



EFFECTIVENESS OF REAP POVERTY GRADUATION MODEL IN IMPROVING HOUSEHOLD INCOMES AMONG ULTRA-POOR WOMEN



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Cover Page Photo Credit: Lopuwa Maria (39) displays clothes she sells from her boutique. She is part of the *Ekeunos Makee* business group and has been operating this business since 2019 when she received the REAP grant in Lorengechora Town Council, Napak district, Karamoja (April 2021, CRS).

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List of Acronyms

BHA	Bureau for Humanitarian Assistance
CRS	Catholic Relief Services
CU5	Children under 5 years of age
DFSA	Development Food Security Activity
FANTA	Food and Nutrition Technical Assistance Project
FCS	Food Consumption Score
FGD	Focus Group Discussion
HFIAS	Household Food Insecurity Access Scale
HHs	Households
IPA	Innovations for Poverty Action
IPC	Integrated (Food Security) Phase Classification
JMP	Joint Monitoring Program
MTP	Membership Theory of Poverty
NGO	Non-Governmental Organization
PLW	Pregnant and Lactating Women
PPI	Poverty Probability Index
PRA	Participatory Rural Appraisal
PWR	Poverty Wealth Ranking
REAP	Rural Entrepreneur Access Project
SACCO	Savings and Credit Cooperative Organization
SDG	Sustainable Development Goal
SILC	Savings and Internal Lending Communities
SOLI	Standard of Living Index
TASO	The AIDS Support Organization
TLU	Tropical Livestock Unit
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization

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Executive Summary

Catholic Relief Services (CRS) is leading a consortium of six¹ partners in implementing a six-year \$43.6 million program funded by the USAID Bureau of Humanitarian Assistance (BHA) to build resilience to shocks, enhance livelihoods, and improve food and nutrition security for vulnerable rural families in Karamoja sub-region, Northeastern Uganda. The program, named Nuyok (which means “it is ours” in the local language) is implemented in Abim, Nakapiripirit, Nabilatuk, and Napak districts and is expected to have measurable impact on more than 269,000 direct participants in 548 villages. Nuyok sought to strengthen governance, promote gender equity, build community capacities to manage shocks and stressors, strengthen traditional and diversified livelihood strategies, and improve nutrition and health, including water, sanitation, and hygiene (WASH), for pregnant and lactating women (PLW), adolescent girls, and children under 5 years of age (CU5). The program began implementation on September 29, 2017 and was expected to end by September 30, 2022, but the program was extended to September 30, 2023 in order to implement its exit and sustainability strategies.

Alongside Nuyok’s core interventions in maternal and child health/nutrition, agriculture and livelihoods, and civil society and disaster preparedness, the program has piloted and adapted the Rural Entrepreneur Access Project (REAP) model of poverty graduation in Napak district. REAP enrolled the poorest women in a sequenced, two-year program that provided them with the skills and resources necessary to earn an income, establish savings, and build resilience. This set of interventions, developed and assessed by the BOMA Project in the arid and semi-arid lands of Kenya, sought to enroll 1,635 ultra-poor women in Napak district. Following participant targeting but prior to launching community-level interventions, Nuyok conducted a REAP baseline survey in October 2019.

Endline Survey

The aim of the endline survey was to evaluate the effectiveness of the two-year program on the participants and their households. BOMA’s Standard of Living Index (SOLI) survey was administered to participants during key points in the program: (1) at enrollment for baseline data in October 2019, and (2) at endline in July 2022. The survey evaluated the participants’ household income, savings, household decision making influence, livestock ownership, enrollment of children in school, food security, healthcare use, and spending. For the quantitative data, a total of 455 samples were collected representing an 87% response rate. Qualitative data was collected through focus group discussions (FGD). A total of 13 FGDs were conducted.

¹ Three of the partners have, however, stopped implementing Nuyok activities as the program began the exit and sustainability phase in FY22.

Key Findings

The Indicator Performance Results table comparing baseline and endline estimates with statistical significant test p-values and end of program (EoP) targets is presented in Annex 1. In a comparison from baseline to endline, results show that the Nuyok REAP cohort reported an increase in average household income (from 18,620 Ugandan shillings [UGX] at baseline to UGX 116,704 at endline), improved household food consumption levels, a 10-fold increase in savings, and an increased role by women in household decision-making regarding children's education, medical expenses, and the purchase of household livestock over the course of two years.

1. **Poverty Probability Index (PPI):** PPIs of above 50% decreased from 95% at baseline to 90% at endline (EoP target = 85%).
2. **Income sources and diversification:** At endline, about 69% of participants reported having two or more sources of income, an increase from 46% at baseline. The EoP target was set at 75%.
3. **Food security (food consumption scores [FCS]):** At endline, 69% of households had borderline to poor food consumption levels, and 31% had acceptable food consumption scores, against an EoP target of 40%.

This is an improvement from baseline where a higher proportion of households (81%) had poor to borderline FCSs while a lower proportion (only 19%) had acceptable scores. This means that there was an increase (by 12%) in the proportion of households that had acceptable FCSs at endline compared to baseline.

4. **Livestock ownership and control:** The proportion of households owning livestock increased significantly from baseline to endline.

For instance, the proportion of households owning cattle increased from 11% at baseline to 28% at endline, households owning shoats increased from 16% to 34%, and households owning chickens, ducks, and turkeys increased from 27% to 45%.

5. **Human capital investment:** There was an improvement in the proportion of households that were able to afford human capital investments such as paying school fees.

Only 27% of participating households had paid school fees within the previous one year prior to the baseline assessment, and the proportion stood at 40% during the endline assessment. Considering children withdrawn from school, 35% of households had withdrawn their kids from school within the previous one year prior to baseline against 20% at endline. However, the COVID-19 pandemic also had a major influence on school attendance as many schools remained closed for about two years beginning in March 2020.

6. **Gender dynamics:** There was an observed improvement of female participation in income-generating activities such as livestock rearing and cash crop farming.

Specifically, 40% of surveyed women reported having participated in livestock rearing at endline, which was an increase from 14% at baseline.

7. **Group membership:** A notable increase (from 39% during baseline to 76% during endline) in the number of credit and microfinance groups (Savings and Credit Cooperative Organizations [SACCO]/merry-go-rounds/ Savings and Internal Lending Communities [SILC]) was observed. This is a clear indication of the positive effect that the REAP initiative has had among REAP members and the community in general. The number of trade and business associations also grew from 9% at baseline to 16% during the endline assessment, against an EoP target of 35%.
8. **Index of social capital:** The index of social capital was found to be much stronger in the endline assessment as compared to the baseline assessment. Endline assessments scored highest in all eight items (refer to Table 21: Coding the Index of Social Capital Items) concerning the index of social capital. The overall index of social capital was 64.765 at endline against 50.550 at baseline, with an EoP target of 60.
9. **Water, sanitation, and hygiene:** There was an increase in the number of households with their main source of drinking water close to their homestead. The increased access to improved sources of drinking water can be attributed to Nuyok borehole rehabilitation interventions in the areas of implementation.

The proportion of households that reported having their main source of drinking water close to their homestead doubled (from 7% at baseline to 16% at endline). The proportion of households that had access to improved sources of drinking water increased by 10% from baseline.

Poverty Graduation

Results from the endline survey confirmed that since joining REAP in 2019, participants have significantly improved their capacity to provide for their families, ensure food security for their households, and respond to shocks. Participants also expressed an increase in their decision-making authority and agency within their households and their communities. This improvement was measured at exit using BOMA's graduation criteria. The passing/graduation rate for food security, based on the two criteria selected, stood at 62% (for the proportion of households that reported no child going to bed without an evening meal) and 72% (for the proportion of households that reported adults consuming at least two meals in a day). The graduation rate for sustainable livelihood (i.e., the proportion of households with two or more sources of income) was 69%, while the graduation rate for shock preparedness (participants that reported the value of the BOMA business being at least 25% higher than the total conditional cash transfer) was 46%. The graduation rate for the human capital investment criteria (the proportion of households that reported primary school-age children attending primary school) was 39%.

About 97% of surveyed participants were members of saving groups and reported having savings, which is a key component of shock preparedness. This represented a significant improvement from baseline where only 22% reported being members of a saving group and having savings. Also reported was average cash savings, which amounted to UGX 88,265 at

endline against UGX 6,395 at baseline. The overall passing/graduation rate computed from the thematic areas of food security, sustainable livelihoods, shock preparedness, and human capital investment set for REAP participants was 60%.

Overall, the REAP program has shown success in meeting its immediate goals of increased availability of healthy foods for households and increased economic accessibility of healthy foods by increasing incomes. Participants were satisfied with the trainings and other results of the program/intervention that enabled them to improve various aspects such as social and human capital investments, savings, gender equity, and livelihood strategy diversification.

Introduction

1.1 Nuyok Background

Nuyok, a Karimojong word meaning “it is ours,” is a Development Food Security Activity (DFSA) funded under USAID’s BHA and implemented by a consortium led by CRS. The name *Nuyok* aligns well with the program’s emphasis on local partnership and subsidiarity. Nuyok has been working to build resilience to shocks, enhance livelihoods, and improve food security and nutrition for vulnerable rural families in four districts of Karamoja—Abim, Nakapiripirit, Nabilatuk, and Napak—home to 406,880 people living in an estimated 70,338 households.

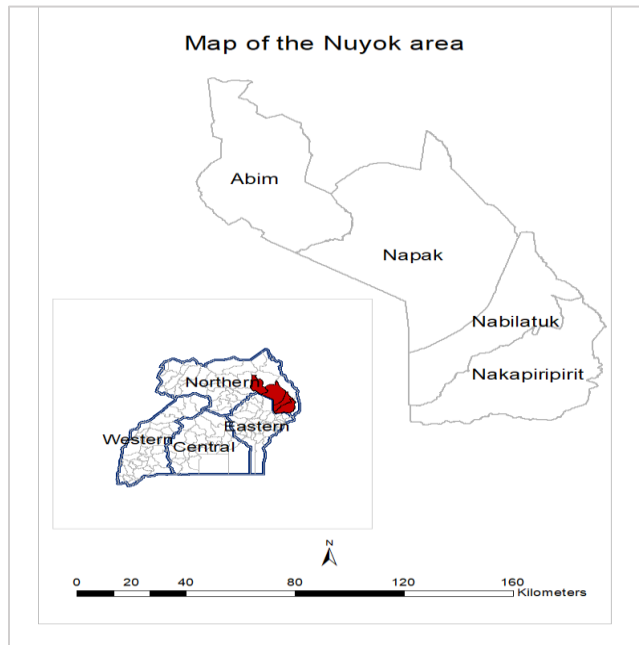


Figure 1: Map of the Nuyok Operational Areas

The program adopted an integrated approach to address food and nutrition security in

Karamoja. Nutrition, agricultural, and livelihoods activities are complemented by a multi-sectoral focus on gender, youth, conflict sensitivity, and social accountability, leveraging all pathways for sustained food security and optimal nutrition.

Areas of intervention

- Civil society/governance.
- Maternal and child health.
- Nutrition.
- Agriculture.
- Disaster preparedness.

Expected outcomes

- Empowered, resilient, and healthy families.
- Responsive and inclusive governance.
- A vibrant private sector that engages smallholders at every level.

1.2 Poverty Graduation Intervention and Rationale

CRS has been working in partnership with the BOMA Project to empower ultra-poor and vulnerable households to improve their economic conditions and increase their resilience through a poverty graduation model. The BOMA Project was responsible for providing technical assistance and guidance to CRS and its local implementing partner, Caritas Moroto, to ensure appropriate adaptation and high-quality implementation, monitoring, and support of the REAP model, targeting 1,635 of the most vulnerable women in Iriri, Lotome, Ngoleriet, Matany, Lokopo, and Lopei sub-counties in Napak district.

REAP is a poverty graduation model specifically tailored for women living in extreme poverty in remote and rural drylands of Africa. These women tend to have inadequate infrastructure, limited employment opportunities, and long-standing reliance on pastoralist livelihoods, which are increasingly vulnerable to climate change. REAP enrollment offers participants a set of sequenced, layered, and integrated interventions, namely a cash transfer (Jump Grant) to start a small business group to generate income, consumption stipend, membership in a savings group, regular mentorship, and training in financial, business, and life skills. The hypothesis of the intervention is that if REAP provides an appropriate combination of social and economic interventions to enable women and their households to graduate out of extreme poverty, then these women will achieve improved social standing and engage in sustainable livelihoods while their households benefit from improved food security, increased investment in human capital, and improved resilience to shocks.

