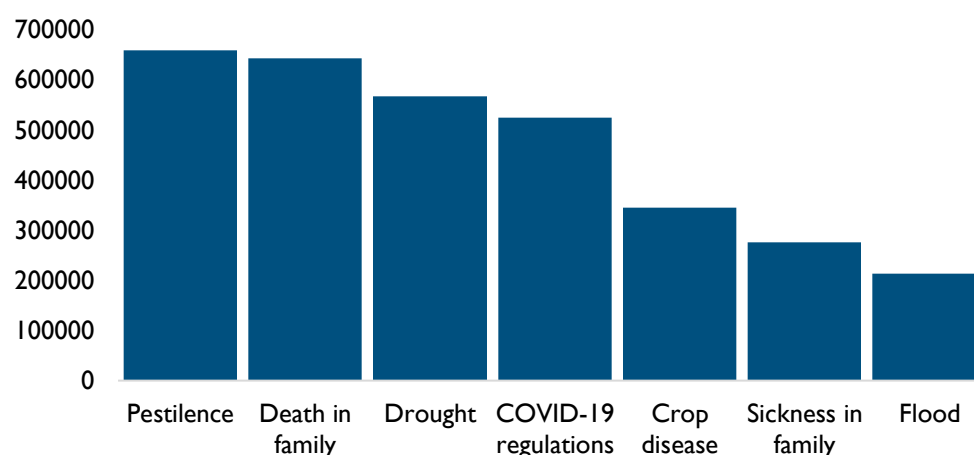
FGD with coaches in host community

especially the case given the already low availability of jerricans. Water user committee members, RWCs, and HCCs added that improvements were undermined by the challenge of damage to existing tippy taps, due to children playing with them or removing them, or damage due to termites. With respect to latrines, some stakeholders discussed that poor construction and damage impeded latrine use and access. For example, elders, HCs, assistants, and VHTs in the host and refugee

communities, said that poor construction made people less likely to use latrines. This could include latrines breaking, having a pit but no walls, overflowing or full latrines, or damage due to storms.

Financial barriers. Financial barriers were an underlying challenge to mitigating the barriers mentioned above and making progress on WASH goals. In addition, COVID-19 exacerbated existing financial issues, further constraining households. As described by youth males in refugee communities, regulations intended to mitigate the spread of COVID-19 limited cashflow, making it difficult to have enough money to purchase the materials necessary to achieve their goals. The quantitative data mirrored this finding: 52% of households who responded to the household survey reported facing cash shortages due to COVID-19 regulations. Among the different kinds of economic shocks households reportedly faced, COVID-19 regulations were costly, especially considering that the average net annual household earnings across livelihoods was 1,024,953 UGX (Exhibit 37³⁰).

Exhibit 37: Household Income Loss (UGX) in the Past 12 Months by Shock Type



Source: Household Survey, n = 718

³⁰ Exhibit 21 disaggregates household income loss by shock type as well as by food security status. In the context of adoption of recommended WASH practices, Exhibit 36 underscores the substantial costs health-related shocks—in addition to the previously noted agricultural shocks—imposed on households.

Participants and stakeholders shared that the costs of constructing boreholes for latrines, water treatment materials, and water were prohibitively high, which explained much of the lag in progress on these key WASH themes described above. In terms of the cost of water, in the host community, some mentioned charges of 100-200 UGX to fill each jerrycan, which not all residents could afford. One local council member said that while fees were higher for privately-owned water points (150-200 UGX), at publicly owned water points, there were lower fees (50 UGX), but much longer lines. Others, such as the District Water Focal Point, WUC members, and local council members noted that some villages have tapped water, but that installation and other costs could be prohibitive.

2.3.3 Water Supply and Access

Nearly all participants highlighted they were not satisfied with the water supply in their community. The water focal point and other stakeholders through KIs reported that water supply was an ongoing challenge in both refugee and host communities. A consistent theme across stakeholders was that there were enough boreholes in the community, but they were not functional, or that there were not enough boreholes for everyone, resulting in long lines or increased travel time.

There is a serious problem of lack of enough water, we only have 2 boreholes. So, to get water, one has to wake up at 3AM to join the line.

FDG with youth males in refugee community

The lack of functional boreholes is problematic, as public taps and boreholes are the most common water source for participants (70%), followed by protected springs or wells (23%), piped drinking water (4%), and other water sources³¹ (2%). By community type, nearly all refugee community households (94%) sourced their water from public taps or boreholes whereas host community households had more diversified water sources, primarily public taps, or boreholes (48%) or protected springs or wells (41%).

