

BOMA PROJECT

An Analysis of the Endline
Survey for the REAP Cohort
Funded Through the Bill and
Melinda Gates Foundation

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Table of Contents	
Executive Summary	2
Introduction	7
Background	7
The Rural Entrepreneur Access Project (REAP)	8
Purpose of the Report.....	10
Methods	10
Data Analysis.....	11
Results	12
Demographic Profile of Participants.....	12
Economic Outcomes	14
Business Performance.....	14
Savings and Loans	16
Savings	16
Loans	18
Household Income	20
Household Expenditures.....	23
Livestock Ownership.....	25
Priority Learning Themes	27
Household Decision Making	27
Leadership in the Community.....	30
Educational Opportunities for Girls	30
Household Food Security	33
Healthcare Use.....	35
Family Planning.....	37
Mobile Phone and M-Pesa Access and Usage	39
Graduation	42
Recommendations for Future Research	44
Conclusion	46

Executive Summary

The BOMA Project (BOMA) is a U.S. nonprofit and Kenyan non-governmental organization (NGO) with a proven track record, measurable results, and a transformative approach to alleviating poverty and building economic resilience in the arid and semi-arid lands (ASALs or drylands) of East Africa.

BOMA's Rural Entrepreneur Access Program (REAP) helps ultra-poor women build a pathway out of extreme poverty by providing them with seed capital, business and life-skills training, a savings program, and two years of mentoring. In REAP, women also contribute to a savings pool, which they use to access loans for business expansion and to cope with shocks, such as drought and emergencies. By increasing income, building savings, providing access to credit, raising awareness of health and educational resources, and acquiring social capital, women participants in REAP are able to feed their families, make long-term investments in health and education, and reduce the gender gap in their households and communities.

Figure 1: The Building Blocks of REAP



Putting Women and Girls at the Center of Development (WGCD) Cohort

In May 2016, BOMA enrolled 750 women from 14 locations in Marsabit County, Northern Kenya, in REAP through funding from the Bill & Melinda Gates Foundation's Putting Women and Girls at the Center of Development (WGCD) Global Grand Challenge. The 750 ultra-poor women, referred to as the Gates cohort, received cash grants to form business groups of three women each, forming a total of 250 Business Groups. Each business group received an initial cash grant valued at KES 20,000 (USD 200) to start and run a business. Each of the 750 participants also received a feature phone with a SIM card registered with M-Pesa.¹

Through a two-year intervention period, BOMA Village Mentors provided mentorship, coaching, and training to the Gates cohort business groups. Business training sessions covered topics such as savings, credit, supply and demand, profit and pricing, budgeting, marketing, business expansion and sustainability; while life skills training covered topics such as the rights

¹ M-Pesa (M for mobile, *pesa* is Swahili for money) is a mobile phone-based money transfer, financing, and microfinancing service, launched in 2007 in Kenya and Tanzania. M-Pesa allows users to deposit, withdraw, transfer money, and pay for goods and services with a mobile device.

of women, family planning, the importance of educating children (especially girls), gender-based violence prevention, and household decision making.

After six months into the program, a second performance-based Progress Grant, or a conditional cash transfer of KES 10,000 (USD 100), was awarded to 249 business groups, following a progress report from Village Mentors proving promising business performance. One out of the 250 business groups dissolved early into the program. After the Progress Grant, participants formed 51 Savings Groups to pool monthly savings that can be accessed by members as loans for business expansion or personal use. Village Mentors continued to work with business and savings groups for the duration of the two-year program.

The Endline Survey

The Gates cohort exited REAP in May 2018. The purpose of this report is to evaluate the impact of the two-year program on the participants. BOMA's Standard of Living Index (SOLI) survey was administered to the participants during key points in the program: (1) at enrolment for baseline data in April 2016, (2) at the program's midpoint in May 2017, and (3) at exit in May 2018. The survey evaluated the participants' household income, savings, household decision-making power, livestock ownership, enrolment of children in school, food security, healthcare use, and spending.