1.2.1 Building Blocks of BOMA's REAP Model

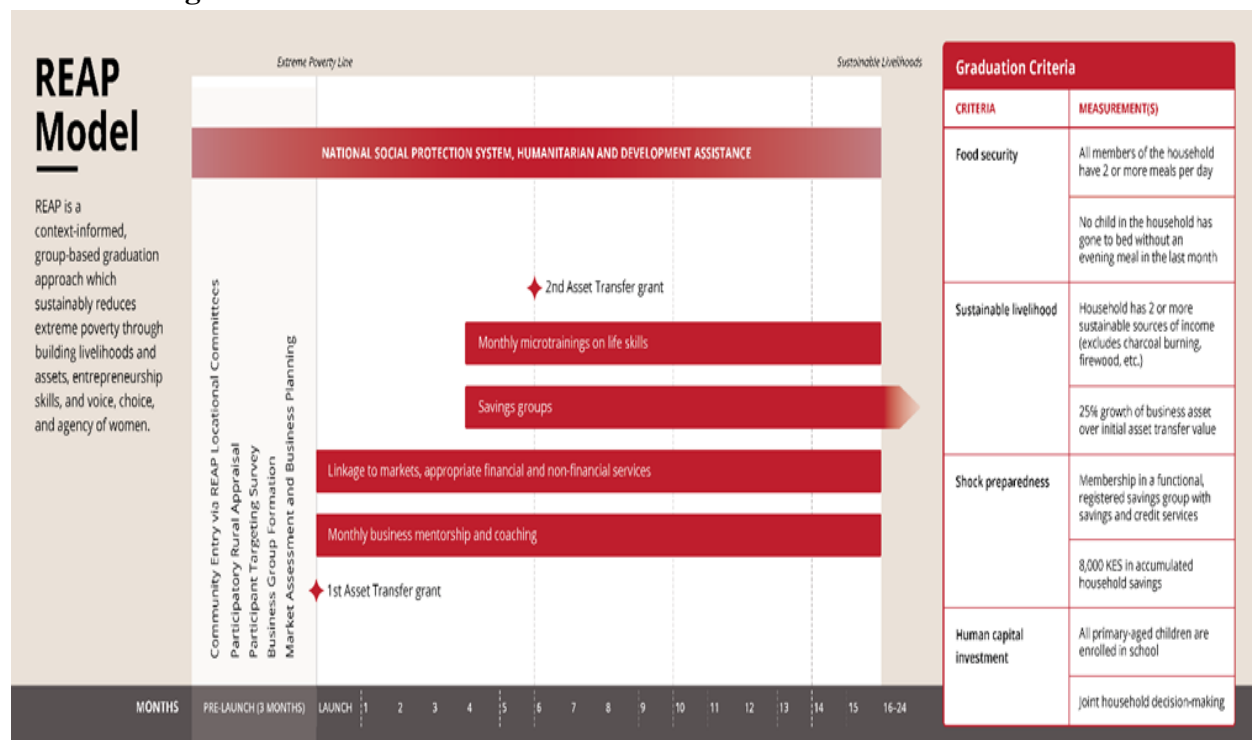


Figure 2: Building Blocks of BOMA's REAP Model

- 1. Targeting, community buy-in, and baseline survey:** Three methods of targeting were used, namely, Participatory Rural Appraisal (with community-based wealth ranking processes); the Participant Targeting Tool (an inclusion/exclusion ranking tool adapted specifically for Napak with community input); and the use of REAP Location Committees to facilitate community buy-in and achieve balanced representation.
- 2. Mentoring and coaching:** During the targeting phase, village mentors were identified from the local community by Caritas Moroto. The mentors helped in forming business groups of three qualified women, delivered initial training on basic business skills, and guided the groups in forming business plans (i.e., a Jump Grant application). This included a description of the business, projected start-up costs, budget, and savings plan. Mentors visited each business monthly during the two-year program, offering instruction, mediation, and advice.
- 3. Cash transfer:** One thousand six hundred thirty-five participants received consumption stipends of US\$ 20 as a cash safety net for four months to enable them to access basic needs during the lean season and allow established businesses to stabilize. Each business group received a seed capital Jump Grant of US\$ 200 to start their business. A second performance-based conditional cash transfer of US\$ 100 was given to 445 business groups (1,335 participants) following a successful progress report by the village mentor six months

after the initial grant. Those who did not qualify were dropped from the REAP program. Qualification for the performance-based additional grant was based on three criteria: average total business value for the last three months (at the time of assessment) growing by 25% to UGX 937,000; at least two participants still active within the business at the time of assessment; business group members not “keeping stock separately or selling separately” as an operation strategy.

4. Financial and life skills training:

- Microtraining covering topics on financial skills, life skills, WASH, and nutrition (including exit preparations) were delivered during saving meetings. Mentors delivered training sessions throughout the two-year intervention covering a variety of financial and life skills topics, including borrowing and lending, planning for long-term expenses, household decision-making, the importance of children’s education, and health and social messaging modules.

5. Savings and access to credit:

- Once businesses were established, mentors assembled four to five business groups from nearby locations into savings associations whose members met regularly to deposit or withdraw savings, using a shares-based method. Savings contributions were then used as a source of credit, in line with established guidelines and lending rules, for business expansion and individual interest-bearing loans.

6. Linkages: With support from program staff, mentors guided business and savings groups to access appropriate formal/mobile financial services, government services, market opportunities, and other non-governmental organization (NGO) offerings.

REAP participants are considered “graduated” at the end of two years when they meet at least four simple criteria across the following categories:

- Food security, measured by:
 - No child going to bed hungry in the last month.
 - Household members eating at least two meals per day in the last week.
- Sustainable livelihoods, measured by:
 - Number of sources of income.
 - The value of the REAP business compared with the total conditional cash transfer.
- Shock preparedness, measured by:
 - Participants’ cash savings and membership in a functional savings group.
- Human capital investment, measured by:
 - All eligible children attending primary school.

The graduation criteria are intended to be simple to measure, promote, and understand at the community level. The graduation criteria are assessed at baseline and endline using BOMA's SOLI tool.

1.2.2 Ultra-Poor Women: Who Are They?

Ultra-poor women were identified by their communities as poor, per their understanding of what poverty means. The majority of the ultra-poor women were heads of households, suffered chronic illness or had disabilities, and were orphans, widows, single mothers, or neglected women from polygamous marriages.

A series of steps were undertaken to identify the ultra-poor including:

- Consultative meetings with implementing partners/stakeholders, community leaders, and government stakeholders at all levels to inform the Participatory Rural Appraisal (PRA) process and to gain a local understanding of poverty.
- Secondly, PRAs were conducted where social mapping and Poverty Wealth Ranking (PWR) exercises were performed to rank the women into different wealth quantiles. Entire communities (members and leaders) participated to define wealth rankings (1=extremely poor; 2=poor; 3=moderately poor; 4=rich; and 5=richest) and group households based on their own wealth definitions. Local understanding of poverty definitions, as per the communities, included ultra-poor, "*ngulu enyamito alokwap*" (having absolutely nothing and surviving under God's mercy); poor, "*ngulu angician*" (struggling to make ends meet); moderate, "*eyainapath*" (having the potential to easily slide into extreme/poor); rich, "*egogong*" (poor, but energetic and able to do hard labor); and richest, "*ebarit*" (better off than extreme/poor and moderate category).
- After ranking, screening was performed by project staff and the community selection committees to make sure the women were well placed in the ranks. Any woman screened and confirmed to be in ranks one or two were considered ultra-poor.

Inclusion/exclusion criteria was applied to ensure that the right participants were included in the program. Below are the criteria applied.

REAP inclusion criteria:

- Confirmed in ranks one or two during PRA process.
- Support from partners or family.
- Clear future/business plan.
- Productive.
- Agreed to work in groups of three.

Exclusion criteria

- Non-ultra-poor (confirmed in ranks three, four, or five).
- Confirmed in ranks one or two, but are unproductive (e.g., very elderly or have mental issues).
- No future/business plans.
- Unwilling to work in groups.

1.3 Survey Purpose

Nuyok adapted BOMA's SOLI tool, a custom tool to evaluate the effectiveness of the two-year program. The SOLI survey assessed changes in graduation criteria and other key indicators at baseline and endline. This report presents evidence of the effects of REAP on women participants over its two-year implementation and identifies opportunities for expanding REAP outcomes.

Methodology

2.1 Survey Design

The REAP endline survey in Uganda adopted a cross-sectional study design with a mixed participatory method. The aim was to collect evidence using triangulated qualitative and quantitative approaches comprised of household interviews, observations, and FGDs. The proposed approaches enabled the team to obtain relevant and multidimensional information/data from the target groups and equally enable a more in-depth and meaningful interpretation of quantitative household survey data. Similar methodology was used for both baseline and endline. However, for baseline, qualitative data (FGDs) was not collected.

Data Sources

Data sources for the study included household surveys, FGDs, and monthly monitoring data.

2.2 Sampling Plan

2.2.1 Sampling Frame

The target population for the survey consisted of the households of all 1,341 women enrolled in REAP. These households were located across 80 villages in seven sub-counties in Napak district. The first stage cluster frame consisted of the complete set of 80 REAP implementation villages. The participant frame, used at the second stage of sampling, consisted of a complete list of participants in the sampled clusters.

The sampling frame for the qualitative research was the parish. Ten parishes were randomly sampled, and in each parish, a village was randomly sampled. Eight to 12 participants of REAP business groups were purposively (i.e., the more active members) invited to participate in FGDs. Where villages did not have enough business group members to conduct an FGD, participants were added from a neighboring village.

In total, 13 FGDs were conducted with a total of 128 participants taking part in the discussions.

2.2.2 Sample Size

The survey was designed to determine point estimates for the key indicators with 95% confidence and a 5% margin of error. The indicator values for this survey were percentages, proportions, and the appropriate formulas to calculate the required sample size per indicator.

The sample size calculations for both baseline and endline were derived from the Participant-Based Survey Sampling Guide for Feed the Future Annual Monitoring Indicators (2018).² The highest sample size calculated was 437 for the indicator (percentage of individuals participating in community group memberships [not including savings groups, as this is a requirement of REAP]). Based on the sampling guide, the final sample size for this assessment was 525, which is the recommended minimum sample size, with a 10% non-response rate factored in. See Table 1 below.

² Diana Maria Stukel (2018). Participant-Based Survey Sampling Guide for Feed the Future Annual Monitoring Indicators. Washington, DC: Food and Nutrition Technical Assistance Project, FHI 360.

Table 1: Final Sample Size

# Participants per cluster to select	b	min = 15	max = 35
# Clusters to select	$m = \text{round}(f_{\text{final}} / b)$	35	15
Actual final sample	$f_{\text{final}} = b * m$	525	525

The survey planned to interview 25 participants per cluster/village, meaning that the survey planned to cover 21 clusters (villages).

2.3 Data Collection

Both quantitative and qualitative data was collected at endline among sampled participants of the REAP model. Only quantitative data was collected at baseline. The surveys were conducted in the participants' homes by a group of skilled and impartial enumerators to assure privacy and to confirm the information provided by participants. TaroWorks, a digital data collection application that uploads data to BOMA's Performance Insights data platform, was installed in the tablets used by enumerators. Enumerators underwent a four-day training program before the endline surveys, which covered topics like how to collect data using TaroWorks and tablets, the role of the enumerators, the survey methodology, the survey questionnaire, group role play, translation exercises, a practical test to ensure enumerator competency, and a field test. On the last day of training, BOMA delivered a post-test, during which enumerators discussed how they would respond to survey questions in various contexts and in the local language.

Throughout the survey, BOMA managers made spot checks to make sure the information was accurate. Spot checks were also performed by supervisors by re-administering two survey parts to a participant at random and contrasting the outcomes with those provided by the enumerator.

The unique digital platform developed by BOMA (i.e., Performance Insights) was used by BOMA's monitoring and evaluation team to generate dashboards for monitoring incoming data.

Limitations of the Study

The planned sample size was 525, however, the evaluation managed to collect samples from only 455 participants. This represents a 13% non-response rate. The high non-response rate noted in the endline survey was attributed to unavailability of participants during the enumerators' visit. Given that the survey was conducted during the busy weeding season, most participants were busy in the field, and as such, they could not be reached. This was compounded by poor mobile network connectivity that made it difficult for the enumerators to reach participants over the phone to discuss their location and availability. The insecurity in the area also contributed to the loss of some participants as they had relocated to safer areas.



Nuyok conducts a FGD with sampled REAP participants at Matany sub-county, Napak district (CRS, June 2022).

Findings

Demographic Profile of Participants

This section provides information on survey sample sizes and typical characteristics of households surveyed at endline. Highlights of the findings are shown in this section.

The endline survey completed 455 interviews representing an 87% response rate against the 496 interviews (a 94% response rate) completed during the baseline survey. The next section presents baseline and endline results.

Table 2 below presents a summary of socio-demographic characteristics of participants.

Table 2: Socio-Demographic Characteristics

Socio-demographic characteristics	Baseline (n=496), (%)	Endline (n=455), (%)	p-value
Age group of participants			0.198
Under 30 years	24.6	20.7	
30–49 years	45.8	45.3	
50 years and above	29.6	34.1	
Marital status			0.091
Never married and never lived together	1.0	0.7	
Married and living together in a union with one wife	37.9	40.2	
Married and living together in a union with more than one wife	33.1	26.4	
Divorced/separated	4.0	4.4	
Widowed	24.0	28.4	
Household size			0.083
1–3 persons	7.3	8.8	
4–6 persons	47.0	52.5	
7 or more persons	45.8	38.7	

* *Significant at 5%*

The above table shows slight variations in household composition and participant characteristics for baseline and endline assessments. However, there was no significant difference between baseline and endline for all the demographic characteristics (age, marital status, and household size). Therefore, even though repetitive measure was not used, the results for baseline and endline are comparable.

Economic Outcomes

Business Performance

At exit, 445 of 545 (81.7%) original businesses were still operating. This demonstrates the commitment of mentors, the value of consistent assistance from mentors, and the unity of the group members. However, the effects of the COVID-19 pandemic and security concerns presented difficulties for the businesses, hence, 100 businesses stopped functioning.

The average business value of each group increased steadily over the course of the two-year project, with the months of February 2021 to January 2022 seeing the biggest improvements and subsequent months seeing modest increases (Figure 3).