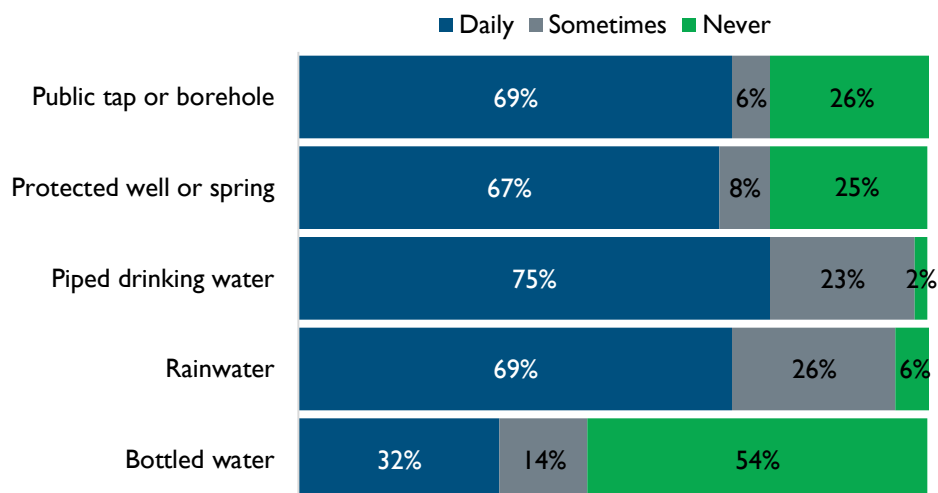
Adult and youth FGDs emphasized how limited their access to water was, as explained by one male youth from the refugee community (refer to quote). If a functional borehole or clean water alternative did not exist, participants used water from a swamp or pond. To further emphasize the water scarcity, health and sub county health assistants in the refugee community described having water trucked-in for use at the HCs. Reinforcing the qualitative findings, the quantitative data demonstrated that nearly a third of households (32%) could not access a sufficient daily water supply³² for each member of their household. However, despite the strong findings demonstrating a lack of access to water, according to the 2021 Coach Bi-Annual Survey, nearly all households reported using improved water services³³ (99%). Sufficient daily access was particularly challenging among the two most common water sources, public taps or boreholes and protected wells or springs, as demonstrated in Exhibit 38.

³¹ Other water sources included rainwater and bottled water.

³² Sufficient water supply is defined as 20 liters of water for each household member.

³³ Improved water services are defined as improved sources or delivery points that by nature of their construction or through active intervention are protected from outside contamination, particularly from outside contamination with fecal matter. This includes piped drinking water, public taps or boreholes, protected wells or springs, rainwater, and bottled water.

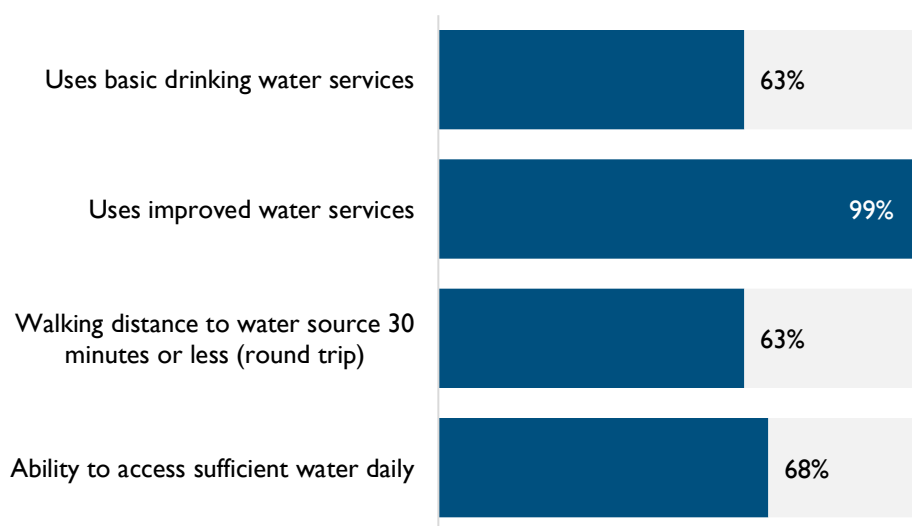
Exhibit 38: Household Ability to Access Sufficient Water Supply by Water Source



Source: Coach Bi-Annual 2021 dataset, n = 5,471

Despite the near universal use of improved water services, only two-thirds of these households have access to basic drinking water services as defined by the Activity's performance indicator, with long water collection times and/or inadequate water supply undermining consistent access and use of improved sources.