Key Findings

In a comparison from baseline to endline, results show that the Gates cohort reported a 78% increase in average household income, a 1,748% increase in savings, and an increased role in household decision-making on children's education, medical expenses, and the purchase of household livestock over the course of two years.

1. Household Income and Business Performance

At Exit, 99.6% (249/250) of BOMA businesses are still in operation and 96% (238/249) of businesses meet the graduation target of having a business value of at least 125% of the initial grant size (KES 37,500). Overall, participants in the Gates cohort reported a:

78.8% increase in average household income, from KES 3,655 at baseline to KES 6,536 at endline.

2. Savings and Loans

All participants reported having savings at exit, compared to only a third at baseline.

Participants reported an average total savings of KES 14,510 at exit compared with KES 785 at baseline. This represents an increase in savings of 1,748% over the course of two years.

Savings are primarily held within the BOMA business, the BOMA savings group, personal savings in the household, or in livestock.

Shock preparedness, a concern at midline because of lack of long rains and widespread drought conditions in Northern Kenya, has seen marked improvement in the course of the intervention. Evaluated based on membership in savings groups, access to credit, and a minimum of KES 8,000 (USD 80) in savings, **the endline survey showed that 99% of participants are prepared for shocks, such as drought, floods, and other types of emergencies.**

3. Household Expenditures

The increase in household income was accompanied by a parallel increase in household expenditures. For example,

annual school expenses for the Gates cohort increased by 154% from KES 3,991 at baseline to KES 10,144 at endline, while annual medical expenses increased 85% from KES 1,343 at baseline to KES 2,482 at endline.

4. Livestock Ownership

Accompanying an increase in savings and income, participants reported an increased number of livestock owned by themselves and their households.

The average number of livestock owned by the household increased from 3.5 Tropical Livestock Units (TLU)² at baseline to 8.5 TLU at exit, an increase of 142%, while the average number of livestock owned by the participant increased from 1.1 TLU at baseline to 3.1 TLU at exit, an increase of 181%.

5. Household Decision Making

Women gained agency³ in decision-making in the home. Survey results indicate that with their increased income, savings, and access to credit from the BOMA savings group, participants now have greater influence in household financial decisions. **At exit, participants are more involved in various household decisions, particularly in the purchase and selling of livestock.**

Participants are able to run their businesses without interference from their husbands. **They also reported greater influence and engagement in the community and in institutional structures, such as saving groups, community committees, and among other women.**

Business ownership, the ownership of livestock, the availability of savings, access to credit, and the ability to take children to school improved women's social standing across all locations surveyed.

² TLU: Tropical Livestock Units are livestock numbers converted to a common unit. Conversion factors are: camels = 1.4, cattle = 1, donkeys = 0.5, sheep/goats = 0.1, and chickens = 0.01.

³ Agency is the capacity for purposive action, the ability to pursue goals, express voice and influence and make decisions free from violence and retribution. Women and girls express agency in decision-making when they influence and make decisions and when they establish and act on goals. (*A Conceptual Model of Women and Girls' Empowerment*. Bill and Melinda Gates Foundation.)

REAP participants, and their husbands, shared that empowerment is a result of women being less financially dependent on their husbands; participants' increased confidence and self-worth; and men's changing perceptions of women.

In summary there is greater respect for women in the community following participation in REAP. Their communities begin to see them as business leaders and capable mentors.

6. Educational Opportunities for Girls

As a result of training and awareness sessions, and BOMA's school enrolment campaign in 2017,

REAP participants reporting that ALL their primary school-age girls (6 to 14 years) were enrolled in School increased from 56.7% at baseline to 68.5% at end line, representing a 21% increase.

At midline, herding livestock and household chores were identified as the main barrier to primary school enrolment (80% of girls not in school were herding). As a part of the Gates cohort, BOMA developed a Girl Child Education Campaign engaging participating households, village chiefs, elders, school teacher and local organizations to effectively address this challenge, which will be incorporated in BOMA's larger programming going forward.