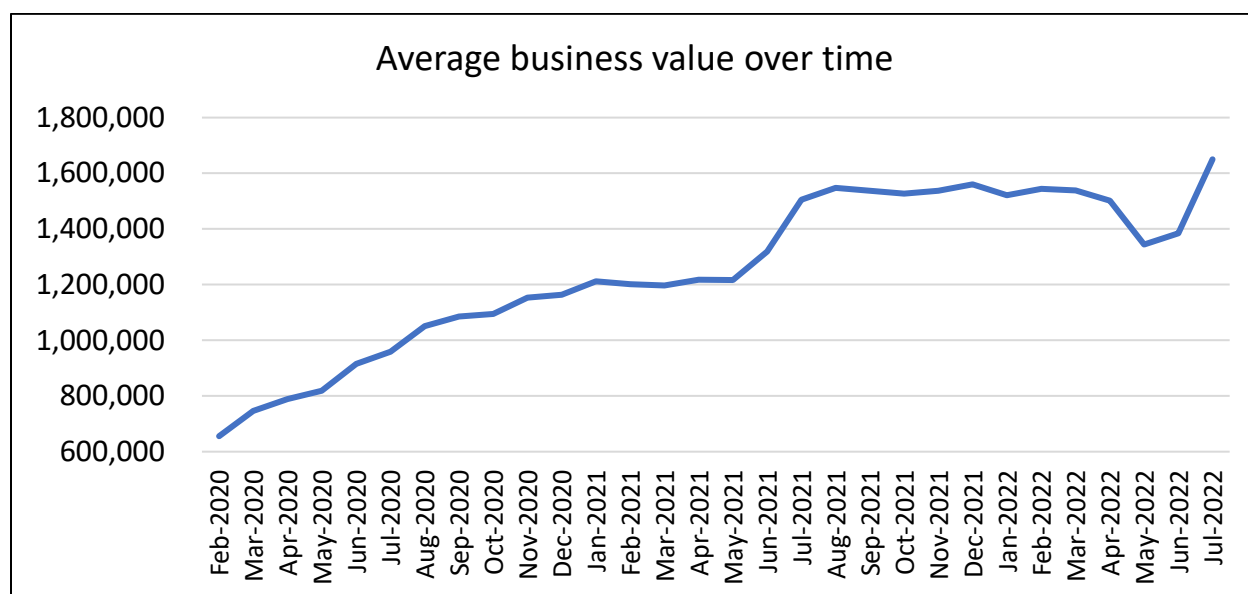


Figure 3: Average Business Value Over Time

At exit, a majority of groups (54.5%) were running small shops (kiosks/dukas) as their primary business: cereal banking (30.9%), selling livestock (10.8%), clothing business (1.0%). Bars, butchers, grocers, and hotels accounted for less than 1% of the groups' primary businesses. Groups with hotels as their primary business recorded the highest average value at exit while butchers recorded the lowest average business value (Table 3).

Table 3: Average Business Value at Exit by Type of Business

Type of business-primary	Proportion (%)	Average business value at exit
Kiosk/dukas	54.5	1,173,248.36
Cereal banking	30.9	1,214,339.74
Livestock sales	10.8	1,254,845.97
Clothes	1.0	1,726,624.44
Poultry farming	0.7	1,248,812.24
Other	0.7	1,252,617.75
Bar/alcohol sales	0.6	1,339,370.85
Butchery	0.3	998,862.16
Grocery	0.2	1,609,733.33
Hotel	0.2	1,638,815.49
Grand total	100.0	1,203,897.18

The five elements that make up business value are: cash in hand, stock value, business savings, the amount of credit owed to the group business, and the cost of the group's assets and equipment. The breakdown of the business value at exit is consistent with earlier exit reports (from other cohorts), with the highest proportion of the total value (43%) in stock, close to a third as cash in hand, and the remaining amount made up of debt owed to the business, savings, equipment, and assets.

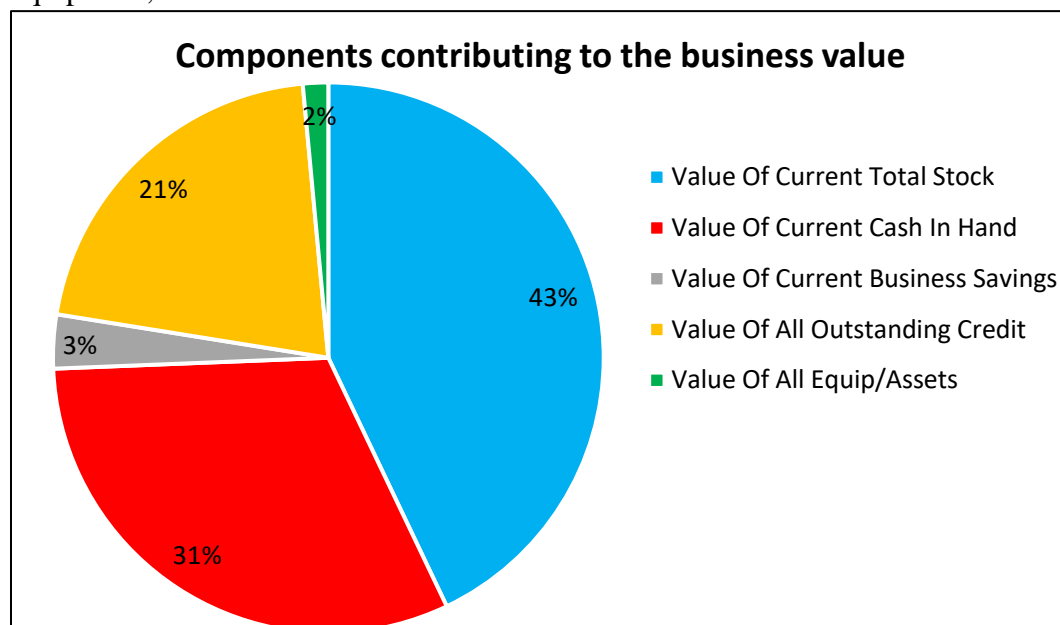


Figure 4: BOMA Business Value Composition

Poverty Index

Along with 10 questions regarding household characteristics and asset ownership, as proposed by Innovations for Poverty Action (IPA), the PPI was used³ to determine the probability that a household might fall below the poverty line. Probability was computed based on scores from the PPI, a \$1.90/day 2011 Purchasing Power Parity (PPP) poverty line, and the Uganda PPI scorecard from June 2015. Based on the PPI index, the findings indicated that 10% of the sample had a poverty probability of less than 0.5, 80% had a probability ranging between 0.5–0.75, and 10% had more than 0.75 poverty probability. Compared to baseline, the endline survey established that there was a significant improvement in the PPI.

Table 4: Poverty Probability Index (%)

Poverty probability	Baseline	Endline	p-value
<50%	5.1	9.9	0.012*
50%–75%	82.4	80.2	
>75%	12.5	9.9	

* Significant at 5%

Livelihood Activities

Income Sources and Diversification

One of the ways through which food security and community resilience can sustainably be improved is income generation. In addition to cash transfers, REAP also aimed at offering trainings to participants in financial, business, and life skills to increase their capacity to generate income. The survey results revealed differences in the main sources of income at baseline and endline. There was an increased proportion of households at endline compared to baseline that were earning income from business-related activities such as canteens and the sale of livestock, fish, fruits and vegetables, crop eggs, and milk. Moreover, even though the proportion of households that were burning and selling charcoal was slightly higher from baseline, the proportion of households that mentioned collecting and selling firewood as a source of income reduced significantly from 63% at baseline to only 35% at endline, thereby contributing to environmental protection and conservation. Noticeably, the proportion of participants that earned income from brewing beer was higher at endline (26%) compared to baseline (8%). During FGDs, some participants mentioned brewing traditional local brew as another way of generating income for their households.

“I was also able to start a business brewing in large quantity, then later, selling to other people at retail price.”

³ <https://www.povertyindex.org/country/uganda>.

“I started brewing traditional local drink/beer as another way of generating income to help boost my income from the money that they used to send us monthly (i.e., consumption stipend they received monthly).”

The proportion of households that reported casual labor as an income source increased at endline (50%) from baseline (22%). This can be attributed to the fact that the endline survey was conducted during the busy farming (weeding) period. In fact, enumerators had a challenging time reaching out to some of the sampled participants as they were engaged on the farms.

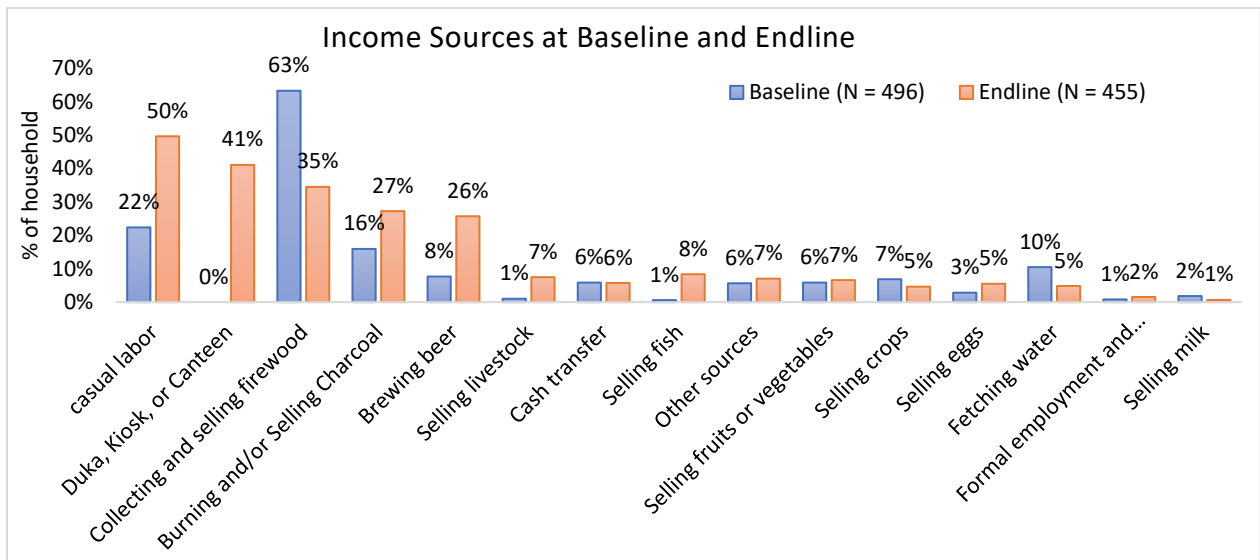


Figure 5: Income Source

Income diversification is promoted as one of the key strategies to address food insecurity. Income diversification improved with time from baseline. In terms of the number of income sources, results show that 69% of participants have two or more sources of income, a 23% increase from baseline (Figure 6 below).

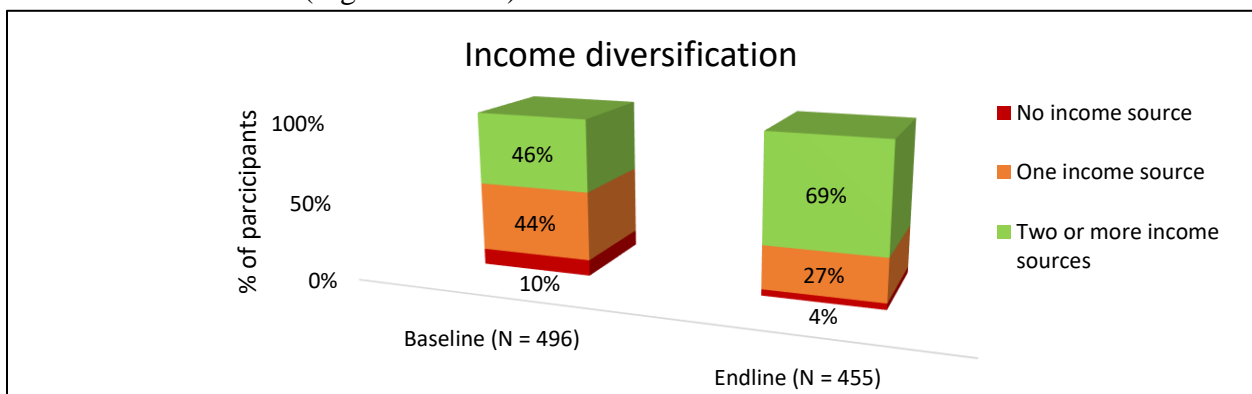


Figure 6: Income Diversification

Following income diversification among households, on average, the amount of income generated per household significantly increased from about UGX 18,620 to over UGX 116,705

per month. Even though casual labor (less sustainable source) was mentioned by a majority of participants (50%) as a source of income, households that mentioned kiosks or canteens as their source earned more compared to those engaging in casual labor. For instance, on average, a household earned UGX 68,267 from kiosks and canteens. This was an improvement given that no participant mentioned kiosks or canteens as a source of income at baseline. Only about 7% of households reported receiving income from livestock sales. However, on average, households' income from this source was the highest (UGX 315,735) at endline (from UGX 39,320 at baseline) (Table 5).

Table 5: Income Amount by Sources

Sources of income	Baseline		Endline	
	%	Average amount earned	%	Average amount earned
Selling livestock	1.0	39,320	7.5	315,735
Formal employment and salaried labor	0.8	70,667	1.5	228,000
Pension	0.0		0.2	225,000
Cash transfer	5.8	32,328	5.7	118,462
Brewing beer	7.7	30,947	25.7	80,060
Duka, kiosk, or canteen	0.0		41.1	68,267
Other sources	5.6	9,232	7.0	56,250
Selling crops	6.9	13,147	4.6	51,476
Burning and/or selling charcoal	15.9	15,646	27.3	37,935
Selling fish	0.6	9,000	8.4	30,605
Selling milk	1.8	7,189	0.7	25,167
Casual labor	22.4	9,996	49.7	23,398
Selling fruit or vegetables	5.8	5,497	6.6	18,000
Collecting and selling firewood	63.3	10,113	34.5	17,182
Fetching water	10.5	7,573	4.8	6,255
Selling eggs	2.8	3,250	5.5	4,044

In numerous FGDs with REAP participants, the issue of improved financial empowerment was a recurring theme. Interviewees consistently over-emphasized how participating in the REAP program brought them financial freedom. Significantly, the BOMA businesses earned participants substantial income, and this improved their saving power in the BOMA savings groups. In the words of one interviewee:

“I have bought goats and chicken that are for my household. So that means my income has increased compared to before, and this makes me feel more empowered financially, unlike before.”