Exhibit 39: Household Water Access Indicators



Source: Coach Bi-Annual 2021 dataset, n = 5,471

Access to water is crucial for communities to adopt and sustain recommended WASH practices, but local water supply governance shifted, and with it, challenges arose impeding host and refugee communities' abilities to access water consistently. For example, in the host community, elders, CWCs, and health assistants described a lack of local government leadership prioritizing, investing in, and maintaining water access. In the refugee community, respondents, including health

assistants and water user committee members, shared that the LWF had provided good services, training, and parts to maintain water points, while the new management with National Water and Sewage Company (NWSC), has led to more broken boreholes and decreased water access. Some host community stakeholders noted limited funds available to water user committees and that borehole repairs took a long time

CHAPTER 3. CONCLUSIONS

The following sections summarize the assessment's conclusions to the findings discussed in Chapter 2. They are organized by the research questions set out to guide the data collection and analysis.

3.1 Nutrition Knowledge, Attitudes and Practices

To what extent did cohort one Activity components improve nutrition outcomes by shifting KAP among refugee and host populations?

Across the nutrition outcomes, the **Activity saw positive shifts in KAP around food production and consumption, meal frequency, nutrition during pregnancy, infant and child feeding, as well as dietary diversity but to a lesser extent.** Overall, participants reported consuming meals more frequently and ate a wider variety of foods, largely sourced through their own production, and complemented by purchasing food. While the dietary diversity of children aged 6 to 23 months, as well as that of women of reproductive of age, increased noticeably, over a quarter of surveyed cohort one households still did not consume diverse diets as measured by the FCS, which could contribute to potential micronutrient deficiency among these children, women of reproductive age, and potentially other household members. Despite this, households largely perceived they were consuming diverse foods aligned with proper nutrition for children and women of reproductive age.

There are noticeable differences among refugee and host communities related to nutrition KAP. In comparison to host households, refugee households had lower FCS, which resulted from their less frequent consumption of nutrient-dense food groups, namely milk and pulses. As a share of their monthly expenditures, host community households had lower average food expenditures than refugee communities. Given the large budget share refugee households allocated to food expenditures, it seems that **adequately diverse diets remain unaffordable for this segment of participants.** This could potentially explain why most women of reproductive age were able to eat at least one nutrient-rich crop or animal product, yet their overall diet composition did not meet minimally diverse diet standards. Despite challenges related to food affordability, most refugees perceived that their households were food secure and that they consumed the right frequency and diversity of foods for proper nutrition.

Which activities are associated with improved nutrition outcomes?

The Activity component most heavily associated with perceived improvements in nutrition outcomes according to participants was **coaching.** In terms of improving nutrition practices, coaches taught participants the importance of joint spouse decision-making, leading to a more stable supply of food in the household, as well as how to best grow and store enough food for household consumption. In terms of knowledge and attitudes, participants of both communities and of all ages and genders learned the importance of eating a balanced and varied diet.

Consumption support, the asset transfer, and the VSLA also supported improved nutrition outcomes. With an increased household disposable income coming from the cash transfers, savings, and IGAs, participants were able to spend more on purchasing food for their household, given that purchased food was a primary food source.

What were drivers of adoption of and adherence to recommended practices?

Engagement of full household and follow up by coaches ensured that participants were progressing towards their nutrition goals and reinforced the adoption of recommended practices. The engagement of the broader household, whether through individual or group coaching, was highlighted as a key driver to adopt and adhere to the recommended practices. Home visits by coaches, in particular, translated into greater overall household engagement with the Activity, including by spouses, youth, and adolescents, and increased motivation to reach household nutrition goals.

Increased disposable household income greatly improved food security status. More money increased a household's ability to purchase a greater amount and wider variety of food for the household, improving overall health. Households with economic resources tended to be more food secure, leaving them less vulnerable to food price volatility, and so they were able to consistently consume nutritious diets. However, livelihood diversification did not appear to translate into improved FCS.

When males chose to be involved and support their households in improving nutrition KAP, it served as a driver of improved nutrition practices. Males' improved knowledge towards women's nutrition during pregnancy and infant feeding led to improved nutrition for women of reproductive age and more frequent breastfeeding when they elected to put their knowledge into practice. However, when males chose not to be involved in working towards improved practices, it served equally as a barrier.

What were barriers to adoption of and adherence to recommended nutrition practices?

Weather served as the most commonly reported barrier to following recommended nutrition practices. Given that most participant households relied on rainfed irrigation for agricultural activities, including their own food production, volatile weather, and the effects of limited rainfall on crop growth were a key barrier to their food security.

Other barriers to adopting and adhering to recommended nutrition practices included COVID-19 and related restrictions imposed to limit the spread of the disease. The pandemic resulted in reduced incomes and market access to purchase diverse foods. Other barriers included limited **access to land for farming**, and **household emergencies** diverting resources to other needs. **Household conflicts** between spouses was also reported to stall decision-making around food consumption and substance abuse among men continued to be reported as a challenge.