7. Household Food Security

Participants' reported that their households are now more food secure, with almost all participants **(99%) eating two meals per day at midline, compared with 79.9% at baseline.**

At endline, 98.5% of participants reported that no child in their household went to sleep without an evening meal in the past week, compared with 42.8% at baseline.

8. Family Planning

At midline, 28% of participants in the Gates cohort reported they are currently using a family planning method and this does not change significantly at endline.⁴ Considering the low awareness and limited access of family planning methods, tools and services in Marsabit County compared to other parts of Kenya (2014 Kenya Demographic and Health Survey), the result achieved by BOMA Mentors in family planning training shows significant progress.

9. Mobile Phone and M-Pesa Access and Usage

BOMA provided mobile phones to all participants in the Gates cohort. **Mobile phone ownership increased from 40.6% at baseline to 92.3% at endline.** Survey results suggest that access to mobile phone is a significant driver to M-Pesa usage in Northern Kenya, where the most frequent use was to receive money from family and friends. At endline, participants were increasingly utilizing their phones to connect more with other people and for M-Pesa transactions. From baseline to endline, **M-Pesa use increased from 34% to 87%.**

⁴ Questions on family planning were introduced into the SOLI questionnaire in November 2016 and were therefore not asked for the Gates cohort at baseline but were added at midline.



Poverty Graduation

In evaluating graduation from extreme poverty based on BOMA's graduation criteria⁵ at exit, results from the exit survey confirmed that, since joining REAP in April 2016, participants have dramatically improved their ability to provide for their families, ensure food security for their household, respond to shocks, as well as their decision-making authority and agency within their households and their communities. The passing rate for food security, sustainable livelihood, and shock preparedness ranged among 95.9% to 99%. The graduation rate for the human capital investment criteria of primary school-age girls attending primary school increased from 56.5% at baseline to 68.5% at endline, representing a 21% increase.

From the lens of women economic empowerment, the study has validated BOMA's impact and REAP's effectiveness in enabling the voice and choice of women. By increasing financial and productive assets that secure a sustainable income, BOMA women gained knowledge, skills, and influence that led to greater agency in the institutional structures of family, community, and markets. These, in turn, have elevated their agency in decision making.

BOMA is driven to build on these results and continue expanding REAP to lift more women and children out of poverty across the drylands of Africa.

⁵ BOMA's Poverty Graduation Criteria:

Food Security

- (1) No child going to bed without an evening meal in the past week
- (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, has access to credit, and has a minimum of KES 8,000 in savings

Human Capital Investment

- (6) All eligible primary school-age girls are enrolled in primary school
- (7) Participant has an increased role in household decision-making

Introduction

Background

The BOMA Project works in the arid and semi-arid lands (ASALs) of Africa where residents suffer from some of the highest poverty rates in the world. BOMA's target area represents the last mile of extreme poverty and economic isolation. The region's low population density and lack of infrastructure mean there are no large employers, making livelihood choices minimal. Many of the villages where BOMA works are miles from the nearest trading post, paved road, public transportation, school, health center, or financial institution. Low population density, geographic remoteness, and transportation challenges have left residents largely forgotten by their own government, with only a few NGOs willing to make meaningful investment beyond food aid or short-term humanitarian relief.

BOMA's current work area, Northern Kenya, is defined by its geographic, economic and political seclusion. As the Kenyan Ministry of State describes in *Vision 2030: Development Strategy for Northern Kenya and Other Arid Lands* report, "*The defining feature of Northern Kenya is its separation from the rest of the country, which manifests itself in both physical and psychological ways... isolation, insecurity, weak economic integration, limited political leverage, and a challenging natural environment combine to produce high levels of risk and vulnerability.*"⁶

According to a 2011 report by the Kenyan Ministry of State, taken together, the seven districts of Northern Kenya had a UNDP Human Development Index lower than that of Sierra Leone, the lowest-ranked country in the world. According to recent data from the Grameen Foundation's Progress out of Poverty Index, 92% of people live in poverty in Marsabit and Samburu districts and the reported number of people living in extreme poverty is as high as 82%.