Food Security

Food security is a priority area of interest because it indicates if REAP participants can meet the basic food consumption needs of their families. It provides insight on the food security of a participant and her household. About 62% of households reported no child going to bed hungry in the one month prior to the survey. This was a significant improvement (by 28%) from baseline (Figure 7).

Children's acute and chronic health may be significantly impacted by food insecurity in both direct and indirect ways. Poorer weight outcomes and immune system functioning may result from changes in food quantity or quality or disruptions of eating habits in situations of very low food security.⁴ From FGDs, it was apparent that the REAP model greatly improved the health of children in the household, and apart from not going to bed hungry, most households could afford three or more meals per day for their children.

“I can now afford food for my children, even porridge they can take in the morning, have lunch then supper as well, which has greatly improved the health of my children.”

In addition, 72.1% of households reported adults consuming at least two meals a day at endline, an improvement from 57.4% at baseline.

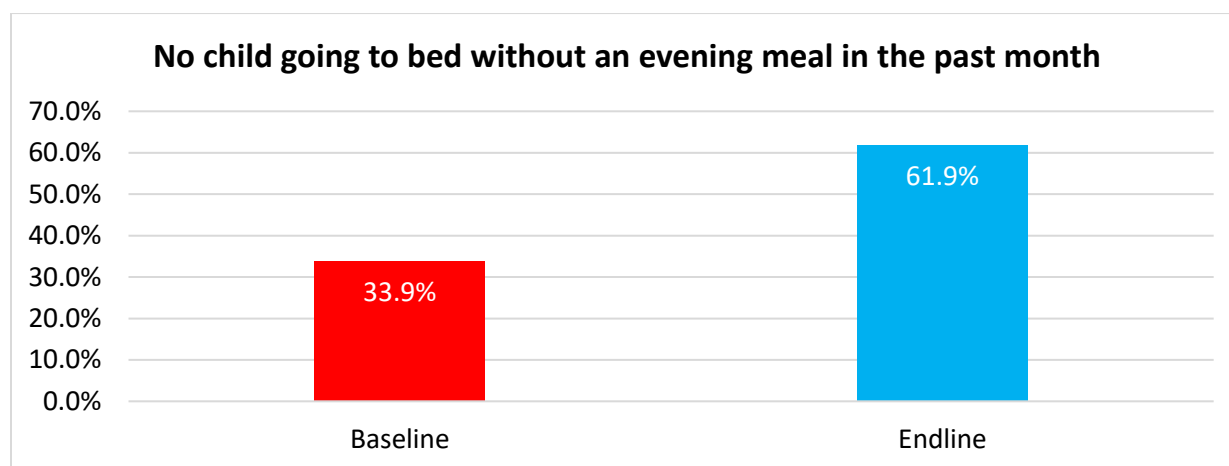


Figure 7: Child Hunger

Food Consumption Scores

One of the food security outcome indicators that was considered is the FCS. The FCS is a composite score based on dietary diversity, food frequency (on a seven-day recall period), and relative nutritional importance of different food groups.⁵ According to the outcome of this assessment, 69% of households had a borderline to poor FCS and 31% had an acceptable FCS.

⁴ <https://www.ers.usda.gov/webdocs/publications/90023/err-256.pdf>.

⁵ <https://documents.wfp.org/stellent/groups/public/documents/ena/wfp196627.pdf>.

This is an improvement from baseline where a higher proportion of households (81%) had poor to borderline scores while a lower proportion (only 19%) had acceptable scores. The low percentage of acceptable FCSs among households could be due to reported challenges such as poor harvests, increased food prices, and insecurity during the implementation period.

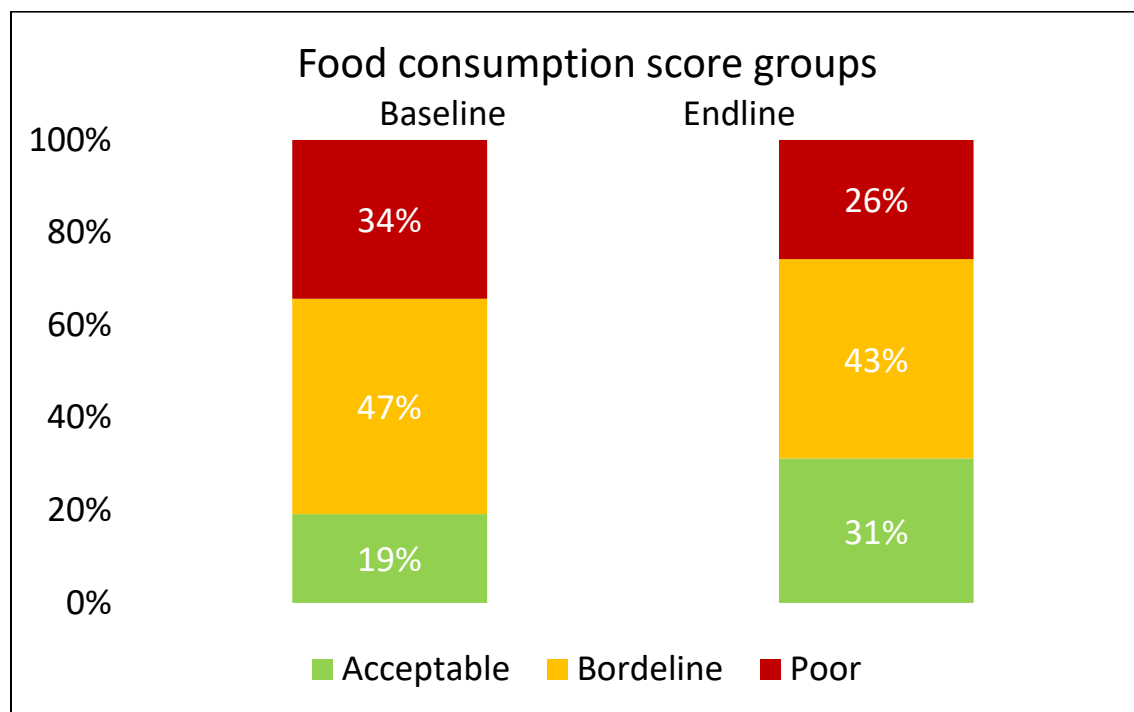


Figure 8: Comparing Food Consumption Scores by Survey Period

Based on this indicator, disaggregation by sub-county revealed worse food insecurity situations among households in Iriiri sub-county compared to other sub-counties. Specifically, a total of 83% of households in Iriiri reported poor to borderline FCSs, which is 26% higher than the proportion of households in Matany (the sub-county with the best FCSs), which reported 57% of households with a poor to borderline FCS.

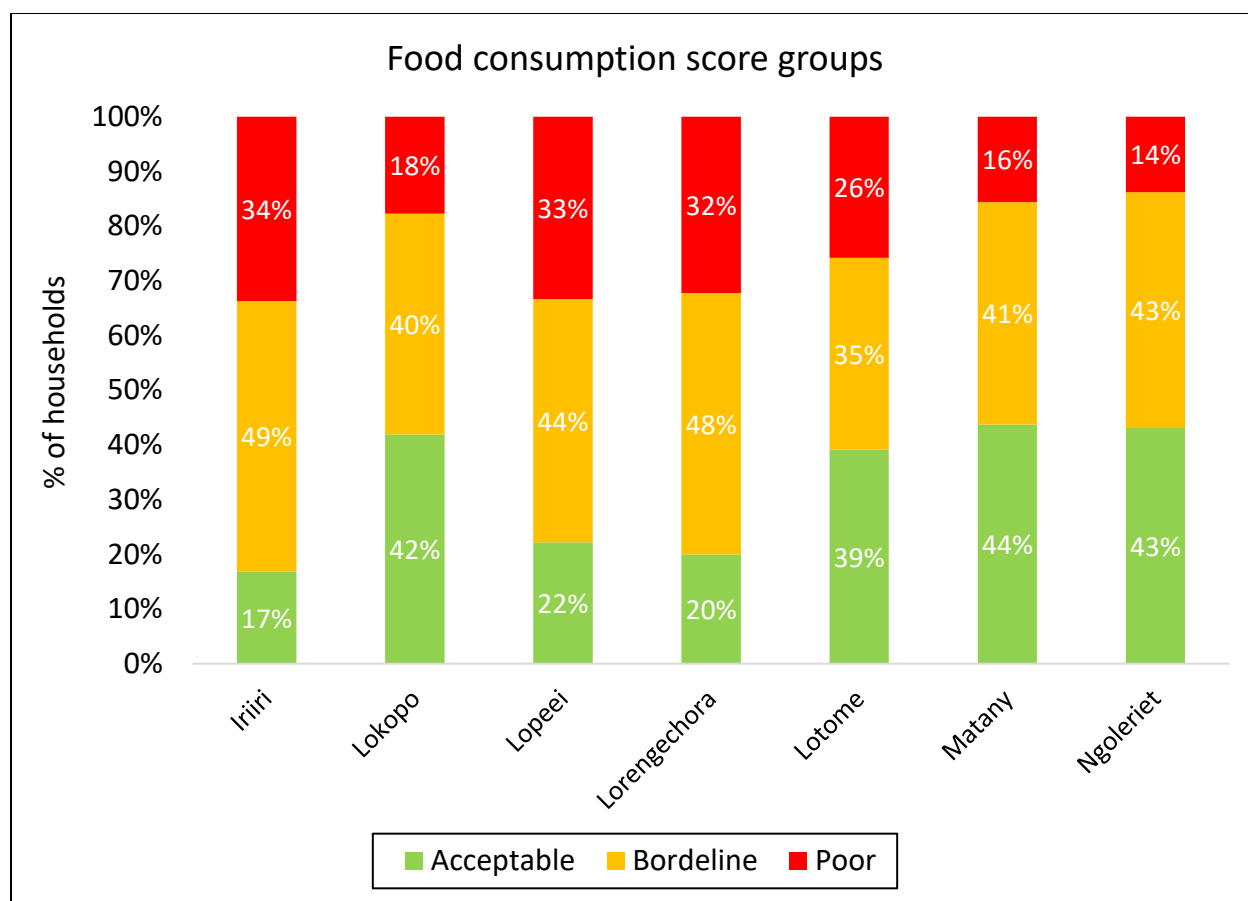


Figure 9: Comparing Food Consumption Scores by Sub-County

Household Food Insecurity Access Scale

The other outcome indicator that was used to assess the food security situation is the Household Food Insecurity Access Scale (HFIAS). This indicator utilizes the idea that the experience of food insecurity (access) causes predictable reactions and responses that can be captured and quantified through a survey and summarized in a scale.⁶ Similar to FCS, the assessment results of HFIAS reveal a huge improvement in the food security situation. Specifically, the proportion of households that were severely food insecure (access) reduced from 92% (at baseline) to 52% at endline.

⁶ https://www.fantaproject.org/sites/default/files/resources/HFIAS_ENG_v3_Aug07.pdf.

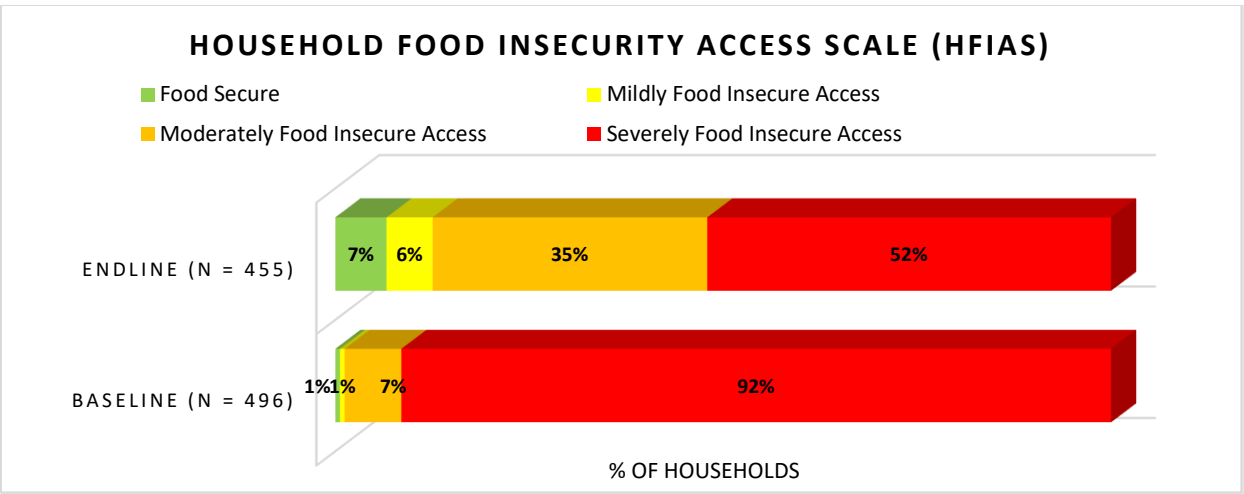


Figure 10: Comparing Household Food Insecurity Access Scale by Survey Period

Applying the Integrated (Food Security) Phase Classification’s (IPC) 20% rule on the above two food security outcome indicators, the surveyed participants would be classified as “emergency.” In other words, even though improvement has been observed since baseline, households among the sampled participants still have large food consumption gaps or are only able to mitigate large food consumption gaps by employing emergency livelihood strategies (such as selling their last female animals). Based on this, elevated levels of humanitarian need can be expected to persist.⁷ It should also be noted that the data was collected during the lean season as farmers started working on the land and when most food was depleted owing to a poor previous harvest.