Finally, **persisting beliefs around gender roles and nutrition during pregnancy** presented barriers to adhering to nutrition practices. It appears that women continue to take on the bulk share of nutrition-related practices for their households, despite improvements in joint decision-making. Meanwhile, for mothers, existing cultural beliefs that certain foods should not be consumed prevented them from consuming proper diets during pregnancy and while breastfeeding.

3.2 Status of Health Service Provision

To what extent did cohort one Activity components improve access to health service provision by shifting KAP among refugee and host populations?

The majority of participants are following recommended guidance for pregnant women accessing ANC visits. The majority of participants appeared to be following the recommended cohort one number of four ANC visits, with only a few following the updated practice of eight ANC visits. These generally occurred during the second and third trimesters of a woman's pregnancy; however, challenges remained when the Activity encouraged women to attend the visits during their first trimester of pregnancy. During ANC visits, **prenatal supplements were easily accessible and provided free to pregnant women.** However, some women still had trouble completing the full prescribed course of the supplements.

The entire household was not engaged in adopting family MUAC as a practice. Female adults were the main screeners of their children. Youth and adolescents were increasingly less likely to have knowledge in family MUAC, and adult males had limited involvement in the approach due to their traditional view that it is the women's role to screen. **Referrals were utilized in frequently.** Given relatively low levels of malnutrition, few participants were referred for services. So long as the family MUAC screening continues, cases are caught before they need to be referred and participants are accessing services on their own without referrals.

Which activities are associated with improved access to health services?

As with all nutrition and WASH outcomes, **coaching was the Activity component most heavily associated with improvements in the status of health service provision.**

Adult females credited coaches with teaching them how to implement the family MUAC screenings, and on occasion supporting referral follow up as well.

What were drivers of adoption of and adherence to recommended practices?

The follow up of VHTs drove participants to adhere to recommendations made to them at ANC visits and after being referred to a HC for malnutrition services. After referrals, VHTs stayed in close contact with coaches and the HCs to ensure participants implemented the recommendations and continued their treatment. **Support from elders** was also reported to significantly affect pregnant women's confidence and ability to access ANC visit, despite the barrier around the mandated spousal accompaniment and potential stigma.

What were barriers to adoption of and adherence to recommended practices?

The distance and cost to travel to ANC visits and health centers for referrals served as a barrier preventing participants from accessing these services. The distance and cost of travel combined with the number of required ANC visits can be prohibitive for some women.

A lack of husband support also deterred female participants from accessing these services. In some cases, husbands could deny women the funds they needed to travel. Husbands also were not engaged in the practice of family MUAC, due to perceived gender roles. The policy requiring that women be accompanied by their husbands to ANC was a considerable barrier. Women depended on their husbands' willingness to accompany them to ANC. If a husband declined to attend, the woman often did not attend the ANC based on concerns about **stigma** faced from

health workers. This fear of stigma arose as a barrier for particular groups of pregnant women, namely teen mothers, older mothers, and women with small birth spacing.

3.3 WASH Knowledge, Attitudes and Practices

To what extent did cohort one Activity components improve WASH outcomes by shifting KAP among refugee and host populations?

Across the WASH outcomes, the **Activity saw positive shifts in KAP around handwashing practices, water treatment, and hygiene**. However, the Activity saw more delayed progress around shifting KAP related to water storage and sanitation practices, particularly latrines. This appeared to be largely due to inconsistent and insufficient access to water, including distances to water sources, as well as access to necessary materials.

Which activities are associated with improved WASH outcomes?

Coaching, including home visits, was credited by participants with improving participants' WASH outcomes. The education received from coaching, along with the home visits that kept participants motivated, both served to encourage adoption of recommended WASH practices. These visits were frequently referenced as a motivating factor to ensure adherence to practices and to demonstrate this to the coach during the visit.

Consumption support and the VSLAs both provided participants with access to resources with which to purchase WASH supplies, such as soap, and pay water bills. Some VSLA groups also used their accumulated savings to install safe water taps.

What were drivers of adoption of and adherence to recommended WASH practices?

COVID-19 accelerated the adoption of WASH practices, particularly handwashing. Due to the pandemic, the Activity engaged in common messaging with other international organizations to encourage safe WASH practices. As a result of this messaging, and participants' fear of contracting the virus, Activity participants washed their hands more frequently.

Households with higher incomes appeared to be more likely to adopt and adhere to recommended WASH practices. This points to the barrier participants faced accessing the materials needed to adhere to WASH practices, largely due to affordability.

What were barriers to adoption of and adherence to recommended WASH practices?

An overall lack of materials prevented participants from engaging in proper water storage and sanitation practices. This included buckets and jerrycans, which are essential to adhere to most WASH practices, including handwashing, storage, and treatment, but which often were stolen. In terms of sanitation practices, participants reported a lack of available materials required to construct latrines, as well as a lack of ability to pay for materials and construction labor, especially given that international NGOs no longer provided these materials to the communities.