Lack of adequate rains during the 2016 short and long rains led to severe drought in the ASALs of Kenya in 2017 affecting about 2.7 million people.⁷ Inadequate water and pasture led to deaths of livestock, the main source of livelihood in the region. Increased prices of food and basic commodities also led to increased food security concerns and malnutrition. In response to the Government of Kenya's call for help, UN agencies and partners issued a Flash Appeal for US\$165.7 million in March 2017. The country also experienced a difficult year in 2017 due to the prolonged election period and high inflation which affected food security.⁹

Historically, pastoral nomadic communities of Northern Kenya share a patriarchal social system, in which men have greater authority in household decision-making and control financial resources and assets, mostly livestock and land. Women are typically not allowed to own livestock, save for a few animals in the homestead. Although men tend to spend the majority of

⁶ Minister of State for Development of Northern Kenya and Other Arid Lands, "Vision 2030: Development Strategy for Northern Kenya and Other Arid Lands" Republic of Kenya, August 2011.

⁷ The President of Kenya declared drought a national disaster on February 10, 2017.

⁸ "Kenya: The drought in Kenya 2016-2017." <https://reliefweb.int/report/kenya/drought-kenya-2016-2017>.

⁹ We had a difficult year, thanks to inflation, two elections: https://www.the-star.co.ke/news/2018/04/27/we-had-a-tough-year-thanks-to-inflation-two-elections_c1749694

their time away from the household to look after livestock, they are the primary earners, and therefore control the finances for the household and the decisions. When women are left alone to take care of the children and household, most will need to consult their husbands about household decisions, including paying for medical treatment, paying for school fees and school expenses, and buying and selling livestock. In recent years, women have become further marginalized and disempowered by the ripple effect of climate change and dependence on humanitarian aid. Women suffer doubly in geographic isolation with a lack of opportunities for income-generating activities and discrimination within a patriarchal society. For the few women who have managed to cultivate a source of income, their lack of access to formal financial institutions makes it difficult to keep, transfer, and save money safely.

The Rural Entrepreneur Access Project (REAP)

The Rural Entrepreneur Access Project (REAP) is a data-driven, high-impact poverty graduation program that engages women in two years of sequenced interventions, including a cash transfer to start a small business, financial and life skills training, and mentoring. The women also contribute to a savings pool, which they can use to cope with shocks, such as drought, or for business expansion and personal loans. In advancing financial inclusion, all REAP participants are also provided mobile phones and an M-Pesa account to manage their finances and personal savings.

Targeting and baseline surveys. REAP participants are selected using a targeting method designed to enroll the poorest and most vulnerable women in the graduation program. BOMA administers this process using the Participatory Rural Appraisal (PRA) and the Participant Targeting Tool (PTT).

- The Participatory Rural Appraisal (PRA) is facilitated by a BOMA Field Officer and supported by the BOMA Village Mentor, as well as community volunteers who are members of the BOMA Village Location Committee. It involves all community members, including women, men, youth, people with disability, and their leaders. During PRA and using an exercise with rankings of 1 (poorest) through 7, the participants delineate the community's physical features/boundaries, mapping, siting and recording of all the households, main occupation of head of household, drawing of social maps, and wealth ranking. The output of the PRA is the wealth ranking table that categorizes the households into ranks, with rank one considered the poorest.
- In the Participant Targeting Tool (PTT), women who are ranked in 1 and 2 in PRA categories are further evaluated. The process is administered by independent enumerators who visit each nominated household to generate scores that determine the validity of the household to participate in REAP. Mentors interview potential participants to gather data, which is recorded in Performance Insights, BOMA's digital platform. All participant who score 50% and below become eligible for enrolment into REAP.