Table 6: Comparing Food Security Indicators

Food security indicators	Baseline	Endline	p-value
Mean Food Consumption Score (out of 112)	27.7	30.8	0.000*
Mean Household Food Insecurity Access Score (out of 27)	12.0	9.8	0.000*

* Significant at 5%

As stated earlier, households that had more diversified income sources reported higher income amounts and thus, better food consumption levels. For instance, households with an acceptable FCS reported an average income of about UGX 141,956; those with borderline FCSs reported an average income of about UGX 128,878; and those who had poor FCSs reported the least amount of income of about UGX 65,667 (Table 7). Similarly, the higher the income, the better the HFAS (Table 8). The survey findings therefore recommend scaling up interventions that

⁷ https://www.ipcinfo.org/ipc/technical/manual_en.

increase income diversification on more sustainable sources such opening kiosks, canteens, farming, and livestock keeping.

Table 7: Average Household Income by FCS

	Average household income (UGX) at endline	p-value
Acceptable	141,956	0.009*
Borderline	128,878	
Poor	65,667	

* Significant at 5%

Table 8: Average Household Income by HFIAS

	Mean (UGX)	p-value
Food secure	221,983	0.004*
Mildly food insecure access	188,519	
Moderately food insecure access	118,345	
Severely food insecure access	94,083	

* Significant at 5%

Livestock Ownership and Control

Livestock plays a critical role in the livelihoods of the Karamoja community as well as the regional and the national economy. Owning livestock continues to be one of the primary income-generating activities for many households in the Karamoja region.⁸ Thus, it is anticipated that participants will keep making investments in cattle as this is the traditional source of wealth and savings in the region. Participants in REAP were asked, as part of the SOLI, to state how many of each of the five types of livestock they own. These numbers were then converted to Tropical Livestock Units (TLU), which are livestock numbers converted to a standard unit using conversion factors specific to each animal: camels are converted by a factor of 1, cattle by a factor of 0.7, donkeys by a factor of 0.5, sheep/goats by a factor of 0.1, pigs by a factor of 0.2, and chickens by a factor of 0.01.⁹

Insecurity poses a major challenge to keeping livestock in Karamoja.¹⁰ However, results from the survey (as shown in Table 9 below) indicate that the proportion of households owning livestock increased significantly from baseline to endline. For instance, the proportion of households owning cattle increased from 11% at baseline to 28% at endline.

⁸ https://karamojaresilience.org/wp-content/uploads/2021/05/karamoja_livestock_market_report_final.pdf.

⁹ Jahnke, H.E. 1982. Livestock Production Systems in Livestock Development in Tropical Africa. Kiel, FRG: Kieler Wissenschaftsverlag Vauk.

¹⁰ <https://www.theeastafrican.co.ke/tea/news/east-africa/erratic-rains-drought-leave-karamoja-hungry-3541072>.

Table 9: Household Livestock Ownership

Type of livestock owned by the household	Number of households that own different livestock		
	Baseline (%)	Endline (%)	p-value
Cattle	11.1	27.9	0.0000*
Shoats	15.9	33.8	0.0000*
Donkeys	0.0	1.8	0.0016*
Chickens, ducks, and turkeys	27.0	45.3	0.0000*
Pigs	0.0	0.7	0.0256*

* Significant at 5%

Table 10: Average Number of TLU Owned or Controlled by the Participant

Type of livestock owned by the household	Livestock ownership & TLU			
	Baseline		Endline	
	Ownership (%)	TLU	Ownership (%)	TLU
Cattle	11.1	1.15	27.9	3.24
Shoats	15.9	0.44	33.8	0.072
Donkeys	0.0		1.8	2.75
Chickens, ducks, and turkeys	27.0	0.03	45.3	0.06
Pigs	0.0		0.7	0.47

Savings

To ensure that participants graduate from REAP with a foundation to endure shocks such as drought and unexpected medical bills, establishing savings for participants is a priority for BOMA. Among pastoralist communities, savings are compiled through livestock. However, if there is disease outbreak or drought, savings can easily be quashed, leaving people without savings. REAP participants are encouraged to save with their BOMA savings groups, BOMA business groups, and on their own.

Before the commencement of this project, saving was not thought of by many participant households. However, over the life of the project, a significant improvement in savings was noted. During FGDs with REAP participants, the ability to save was a recurring theme. A majority of participants could not hide their joy when it came to the drastic steps they have made since they joined the program. Below are some of the responses from FGDs.

“There was no saving. I used to save nothing because I used to buy things for my house at once with all the money.”

“I am now saving in two groups (SILC), which has increased my savings. I save UGX 5,000 per week in one group while in another group I save UGX 20,000. So that means my savings has increased, and I am able to save now more than one saving group.”

Overall, there was significant improvement in the number of participants accessing and creating savings ($p < 0.05$). At the onset of the project, only 9% of participants reported having cash savings, and 22% were part of a savings group. By endline, however, this changed by a huge margin whereby 96% of participants reported having saved in a saving group, 27% saved in their own business, and 39% had cash savings.

Table 11: Proportion of REAP Participants with Savings in Various Locations.

Saving avenues by the participants	Number of participants who have savings		
	Baseline (%)	Endline (%)	p-value
Cash savings (house)	8.9	38.9	0.0000*
Savings group	116 (23%)	438 (96%)	0.0000*
Merry-go-round or ROSCA	0.2	1.8	0.0016*
Mobile money	0.0	1.3	0.0256*
Own business	0.6	26.6	0.0000*
Loans to someone that has not yet been repaid	3.2	16.3	0.0000*

* Significant at 5%

Due to the non-normal distribution of savings by participants, median savings was considered. Results showed that the median savings increased by more than 10-fold across various savings platforms. For instance, median cash savings increased from UGX 5,000 during baseline to UGX 50,000 at endline. This is a clear indication of the positive impact that the REAP program has had on participants.

Table 12: Amount of Savings

Savings platforms	Median savings (UGX)	
	Baseline	Endline
Amount of cash savings	5,000	50,000
Amount of savings with a savings group	8,000	80,000
Amount of savings with merry-go-round or ROSCA	3,000	25,000
Amount of savings in mobile money	-	30,000
Amount of savings in own business	5,000	50,000
Amount of savings given as loan to someone and has not yet repaid	10,000	50,000

Loans

Besides building savings, accessibility to credit is a crucial REAP output that gives participants access to funds for emergencies, business investments, and paying for school expenses. Using monthly monitoring data, the trends in the amount of loans issued was analyzed and presented below (Figure 11).

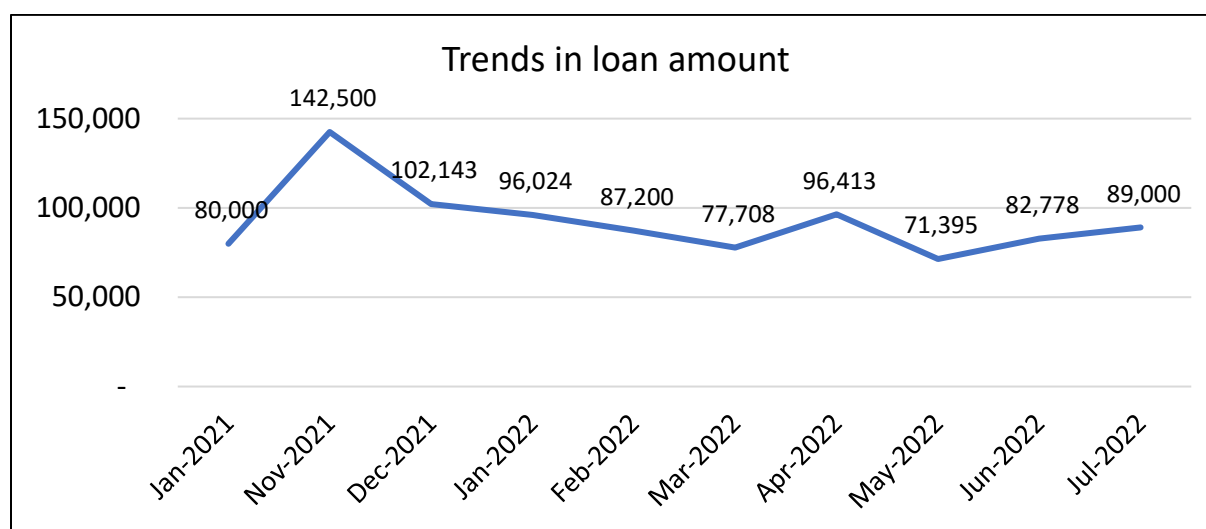


Figure 11: Trends in Loan Amount Taken

According to monitoring data, the highest average loan amounts went toward business expansion, followed by education, medical, transport, and funeral expenses, in that order.

Table 13: Reason for Taking Loan

Reason for taking loan	Average loan amount
Business expansion	104,856
Education	89,211
Medical	68,250
Transport	38,182
Funeral	10,000

Human Capital Investment

Data linked to human capital investment was collected with an emphasis on medical service spending and expenditures as well as school enrollment and related costs. High human capital investment demonstrates that families can afford to pay for their children's education and medical costs. Since they show a participant's capacity to support her family, household expenditures are utilized to assess financial changes in participating households. Participants were asked questions regarding school and medical expenditures for the past year.

Only 27% of households paid school fees within the one year prior to the baseline assessment, and the proportion stood at 40% during the endline assessment. Thirty-five percent of households had withdrawn children from school in the one year prior to baseline against 20% at endline.

In the year prior to baseline and the year prior to endline, an equal proportion of households (83%) had at least one member of the household seek medical treatment. During the same timeframes (i.e., in the one year prior to both baseline and endline), 29% and 19%, respectively, of participants had forgone medical care when sick.

Table 14: Human Capital Investment

Item	Number of participants who said yes to the questions on human capital investment		
	Baseline	Endline	p-value
Has your household paid school fees in the past year?	27.2	39.8	0.0000*
Has any child in your household stayed out of or withdrawn from school in the past year?	34.9	19.8	0.0000*
Have you or any members of your household gone to a health center, hospital, dispensary, chemist, or bought medicine in the past year?	82.7	83.3	1.0000
Have you or any members of your household foregone medical care when sick in the past year?	29.2	19.1	0.0003*

* Significant at 5%

The median number of children for whom households paid school fees within the one year prior to assessment was one child at baseline and two children at endline.

Lack of funds continued to be the major contributor of children either not enrolling in school or dropping out of school. However, the proportion of children who either failed to enroll or dropped out due to lack of funds reduced from 94% during baseline to 78% during endline. COVID-19 also affected non-enrollment and dropout rates, affecting 6% of households in the endline assessment. There was a high number of school-going children who dropped out or failed to enroll in school because they either needed to work or they were looking after livestock. This could be attributed to the prolonged closures of schools (because of COVID-19 restrictions and measures).

Table 15: Reasons for School Dropout or Non-Enrollment

Reasons for child not enrolling or dropping out of school	Baseline (%)	Endline (%)
Lack of funds	94.2	77.8
Needed to work	2.3	13.3
Looking after livestock	0.0	11.1
Sickness	1.2	3.3
Assisting in household chores	1.2	4.4
COVID-19	0.0	5.6

The median expenditure on school fees stood at UGX 15,000 during baseline and UGX 30,000 during endline. On medical expenses, the median spending was UGX 8,000 during baseline and UGX 45,000 during endline. Little or no assistance from well-wishers was received by households on school or medical expenses.

Table 16: Expenditure

Areas where money is spent	Median spending (UGX)	
	Baseline	Endline
What was the total amount of money paid for school fees, school expenses, and transport to school by the household in the past year?	15,000	30,000
What was the total amount of money paid for school fees, school expenses, and transport to school by others in the past year?	0	0
What was the total amount paid for medical fees, medicine, and transport to the hospital by the household in the past year?	8,000	45,000
What was the total amount of money paid for medical fees, medicine, and transport to the hospital by others in the past year?	0	0

Gender Dynamics

Cash can provide a pathway to women’s empowerment and gender equality. As women gain access to greater income, their household financial contributions increase, potentially resulting in increased household decision-making authority. In a variety of country contexts, women’s control over earned income and household spending is associated with expenditure and consumption patterns that tend to favor children, such as increased spending on health care, childcare, and children’s clothing and education.¹¹

The survey collected indicators on gender roles and decision-making practices related to buying food for the household, self-earned cash, child health and nutrition, income generated from livestock, and crop farming.

According to the survey findings, the intervention has resulted in improvement of female participation in income-generating activities such as livestock rearing and cash crop farming. For instance, 40% of surveyed women reported having participated in livestock rearing at endline, which increased from 14% at baseline. Out of 40% that reported participation in livestock rearing, about 86% provided input on decision-making regarding how income generated from livestock rearing was being used. There was also an increase (by 3%) in the proportion of women that participated in cash crop farming at endline compared to the baseline figure of 14% of surveyed women.

Table 17: Participation in Livestock Rearing

Did you participate in livestock rearing in the past 12 months?	Baseline (%)	Endline (%)
No	86.3	60.4
Yes	13.7	39.6
How much input did you have in decisions on the use of income generated from livestock rearing?	(%)	(%)
No input	4.3	5.6
Input into very few decisions	39.1	5.0
Input into some decisions	33.3	25.0
Input into most decisions	14.5	23.9
Input into all decisions	8.7	32.2
No decision made	0.0	8.3

¹¹ Quisumbing, Agnes R., and John A. Maluccio. 2000. Intra-household allocation and gender relations: New empirical evidence from four developing countries.

Table 18: Participation in Crop Farming

Did you participate in cash crop farming (crops that are primarily grown for sale) in the past 12 months?	Baseline (%)	Endline (%)
No	86.3	82.9
Yes	13.7	17.1
How much input did you have in decisions on the use of income generated from cash crop farming?	%	%
No input	5.7	0.0
Input into very few decisions	44.3	10.3
Input into some decisions	24.3	21.8
Input into most decisions	15.7	17.9
Input into all decisions	8.6	46.2
No decision made	1.4	3.8

Moreover, joint decision-making improved traditionally female roles. For instance, the proportion of households where decisions on children’s health and nutrition were jointly made by the head of the household and spouse increased at endline from 22% to 32%. In addition, more household heads were jointly making decisions about purchasing food with their spouses (28.6%) compared to baseline where only 20% reported joint decision-making on food purchase.