The lack of access to water due to **lack of boreholes in the communities and long-distance travel required to access water** served as a crucial systemic barrier to adhering to recommended WASH practices.

CHAPTER 4. RECOMMENDATIONS

In the recommendations chapter, we respond to the research question: *What are evidence-based recommendations to improve nutrition and WASH outcomes through changes in cohort two Activity design and implementation?* Throughout the report, the assessment team identified and discussed the nutrition and WASH outcomes that demonstrated positive shifts in KAP and those outcomes that exhibited slower progress during cohort one, including barriers that either hindered that progress or present risks to progress for cohort two Activities. The majority of the recommendations across each of the three major sections focus on those outcomes that demonstrated slower progress among cohort one in shifting KAP and key barriers that emerged. For those activities where cohort one showed positive shifts in KAP, the assessment team recommends replicating cohort one components in the design of cohort two.

4.1 Nutrition Knowledge, Attitudes and Practices

The assessment team provides the following recommendations for cohort two to address the primary challenge experienced by cohort one around nutrition KAP in meeting minimum dietary diversity requirements for good nutrition, as well as to mitigate key barriers, including weather and male and other household member lack of engagement.

Strengthen the coaching curriculum around dietary diversity. The current coaching curriculum focuses on reinforcing household practices around consuming balanced meals, focusing on Go, Grow, and Glow nutrition food groups and knowledge as to how to balance these categories. It also places a heavy focus on farming vegetables to include in balanced meals, such as amaranthus, Sukuma wiki, eggplant, among others, given the limited vegetable consumption among households at the start of the cohort one. The assessment team recommends reviewing the coaching curriculum for cohort two to include a greater emphasis on the differences in dietary diversity for adults, women of reproductive age, and children aged 6 to 23 months, including providing more guidance around the frequency at which nutrient-dense foods should be consumed across the different demographics. At the same time, the coaching curriculum is highly structured and would benefit from additional guidance and emphasis with coaches to provide “refresher coaching sessions” on certain topics when household circumstances have changed, for example a woman becomes pregnant, or a child reaches six months of age. Specifically, the coaching curriculum should include specific guidance to identify household circumstance changes and link those scenario changes to particular content or sessions that the coach should focus on refreshing with households.

In addition, given the practice of purchasing certain food groups, such as flesh foods, milk, or eggs, and affordability barriers leading to lower consumption across the groups, the assessment team recommends including a greater focus on encouraging and supporting cohort two participants around livestock farming. For example, the assessment identified successful examples from cohort one of participants who had purchased hens to produce eggs for consumption and the additional benefitted from the income from egg sales.

Strengthen the FFBS curriculum to emphasize livestock and link to coaching on dietary diversity. The assessment team recommends that the FFBS curriculum emphasize rearing small ruminants, which include sheep and goat, given their multiple benefits to food

security as documented by the International Fund for Agricultural Development.³⁴ The assessment team identified several benefits based on the International Fund for Agricultural Development's research. Women prefer small livestock because they tend to not interfere with other household responsibilities, reducing the risk of exacerbating existing issues of women's time poverty.

- Small ruminants can overcome the direct and indirect effects of heat stress and can adapt to water-limited areas, leaving them less vulnerable to the cited weather-related and water access challenges.
- Small ruminants reproduce more quickly than large ruminants, allowing greater flexibility to sell or consume livestock if needed, given the ability to restore depleted numbers.
- Small ruminants can play a safety net role for households during periods when crops are not ready or are suffering from other shocks by selling to purchase foods or consuming.
- Small ruminants can provide solutions for households with marginal or infertile land, when their feeding is planned for properly. Natural pasture is the basis of small ruminant diets, but fallow land and roadsides are also important feed sources that can be taken advantage through strategies such as scavenging, tethering, or herding. Fodder crops (such as grasses and legume trees) and non-conventional feeds (such as banana leaves, sweet potato vines, or crop by-products such as husks, etc.) are particularly useful when land access is scarce and provide adequate feed sources for small ruminants.

To ensure the success of this approach, the Activity's private sector engagement approach for cohort two should also build out linkages to support livestock-related inputs, such as veterinarians and access to immunizations, as well as embed within the FFBS methodology relevant trainings on small ruminant livestock management, such as pastoral and grazing, care and treatment of small ruminants, breeding, and handling and processing of milk.

Broaden the scope of climate change adaptation agricultural practices within the FFBS methodology and through private sector engagement (PSE) linkages. Weather-related damage to crops emerged as a prominent issue that will continue to be a challenge for cohort two food security and nutrition outcomes. For cohort one interventions, the Activity facilitated access to drought-tolerant and fast maturing seeds and a robust integrated production and pest management program within the FFBS methodology. For cohort two, there is an opportunity to expand weather-resistant practices to mitigate the challenges posed by fluctuating weather due to climate change, particularly around (1) introducing water-resistant irrigation technologies and (2) exploring establishing linkages to crop insurance products.