Table 19: Decision Making About Children’s Health and Nutrition

Who usually makes decisions about your child(ren)'s health and nutrition?	Baseline (%)	Endline (%)
Yourself	54.2	48.2
Spouse/partner	17.3	10.8
You and spouse/partner jointly	22.2	32.1
You and others jointly	5.4	8.6
Other	0.8	0.2

Table 20: Decision Making About Buying Household Food

Who usually makes decisions about buying food for the household?	Baseline	Endline (%)
Yourself	56.5	51.6
Spouse/partner	16.5	10.8
You and spouse/partner jointly	20.0	28.6
You and others jointly	6.3	8.8

Other	0.8	0.2
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Individuals (either men or women) living in poor and financially insecure households are more likely to experience domestic violence than better-off households.¹² The REAP model contributed to solving protection issues that existed within households. During FGDs, a participant confirmed that there was a lot of fighting between husbands and their wives.

“My family was suffering, there was too much fighting between me and my husband, my family was in darkness and even when a child falls sick, I could not even afford to take the child to the hospital.”

“Domestic violence was rampant in my household as my husband could beat me every day since I was only depending on him for everything, and it was worse—I had a co-wife, so a man goes where he thinks he can get something, and he abandoned me with all the children...until I resorted to burning and selling charcoal for a living”

The REAP model empowered women financially, it brought peace and harmony in the households, and women were now respected. They were able to afford food, medicine, and even take their family members to the hospital whenever they felt sick.

“The money they sent, which was meant for supporting, is the one which helped me buy food for my children. Even my conflict with my husband stopped since I could also now provide for my family.”

Despite the above-mentioned positive achievements, there is a need for increased male sensitization on female empowerment. During FGDs, some participants cried out on the violence meted out to them by their husbands because of participating in the REAP model.

“My husband is a very jealous man. After I joined the REAP project, he was not happy, saying I am now proud and rich. Then he started beating me almost every day.”

Group Membership

The Membership Theory of Poverty (MTP) places much emphasis on how group affiliations influence health and social-economic outcomes. Numerous studies demonstrate that persons who join more social groups have greater psychological health, are healthier, and live longer than those who do not.¹³ This assessment looked at how REAP beneficiaries are engaged in group memberships. The BOMA model puts a lot of emphasis on beneficiaries working in a group to

¹² http://eprints.lancs.ac.uk/73772/1/Towers_J_Safe_Article_Feb_2015.pdf.

¹³ Holt-Lunstad J, Smith TB, Layton JB. Social relationships, and mortality risk: a meta-analytic review. *PLoS Med.* 2010;7(7). 10.1371/journal.pmed.1000316.

achieve better outcomes (improved savings culture, better income, reduced food insecurity burden).

The survey sought to investigate the available groups within the community and REAP beneficiaries' take on group membership. During baseline, local government was found to be the most common group within the community with over 97% of participants being aware of its existence.

A significant reduction in the number of civic and charitable groups was recorded at endline as compared to baseline. During baseline, 9% of participants had said there are civic or charitable groups in their community, a figure that reduced to 5% during the endline assessment.

There was a notable increase (from 39% during baseline to 76% during endline) in the number of credit or microfinance groups (SACCOs/merry-go-rounds/SILC groups) in the community. The number of trade and business associations also grew from 9% during baseline to 16% during the endline assessment.

In terms of active membership, the majority of participants do not belong to community groups. During baseline, most participants (30%) were actively involved in religious groups. The active membership of other groups stood at less 10%. BOMA's model is structured on group membership where REAP beneficiaries are required to form a business group of three individuals. In line with this, there was an observed significant increase in the number of participants who are active members of credit or microfinance groups (including SACCOs/merry-go-rounds/ SILC groups). Only 9% of the participants were active members of a credit or microfinance group at baseline. This figure rose to 68% during the endline assessment ($p < 0.05$).

Table 21: Proportion of REAP Members Who are Active Group Members

Group	Active member of the group		
	Baseline (%)	Endline (%)	p-value
Agricultural/livestock/fisheries producer's group (including marketing groups)	3.2	6.2	0.0248*
Water users' group	4.6	6.4	0.4984
Forest users' group	3.4	2.4	0.3258
Credit or microfinance group (including SACCOs/merry-go-rounds/SILC groups)	9.3	67.9	0.0000*
Mutual help or insurance group (including burial societies)	9.5	1.1	0.0000*
Trade and business association	0.4	5.3	0.0000*
Civic groups (improving community) or charitable group (helping others)	2.2	0.2	0.0090*
Local government	3.4	3.7	0.4005
Religious group (e.g., Mother's Union)	30.4	12.3	0.0000*
Mother's group	10.5	16.3	0.0058*
Youth group	3.4	4.4	0.4005
Farmers'/cattle rearing cooperative	2.2	3.1	0.3217
Communal grazing land users' group	1.4	0.2	0.0411*
Communal natural resources group (Area Land Committee)	3.0	3.5	0.6635
Disaster planning/response group (Resilience Action Committee)	2.2	3.1	0.3863
Peace committee	8.5	5.1	0.0384*
Other women's group (only if it does not fit into one of the other categories)	1.6	2.9	0.1743

* Significant at 5%

Index of Social Capital

The network of connections that exist between the members of a given society, allowing that society to run smoothly, are referred to as social capital.¹⁴ It entails the efficient functioning of social groups through interpersonal interactions, a common sense of identity, a shared

¹⁴ Bowles, S.; Gintis, S. (2002). "Social Capital and Community Governance". *The Economic Journal*. **112** (483): 419–436.

understanding, shared norms, shared values, trust, collaboration, and reciprocity.¹⁵ The value of resources, both tangible (such as public spaces and private property) and intangible (such as actors, human capital, and people), as well as the influence that these relationships have on the resources involved in each relationship and on larger groups, are all measured by social capital. Although this does not fit with how it has been assessed, some have described it as a type of capital that generates public goods for a common goal.

In this survey, social capital for bridging and bonding was evaluated in connection to a variety of relationship and network characteristics.

The index of social capital is much stronger in the endline assessment as compared to the baseline assessment. The endline assessment scored highest in all eight items regarding the index of social capital.

The question on whether relatives living outside the participant's community will be able to lean on them for financial or food support during their difficult times scored highest (87%) for the endline survey followed by the question that asked whether the participant's household will be able to lean on relatives living in their community for financial or food support during difficult times at 82%.

Few households (30% at endline and 23% at baseline) will be able to lean on non-relatives living outside their community for financial or food support during tough times. Only 33% and 20% of participants in the endline and baseline surveys, respectively, reported that non-relatives living outside their community may be able to lean on them for financial or food support during their tough times.

A huge gap was observed between the endline and baseline assessments in relation to whether non-relatives living in the household's community will be able to lean on them for financial or food support during their tough times. From survey results, 69% of participants in the endline survey confirmed that non-relatives would be able to lean on them and only 37% of participants confirmed the same at baseline (see Figure 12 and Table 22).

¹⁵ Stam; et al. (2014). "Social capital of entrepreneurs and small firm performance: A meta-analysis of contextual and methodological moderators". *Journal of Business Venturing*. 29 (1): 152–173. [doi:10.1016/j.jbusvent.2013.01.002](https://doi.org/10.1016/j.jbusvent.2013.01.002).

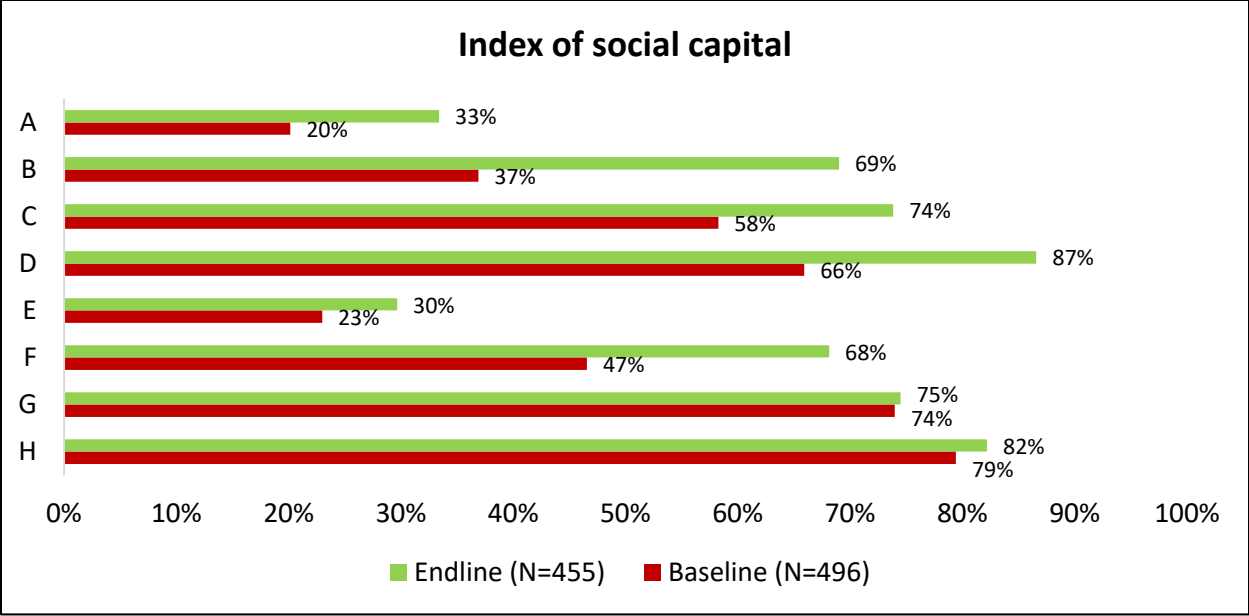


Figure 12: Comparing Index of Social Capital by Survey Period

Table 22 below presents the codes and labels used in the graph presented above.

Table 22: Coding the Index of Social Capital Items

Code	Label
A	Will non-relatives living outside your community be able to lean on you for financial or food support during their difficult times?
B	Will non-relatives living in your community be able to lean on you for financial or food support during their difficult times?
C	Will relatives living outside your community be able to lean on you for financial or food support during their difficult times?
D	Will relatives living in your community be able to lean on you for financial or food support during their difficult times?
E	Will your household be able to lean on non-relatives living outside your community for financial or food support during difficult times?
F	Will your household be able to lean on non-relatives living in your community for financial or food support during difficult times?
G	Will your household be able to lean on relatives living outside your community for financial or food support during difficult times?
H	Will your household be able to lean on relatives living in your community for financial or food support during difficult times?

On a scale of 0–100, the mean score for bonding social index (the strength of links within communities), was 64 at endline compared to 56 at baseline. The mean score during endline for bridging social capital, or the degree of linkages between various communities, was 66 on a scale of 0–100. The bridging capital index averaged 45 during the baseline survey. The overall index of social capital was 65 at endline against 50 at baseline.

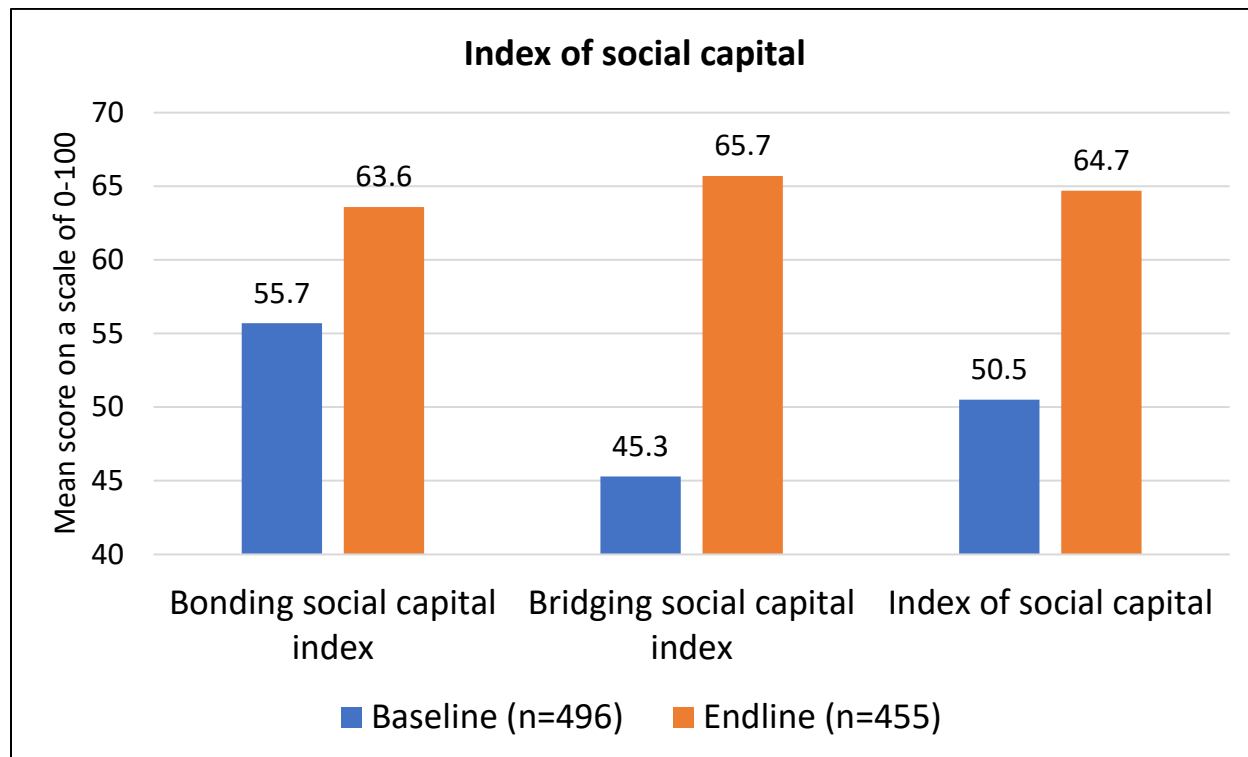


Figure 13: Social Capital Index

Water, Sanitation, and Hygiene

Water

Water has an impact on many facets of development and is connected to all Sustainable Development Goals (SDG). It promotes healthy ecosystems, fosters economic progress, and is important to life itself. In 2015, the United Nations General Assembly established 17 SDGs, one of which (SDG 6) is to "ensure availability and sustainable management of water and sanitation for all."¹⁶ Not only are poor hygiene, open defecation, and lack of access to safe water and sanitation systems leading causes of child mortality and morbidity, they also contribute to undernutrition and stunting, and act as barriers to education for girls and to economic opportunity for the poor.¹⁷ During the assessment, more than 80% of households in both the

¹⁶ United Nations (2018). [Sustainable Development Goal. 6. Synthesis report 2018 on water and sanitation.](#)

¹⁷ <https://www.unicef.org/media/91266/file/UNICEF-Strategy-for-WASH-2016-2030.pdf>.

baseline and endline assessments said they rely on tube wells or boreholes as their main source of drinking water.

Table 23: Main Source of Drinking Water

What is currently the main source of drinking water for members of your household?	Baseline (n=496) (%)	Endline (n=455) (%)
Piped into household	0.6	0.0
Piped into yard/plot	0.4	0.2
Piped water into public taps/standpipe	1.4	1.5
Tube well or borehole	83.7	94.9
Protected well	0.4	0.0
Unprotected well	1.8	0.7
Protected spring	0.6	0.2
Unprotected spring	2.8	0.2
Rainwater	1.4	0.0
Tanker Truck	0.2	0.0
Surface water	6.7	2.2

Participants were also asked to report on where the above mentioned water sources were located. From the results, there was an increase in the number of households having their main source of drinking water very close to their homestead. During baseline, only 7% reported having their main source of drinking water close to their homestead whereas at endline, 16% of participants reported the same. About 84% of households had their drinking water sources located elsewhere during endline, a decrease from 92% at baseline.

As defined by the Joint World Health Organization (WHO) & UNICEF Monitoring Programme (JMP), an unimproved drinking-water source is one that, by the nature of its construction, does not adequately protect the source from outside contamination, in particular by faecal matter. Unimproved drinking water sources include: unprotected (dug) wells; unprotected springs; carts with small tanks or drums; tanker truck-provided water; surface water (river, dam, lake, pond, stream, canal, irrigation channel); bottled water (because of potential limits on the quantity of water available to a household through this source, not the quality).¹⁸

¹⁸ <https://www.mdpi.com/1660-4601/17/17/6262/pdf>.

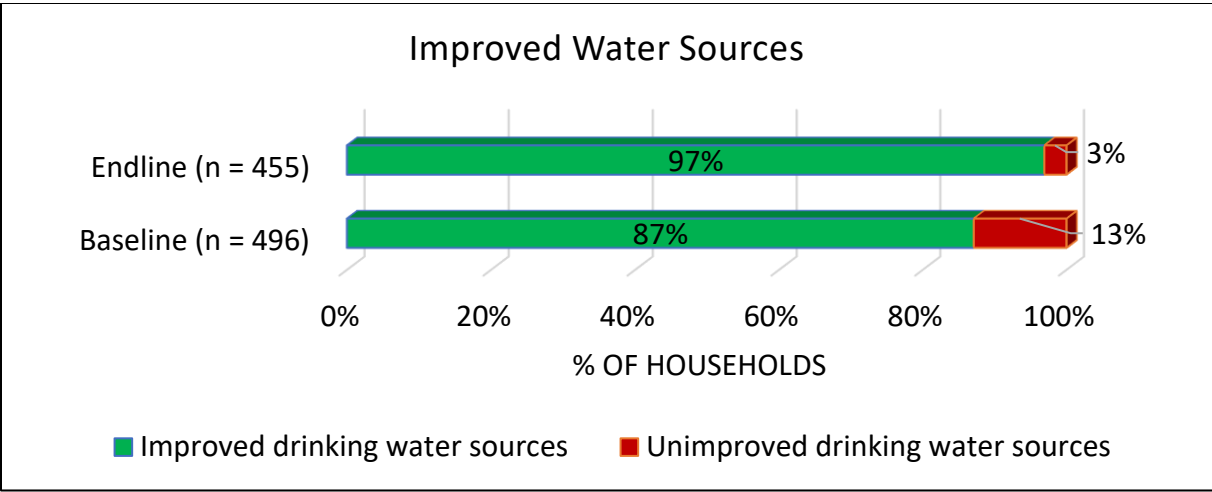


Figure 14: Improved Water Sources

Based on the above, about 97% of surveyed households reported having access to improved water sources at endline. This is a 10% improvement from the baseline value. This improvement can be attributable to Nuyok borehole rehabilitation interventions in implementation areas.

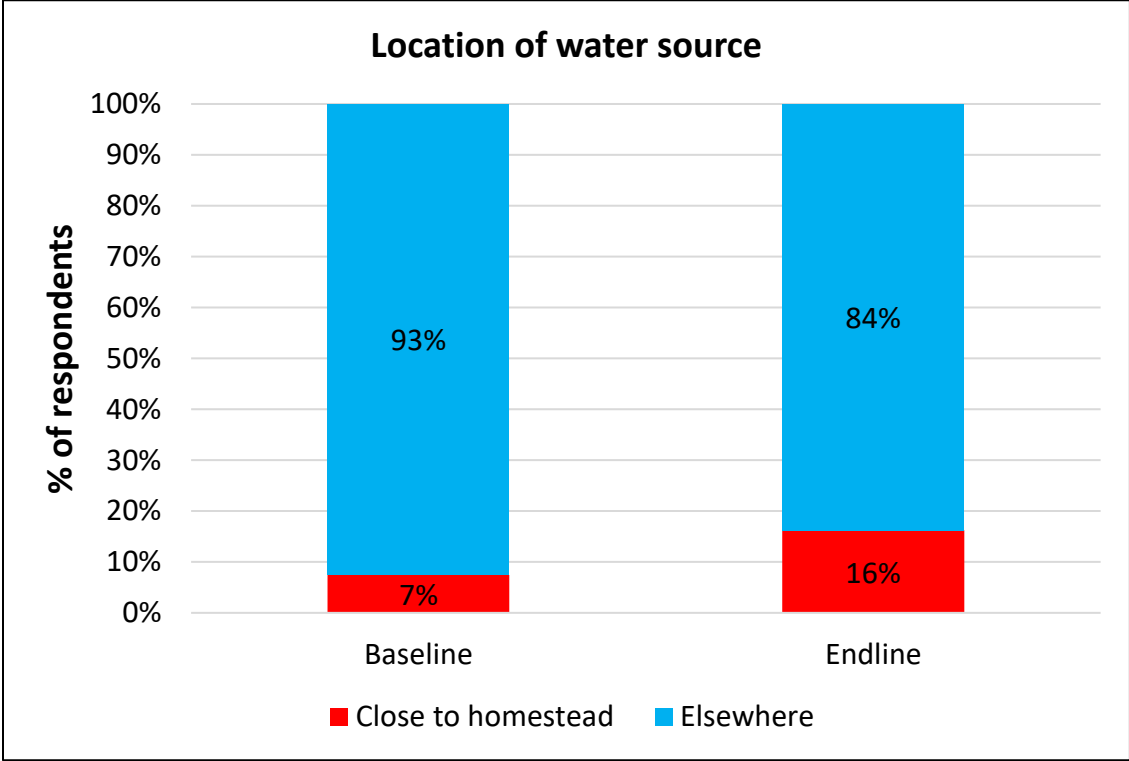


Figure 15: Location of Water Source

In comparison with endline, 46% of participants interviewed during the baseline period said it takes a few minutes to reach their main source of drinking water and to come back. This proportion increased to 62% during the endline assessment. On the same note, 54% and 38% in

the baseline and endline respectively, reported taking hours to get to their main source of drinking water and back. The reduction in time taken to fetch water can be explained by the increase in the proportion of households having their main source of water close to their homesteads as a result of Nuyok borehole rehabilitation interventions.

Participants were asked whether water is available from their main source all year. Sixty-four percent said yes during baseline, and the proportion increased to 67% during the endline assessment. However, when they were asked about the presence of water within the two weeks prior to the survey, 35% of participants at baseline reported unavailability of water for a day or longer. During endline, the proportion reporting unavailability of water reduced to 19%.

There was a decline in the proportion of participants reporting water treatment to make it safer to drink. At baseline, about 36% reported treating water, and at endline, 25% reported the same. The most common water treatment method used by participating households was boiling (disinfection via heating), which accounted for 66% at baseline and 72% at endline. Other water treatment methods practiced by households included filtration and chlorination (chemical disinfection).

To establish household water consumption and methods for the secure storage of water, study enumerators looked at every container used in the home for gathering and storing water for drinking and other domestic uses. The kind of container, the type of water stored (drinking, non-drinking, or both), the approximate volume of water, the state of cleanliness of the container, whether or not the container was covered, and the number of times the household collected water using the container were either asked or observed.

Overall, 48% of households in the endline survey mentioned that the most common type of water storage container were containers with a lid while at baseline, the use of open containers without a lid was common.

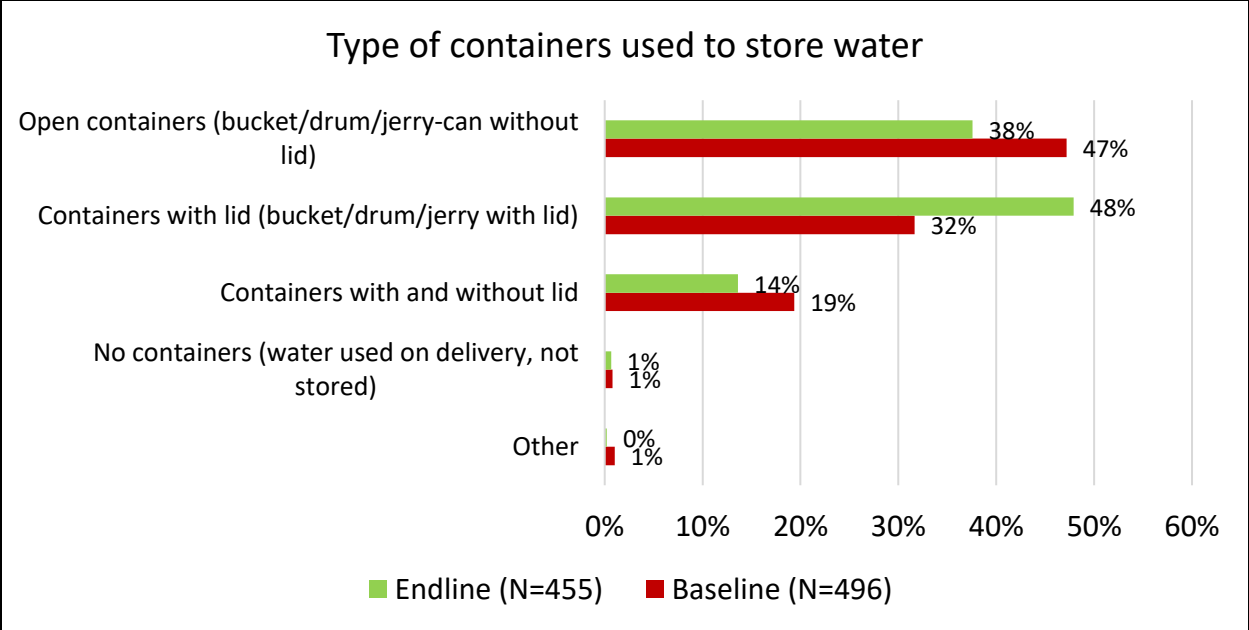


Figure 16: Type of Containers Used to Store Water

Sanitation

Interviews were conducted with participants regarding the several sanitation alternatives available to households, privacy concerns regarding the use of sanitation facilities, waste management, and observations of the actual use and hygienic condition of the latrines.

In the baseline and endline surveys, participants were asked where their household members go to defecate. At baseline, 73% reported using no facility (resorting to bush/field) followed by pit latrines without a slab/open pits (15%), pit latrines with a slab (6%), and dig and bury methods (5%). Similar trends were observed during the endline assessment were 62% reported no facility (resorting to bush/field) followed by pit latrines without slabs/open pits (31%).