The assessment team recommends that the Activity introduce water-efficient irrigation methods into FFBS and create links to affordable equipment providers. Given the prevailing practice of rainfed agriculture, the unpredictability of rainfall patterns necessitates alternative irrigation methods suitable for water-scarce environments like the refugee and host communities. Under Feed the Future and in collaboration with the University of California Davis, the Horticulture

³⁴ IFAD (2020) The Small Livestock Advantage: A sustainable entry point for addressing SDGs in rural areas. https://www.ifad.org/documents/38714170/42264619/livestock_advantage.pdf/6e4114ab-5fb7-55c9-f79b-eb779c7214de?t=1619018180658

Innovation Lab³⁵ developed four small-scale, affordable, irrigation technologies in Uganda that could be relevant to the Activity's cohort two. Specific diagrams for each of the technologies is hosted by the University of California Davis website linked in the footnote on the previous page and the different water-efficient technologies include: (1) micro furrow; (2) micro basins; (3) raise furrow-basins, or (4) raised and terraced main canal. In considering the water supply challenges in the Kamwenge District, the micro basin technology approach is particularly worth exploring, given its low cost and ability to operate with any available water source.

As with the adoption of most resource-saving technologies, higher up-front costs are common but can be prohibitive for vulnerable households such as those that will be targeted through cohort two. Through PSE approaches, there is opportunity to engage in innovative market-based purchasing instruments, ideally negotiated by the Activity team, sensitized with participants through the FFBS, and linked for those interested in adopting the technology. For example, in Zambia, the company Rent-to-Own³⁶ sells productive assets and equipment to smallholder farmers that enable clients to acquire and repay both the asset and financing through payment scheduled tailored to clients' income streams.

The assessment team also recommends that the Activity establish links between participants and private sector crop insurers. Crop insurance for drought would be particularly useful to participants, as according to research under the Activity Labor Market Assessment, shocks were most due to droughts rather than flooding. Providing crop insurance information and contacts to participants and encouraging them to purchase this insurance could help reduce income volatility and promote resilience. There are a number of crop insurance providers in Uganda. The team recommends for cohort two that the PSE component review providers and their insurance products to ensure that they are relevant to the communities' contexts and affordable. Some known providers are organized under the Agro Consortium³⁷ and the consortium has supported successful models of organizing smallholder farmers to access crop insurance through a subscription-based scheme, such as in Lango with the provider Ensibuuko Technology Limited³⁸.

Increase engagement of spouses and other household members to reinforce nutrition and food security practices through routine home visits, targeted sessions relevant to other household members. The coaching curriculum currently focuses on ensuring spouses are present during individual and group coaching sessions, with the intent that other household members will be engaged during coaching and reap the benefits of the sensitizations and KAP reinforcements. However, in practice, engagement of more members of the household for cohort one seemed to have been more successful in the individual coaching model, where there were more frequent home visits, than in the group coaching model. This was especially prominent in reinforcing WASH practices among cohort one. For cohort two, it is likely that the Activity will emphasize group coaching, given early evidence that it is a more scalable and cost-efficient model of coaching. However, there is a risk that without an intentional effort to replicate some of the individual coaching modalities, further engagement of the broader household and the promise of

³⁵ <https://horticulture.ucdavis.edu/information/small-scale-irrigation-technologies-horticulture>

³⁶ <https://rtoafrika.com/>

³⁷ <https://aic.ug/>

³⁸ <https://aic.ug/7000-farmers-in-lango-enroll-for-crop-insurance-scheme/>

the woman-plus-household approach may not be realized. Thus, for cohort two, the assessment team recommends that the Activity incorporate home visits and targeted content or activities.

The Activity should incorporate routine **home visits** (such as monthly) by the coach to each cohort two household under their care. Home visits are widely cited in the nutrition and WASH literature as an important mechanism in the behavior change process following the *initiation* of behavior change (training or campaign) to *maintain* the behavior change³⁹. As demonstrated in this report, home visits from coaches motivated participants' continued adherence to practices as well as served to engage other household members beyond the primary participant. During household plan and graduation map development, the team recommends that the Coach and household members agree on a mutually convenient time for regular monthly home visits, so other household members are aware of the visit and can make arrangements to ensure they can attend.

The Activity should intentionally **incorporate targeted content or activities** directed at youth and adolescents to encourage greater engagement in the household uptake and reinforcement of nutrition and WASH practices. As demonstrated in the report, when the Activity engaged other members of the household, they provided valuable contributions by reminding their parents to follow practices or using their literacy skills to support activities such as family MUAC. According to the WFP, youth and adolescents can be agents of change for family members, broader communities, especially by passing on knowledge and practices to younger siblings.⁴⁰ Engaging youth and adolescents is more likely to lead to broader and intergenerational KAP changes than targeting adults alone. Specific activities for cohort two could include youth-focused VSLAs (youth tend to be more ready to adopt new technologies that could support agriculture), nutrition or WASH-themed games and activities to do with adolescents during home visits, and opportunities for youth leadership within tracking graduation goals.

4.2 Status of Health Service Provision

The following recommendations for cohort two address the primary challenge experienced by cohort one around health provision barriers, namely ensuring pregnant women are attending ANC and taking prenatal supplements early, mitigating barriers of costs associated with health service provision, and collaborating with the Ministry of Health and MTI to address barriers related to health worker stigma.

Introduce a community-based approach to identify pregnant women early in their pregnancies and support access to ANC, prenatal supplements, and referred health services. The assessment team identified persistent barriers to women accessing ANC early in their pregnancy, with most doing so in the second and third trimester. At the same time VHTs were overwhelmed and frequently were unable to identify pregnant women early to encourage ANC visits and prenatal supplement follow up. Community mobilization and community-based

³⁹ UNICEF and Action Against Hunger (2017) WASH Nutrition: A Practical Guidebook on Increasing Nutritional Impact through the Integration of WASH and Nutrition Programmes.

https://www.actionagainsthunger.org/sites/default/files/publications/2017_ACF_WASH_Nutrition_Guidebook_BD.pdf

⁴⁰ WFP (XXX). https://docs.wfp.org/api/documents/WFP-0000100062/download/?_ga=2.69748498.382229415.1628106385-1735664561.1628106385

initiatives are useful complements to conventional maternal health initiatives.⁴¹ The MaiKhanda initiative in Malawi,⁴² which used women's groups to facilitate community mobilization around maternal health issues and deploy care, is one such initiative. Given the existing structure of the Activity, there is an opportunity to use the group coaching model or VSLAs in cohort two as community mobilization groups to help identify pregnant women among cohort two participating households early in their pregnancy and provide them with the necessary services and reminders. During cohort one, the Activity introduced a Telerivet mobile-based communication system to send text and voice reminders and messages to participants' phones. The communication system can operate in a two-way fashion and would be an appropriate tool to build out an approach around registering individuals through text-based or call-in features. For cohort two, building on this success, the Activity plans to purchase phones for all participating households. The assessment team recommends linking the Telerivet system to a community-based mobilization approach in which cohort two groups are trained to use the platform to provide information on a household that is known to have a recently pregnant woman. In this way, the Activity will be informed early of known pregnant women to deliver targeted support including ANC visits and reminders around prenatal supplements by either a coach, a VHT, or through text or voice reminders.

Strengthen coaching curriculum regarding the welfare fund and its usages. Currently, the coaching curriculum provides content to households about the importance of saving and how to save for different needs. The curriculum around savings is broad and focuses on benefits, including providing for basic needs, achieving livelihood goals, and the ability to deal with shocks. It also provides basic information around VSLAs and the welfare fund, which is intended to cover emergencies during the saving cycle before share out. During cohort one, participants understood that the welfare fund was to be used for emergencies but nevertheless seemed hesitant to use it. The assessment team recommends that for cohort two, coaches encourage and facilitate discussions with participants about the "emergencies" that these funds could be used for. For example, the coaches could include scenarios such as using the fund to mitigate barriers related to transportation costs for ANC or health service visits if the household is unable to pay or, as referenced in the report, spouses are unwilling to support women with these costs.

Engage and collaborate with existing Ministry of Health plans to provide training to healthcare workers around client management to support sensitizing workers. Stigma faced by patients seeking healthcare was a barrier to cohort one participants' willingness to access healthcare services. The assessment team's systematic review of approaches to reduce broad categories of stigma in healthcare facilities suggested the following best practices: (1) providing information or sensitizing on the effects of the stigma, (2) training healthcare providers to work with stigmatized groups, (3) participatory learning activities where clients engage directly with healthcare workers, (4) contact with the stigmatized group to support empathy, (5) supporting client coping mechanisms, and (6) policy change⁴³. While the Activity's purpose is not to produce system-level changes around the healthcare system, the assessment team recommends collaborating in small ways with the existing planned efforts by the MOH and MTI to begin a

⁴¹ Lassi, Z. Das, J. Salam, R. and Bhuttha, Z. (2014) "Quality of Care in Maternal and Child Health". *Reproductive Health* Volume 11 Supplement 2.