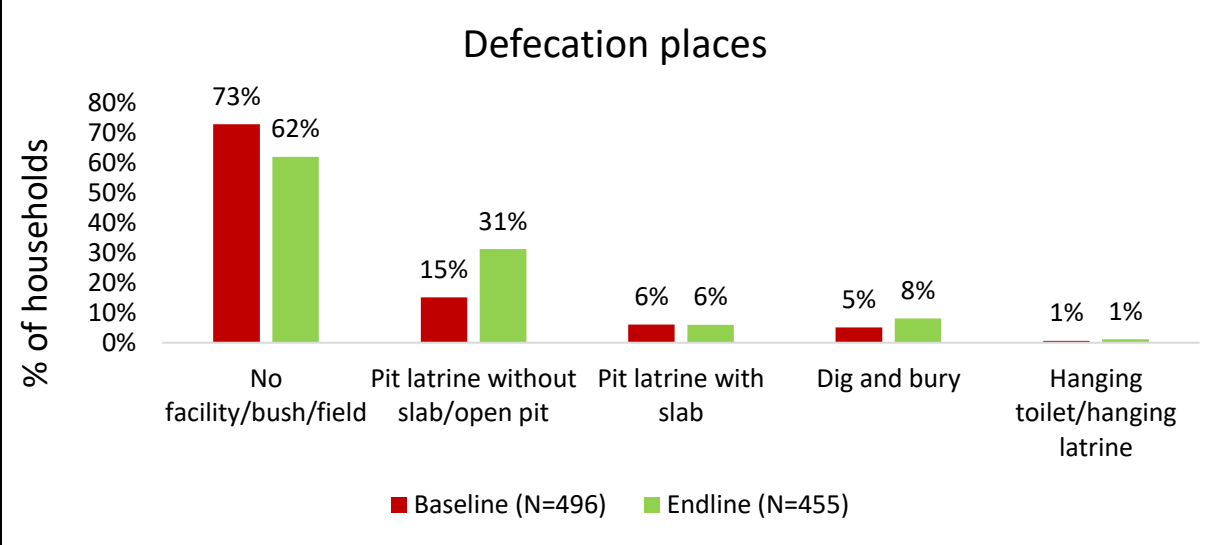


Figure 17: Defecation Places

On whether households share latrine facilities with other households, 81% of participants interviewed during baseline said they share facilities. Conversely, at endline, only 15% of participants said they were sharing latrine facilities with other households.

In all participant households, children were found to mostly use the dig and bury method for defecation and as such, they tended not to share with adult members of the household.

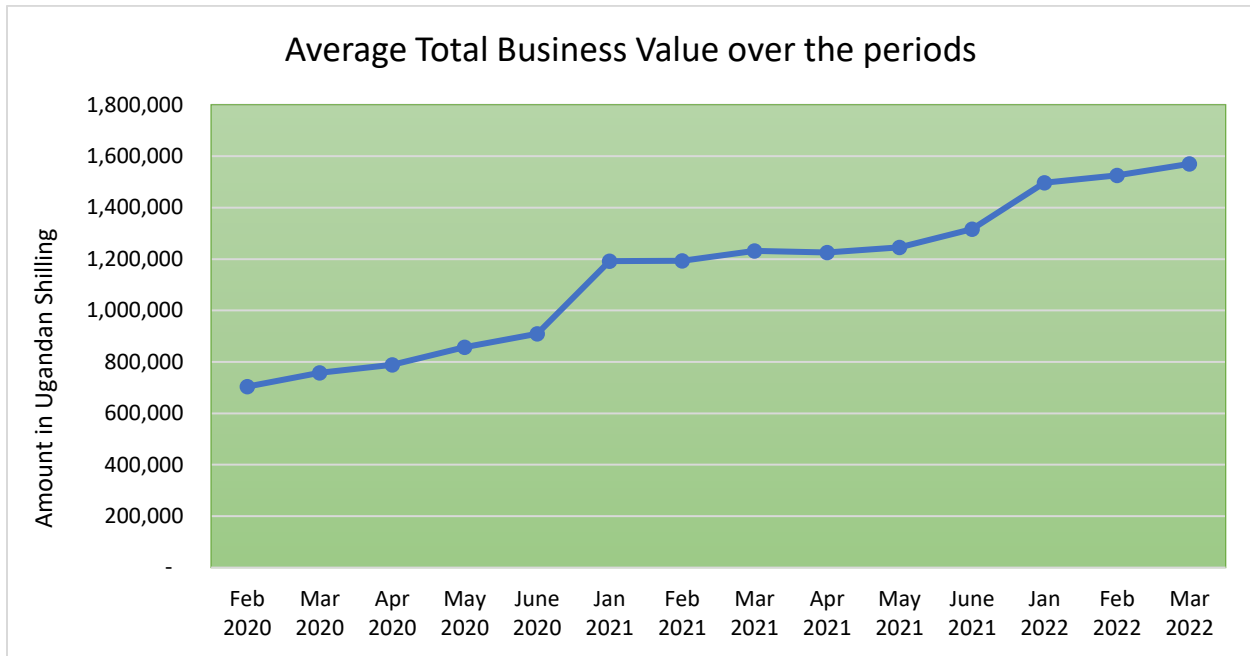


Figure 18: Trend in Business Value

Graduation at Endline

The BOMA graduation criteria are used to determine the percentage of REAP participants that graduate from extreme poverty after the two years of the program. To graduate, BOMA requires that participants satisfy six unique criteria in four categories—food security, sustainable livelihoods, shock preparedness, and human capital investment.

The following six mandatory criteria, in four categories, are used at endline to assess whether REAP participants have graduated out of extreme poverty:

Food Security

1. No child going to bed hungry in the last month.
2. Household members eat at least two meals a day in the past week.

Sustainable Livelihoods

3. The value of the BOMA business is 25% higher than the total conditional cash transfer.
4. Participant can access more than one source of income.

Shock Preparedness

5. Participant is a member of a savings group and has savings.

Human Capital Investment

6. All eligible children are attending primary school.

The percentage of participants meeting each criterion is measured at both baseline and endline to understand where the participants are before and after the implementation of REAP. The sustainable livelihoods criteria require the value of the BOMA business and therefore it is not applicable at baseline.

In Table 24 below, graduation rates are given for each graduation criteria for both baseline and endline periods.

Table 24: Graduation Criteria

Category	Criteria	Passing Rate: Total (n=496), (%) - Baseline	Passing Rate: Total (n=455), (%) – Endline
Food security	No child going to bed without an evening meal in the past month.	33.9	61.9
	Household members eat at least two meals a day in the past week.	57.4	72.1
Sustainable livelihoods	The value of the BOMA business is 25% or higher than the total conditional cash transfer.	N/A	45.5
Sustainable livelihoods	Participant can access more than one source of income.	46.4	68.9
Shock preparedness	Participant is a member of a savings group and has savings.	21.8	97.4
Human capital investment	All eligible children are attending primary school.*	20.0	39.0
Overall passing/graduating rate		N/A	60.0

Most households met food security criteria with 62% reporting no child going to bed without having a meal in the past one month prior to the survey while 72% reported household members consuming at least two meals a day.

Focusing on sustainable livelihoods, about 46% reported having achieved BOMA business value growth of at least 25%. Due to this low proportion reporting at least 25% in total BOMA business growth, further monitoring needs to be undertaken to establish the truth behind the low total business value recorded.

In terms of income sources, 69% of households reported having at least two sources of income, an increase of about 23% from baseline.

About 97% of surveyed participants were members of saving groups and reported having savings, which is a critical component of shock preparedness. This was a huge improvement from baseline where only 22% reported being members of a saving group and having savings. On average, savings made by the participants in saving groups increased from UGX 15,389 at baseline to UGX 96,304 at endline.

In addition, 39% of households reported that all children aged 6–12 were attending primary school at the time of survey, an increase of 19% from baseline.

The overall passing/graduating rates for all thematic areas (food security, sustainable livelihoods, shock preparedness, and human capital investment) set for REAP participants was computed. REAP participants are considered “passed/graduated” at the end of two years when they meet at least four simple criteria across the considered categories. About 60% of participants graduated.

Challenges

The pilot implementation of the REAP model has been impacted by several external events since baseline, and these are mentioned here as either enabling or impeding adoption. The COVID-19 pandemic was one of these external events, causing temporary school closures and mobility restrictions that had an impact on economic activities across the nation, not only in the Karamoja region. Grant disbursements were completed in late 2019, a few months before the first cases of COVID-19 were reported in Uganda.

The COVID-19 pandemic, which interrupted economic activity around the world, caused uncertainty and damage to the economic prospects of REAP participants by significantly affecting the livestock market systems and other business operations, mostly because of efforts to contain the pandemic's spread. On March 30, the president of Uganda enacted stringent rules governing the movement of public and private vehicles, the closure of marketplaces, and a nationwide curfew from 7:00 pm to 6:30 am. Individuals and households were disproportionately affected by these measures.

“COVID-19 also made it difficult to transport food to the markets for customers to purchase. So, this posed a big problem to us and our business.”

In addition to COVID-19 challenges, Karamoja region has experienced a resurgence in insecurity over the past few years. The insecurity situation in the region has affected business operations as well as farming activities. This influenced the poor FCSs and the business values. During FGDs, insecurity featured prominently. Below are comments made by selected participants in the FGDs.

“Another issue that is making it hard for us to operate our businesses is the problem of insecurity. We sell at daytime, but during night the thieves follow us demanding what we sold during the day.”

“For us, we started with a sorghum business. Then, from sorghum we tried livestock. However, insecurity (cattle raids) made it difficult for us to continue with a livestock business and so we abandoned it and started selling bedsheets.”

Nevertheless, the rampant insecurity (cattle raiding) in the region has made the participants diversify their income-generating activities. According to participants in the FGDs, it is no longer tenable to rely on livestock selling alone.

“We realized that we needed to do something else apart from selling livestock because we feared that raiders might take all our cattle and leave us with nothing.”

Other issues raised by the participants that affected the successful implementation of the pilot REAP model include poor weather conditions and the prohibitive costs of transportation, as well as the high cost of goods that made it difficult for participants to stock their shops.

Conclusions and Recommendations

Conclusion

Overall, the REAP program has shown success in meeting its immediate goals of increased availability of healthy foods for households and increased economic accessibility of healthy foods by increasing incomes. Participants were very satisfied with the trainings and other results of the program/intervention which enabled them to improve various aspects such as social and human capital investments, savings, gender equity, and livelihoods strategy diversification.

The findings of the endline survey suggest that the REAP Poverty Graduation intervention was instrumental in tackling the multiple challenges faced by the ultra-poor target population. The intervention not only improved income diversification and earnings/amount, but also led to introduction/increase of more sustainable and reliable sources of income (such as cash crop farming, livestock rearing, canteen businesses, and other trade) thereby increasing households' economic status and resilience to shocks which cause food insecurity.

Recommendations

With Nuyok as a DFSA, its main aim was to improve food security and nutrition for vulnerable rural families. REAP was introduced to contribute to the overall goal of Nuyok. The REAP endline assessment shows that even though much improvement has been observed since baseline, some households still have large food consumption gaps. This survey therefore recommends future programs to implement the REAP model at a greater scale to further improve the food security situation of households and prevent an increase in food consumption gaps. Expansion can be in the form of including more participants and increasing business capital.

Even though the pilot has been successful, and participants were satisfied with the program, there is room for improvement. For sustainability purposes, REAP can be implemented in conjunction with local institutions so that they can continue training participants on income-generating activities and business management, thereby enhancing income diversification and increased earnings after the close of the program.

Given the several factors that hindered participants' progress toward graduation, from COVID-19, to Foot Mouth Disease (FMD), to the ongoing insecurity since REAP's implementation, and the fact that the timing and circumstances for businesses to thrive may differ per group, consideration should be given to adapting program monitoring strategies according to the duration of progress of each household.

Lastly, despite improved peace and harmony within households, there is a need for increased male sensitization on female empowerment as some men feel threatened when their wives are empowered. It is important that interventions that empower women be coupled with programs that promote good household relations. The Male Change Agent approach implemented by Nuyok is a good example of a complementary activity.

Annexes

Annex 1: Indicator Performance Results Table

Indicator Title	Baseline		Target value	Endline	
	Point estimate	[95% C.I.]		Point estimate	[95% C.I.]
POVERTY					
PPI of 50% or more	95%	[93%, 97%]	85%	90%	[87%, 93%]
HOUSEHOLD FOOD INSECURITY ACCESS SCALE (HFIAS)					
% of households with food insecure access (severely food insecure)	92%	[90%, 94%]	50%	52%	[47%, 57%]
FOOD CONSUMPTION SCORE					
% in poor and borderline categories	81%	[77%, 84%]	60%	69%	[64%, 73%]
No child going to bed without an evening meal in the past month	34%	[30%, 38%]	70%	62%	[57%, 66%]
Household members eat at least two meals a day in the past week	58%	[53%, 72%]	75%	72%	[68%, 76%]
LIVELIHOOD ACTIVITIES					
% of households with more than one source of income	46%	[42%, 51%]	90%	69%	[64%, 73%]
% of households with more than two sources of income	21%	[17%, 24%]	70%	40%	[35%, 44%]
SAVINGS					
Do you have cash savings (money set aside for food emergencies, medical emergencies, school fees, or future purchases)?	9%	[7%, 12%]	50%	39%	[34%, 44%]
% of households with at least 100,000 UGX in cash savings	0%	NA	25%	12%	[9%, 15%]
GENDER DYNAMICS					

% of participants involved in self/joint household decision-making involving finances spending	81%	[77%, 84%]	90%	90%	[87%, 93%]
GROUP MEMBERSHIP					
% of participants participating in community group memberships (not including savings groups, as this is a requirement of REAP)	49%	[44%, 53%]	80%	77%	[73%, 81%]
INDEX OF SOCIAL CAPITAL AT THE HOUSEHOLD LEVEL					
% of households with social capital index of 50	61%	[57%, 66%]	75%	78%	[74%, 82%]
WASH					
% of households using improved drinking water source	87%	[84%, 90%]	95%	97%	[95%, 98%]
% of households using a basic sanitation facility	22%	[18%, 26%]	45%	38%	[34%, 43%]
HOUSEHOLD FOOD INSECURITY ACCESS SCALE (HFIAS)					
Mean HFIAS	12.0	[11.7, 12.41]	7.0	9.9	[9.4, 10.4]
LIVELIHOOD ACTIVITIES					
Average household income in the last 30 days	18620	[16517, 20724]	150000	116704	[97192, 136218]

Annex 3: Karamoja REAP Endline Protocol and Questionnaire.



REAP Baseline-
Endline Survey Protc



Nuyok REAP



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