⁴² Colbourn, T. Nambiar, B. and Costello, A. (2013). *MaiKhanda – Final Evaluation Report*. London Global University, Institute of Global Health. <http://www.health.org.uk/sites/default/files/MaiKhandaFinalEvaluationReport.pdf>

⁴³ Nyblade, L., Stockton, M.A., Giger, K. et al. Stigma in health facilities: why it matters and how we can change it. *BMC Med* 17, 25 (2019). <https://doi.org/10.1186/s12916-019-1256-2>

comprehensive health worker training effort. Specifically, through its existing coordination mechanisms with MOH, the Activity could support best practices one and three, where Coaches or staff guest lecture trainings, share insights in coordination activities around participant experiences, or more. While this would not be specific to cohort two participants, it may prove beneficial in the longer-term. At the same time, for cohort two, it would be opportune to topics around client coping mechanisms and raise awareness of potential stigmas that women may face in accessing healthcare in coaching curricula, aligned to best practice four.

4.3 WASH Knowledge, Attitudes and Practices

The assessment team designed the following recommendations for cohort two to address the primary challenges experienced by cohort one around WASH, namely around accessing WASH materials and addressing dissatisfaction around access to water.

Provide direction in VSLAs around saving for WASH goals and link VSLAs groups to materials companies through PSE linkages. For cohort one, CBTs served as VSLA facilitators and coaches attended VSLA groups to accompany participants. However, the direction of savings goals and cycles among VSLA groups was not heavily influenced by either the CBT or coach. Most of the discussion around VSLAs by participants tended to focus on its usage towards investing in an IGA, but there are successful global examples of VSLAs integrating with Water Use Committees, including in Uganda,⁴⁴ or combining VSLAs with sanitation marketing to influence communities around using savings to improve WASH practices⁴⁵.

While the group-led decision-making nature of the Activity's VSLA approach should be continued in cohort two, it would be opportune for CBTs and coaches to play a role in sensitizing, raising awareness, and sharing information to influence using VSLA payouts to purchase WASH materials, such as water storage containers, latrine materials or labor, and/or rainwater harvesting tanks. Additionally, through PSE linkages, WASH materials providers could be invited to VSLA group sessions to do marketing "road shows" and highlight their products to the participants. Road shows are typically half-day events hosted by a company or group of companies to showcase products to dedicated groups of consumers. The facilitation of the captive audience by the Activity, as well as the explicit goals among this group to purchase materials, is likely to elicit companies' interests in participating. Such events may be considered valuable as referenced by one refugee community HCC which shared that when used for agriculture, it "opened people's eyes towards doing commercial agriculture" and suggested such events continue.

Emphasize alternative water collection practices whether at the individual household level or through group-level, including linkages through PSE. Cohort one did not have participant-focused activities around water access, rather the Activity's staff coordinated and collaborated with external actors, such as Oxfam or UNHCR, to support water access for households. However, as demonstrated in section 2.2.3, water access continues to be a barrier and challenge for households. In addition, with the context changes around water management from NGOs to the NWSC, the assessment team anticipates that it will continue to be a challenge. To mitigate barriers around water access, FAO⁴⁶ highlights that water harvesting practices are viable options

⁴⁴ https://rwsnforum7.files.wordpress.com/2016/11/full_paper_0119_submitter_0162_namata_teo.pdf

⁴⁵ <https://www.mcd.org/docs/sheets/Sanitation-Marketing.pdf>

⁴⁶ FAO (2016) *Strengthening agricultural water efficiency and productivity on the African and global level.* <http://www.fao.org/3/i5976e/i5976e.pdf>

to supplement limited water access from boreholes and wells or springs. Rainwater harvesting is a viable approach for Uganda, given the heavy rainfall periods during rainy seasons. Proper storage could support water buffering during dry periods.

For cohort two, the assessment team recommends supporting participants' efforts to access water through alternative water collection practices. Examples that could be explored further and which have been implemented in other areas of Uganda include the following (1) domestic rainwater harvesting tanks, typically used at the household-level and which often are mass-produced plastic tanks, or (2) ferrocement rainwater tanks, typically permanent structures built on location and larger than the plastic tanks for larger use (such as a school or otherwise). The team recommends that for cohort two, the Activity explore both options, domestic rainwater harvesting for households, linking to the access to materials recommendation above, or ferrocement tanks, through a more organized approach with groups of households able to manage and access from one tank. The Activity could organize the group-based approach through group coaching or VSLA structures. As noted in the literature, any exploration of rainwater harvesting must be closely linked with training and good treatment and storage mechanisms, to prevent disease and issues.⁴⁷ In addition, strong PSE links to providers of rainwater harvesting tanks in both approaches would be required.

⁴⁷ <https://iwaponline.com/washdev/article/10/3/549/76069/Maintenance-practices-and-water-quality-from>

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