Mentoring and Coaching. After REAP participants are identified, full-time, local BOMA Mentors¹⁰ assemble three-woman business groups and help each group write a business plan, called a Jump Grant Application. The Jump Grant Application includes a description of the business, projected start-up costs, a budget, and a savings plan. Participants self-select themselves into business groups and determine the type of business they will run. Businesses formed by REAP participants include general shops/kiosks, livestock businesses, butcheries, grocers, and shops selling clothes, petrol, beads, and crafts.

Cash Transfer. Each business receives a seed capital grant of USD 200 to launch the enterprise. A second performance-based conditional cash transfer of USD 100 is distributed at six months, following a satisfactory progress report by the Mentor.

Financial Training, Gender-Focused Life Skills, and Human Rights. Village Mentors provide training and coaching throughout the program. Financial training sessions cover supply and demand, profit and pricing, record keeping, marketing, savings, borrowing, and lending, planning for long-term expenses, investing, and sustaining the business and savings group after REAP. Life-skills sessions include household decision-making, the importance of educating children (especially girls), family planning, and the rights of women. Mentors also facilitate regular business group meetings to monitor their groups' progress on their business targets. For tracking progress, Mentors collect data during group meetings and input these into Salesforce using their tablets. Each Mentor coaches approximately 60 businesses and 12 savings groups.

Savings and Access to Credit. At six months, Mentors assemble 3 to 5 business groups into savings associations, whose members meet monthly to deposit or withdraw savings. Mentors work with each group and deliver micro-trainings for the remaining 18 months of the program.

Financial Inclusion and Market Connections. All BOMA savings groups are registered with County Social Services, facilitating their ability to open a bank account and access formal financial institutions and services. Depending on access, BOMA also helps participants open personal bank accounts.

BOMA's holistic program helps ultra-poor women build a pathway out of extreme poverty by addressing the challenges that perpetuate the cycle of poverty: low income, inconsistent cash flow, and inadequate access to financial services. Profits from each REAP business provide a new and diversified income for participants, while personal and business savings help women manage cash for daily needs. BOMA savings groups help women plan for future expenses, such as school fees and healthcare expenses, and respond to shocks, such as drought or emergencies. Regarding the societal impact of women's ability to earn income, *a Longitudinal Assessment of the Rural Entrepreneurship Access Program 2017* found that financial and social empowerment enable women to exercise increased influence in household decision-making.

¹⁰ All mentors are full-time BOMA staff who are respected local residents--former school teachers, shop owners and development workers--who are carefully selected, trained and supported by the BOMA field staff.

This is consistent with development literature that maintains that women’s ability to earn and control income and financial assets results in greater buy-in in household decision-making.^{11,12}

Since launching REAP, BOMA has reached more than 116,892 women and children by establishing 6,494 diversified businesses and 1,030 savings groups in the six poorest counties in Northern Kenya: Marsabit, Samburu, Isiolo, Wajir, Turkana, and Garissa. BOMA achieved this milestone target of lifting 100,000 women and children out of poverty nine months ahead of deadline, and is now driven to expand REAP across the ASALs of East Africa, with the audacious goal of lifting 1,000,000 women and children out of extreme poverty by 2022.

Purpose of the Report

In May 2016, through funding from the Bill & Melinda Gates Foundation, BOMA enrolled 750 ultra-poor women from 14 locations in the drylands of Northern Kenya in the REAP program. These locations have varying conditions that pose diverse challenges for REAP participants. While all located in Marsabit and Samburu, the 14 locations vary in terms of access to the main A2 highway passing from Kenya to Ethiopia, access to markets, the primary livelihood for residents (pastoralist vs. agro-pastoralist), the prevalence of primary schools, the dominant tribe, and amount of rainfall. At the onset of the program, each business group received a Jump Grant valued at USD 200 and began monthly mentorship and business skills training with their BOMA Village Mentor. In November 2016, 249 business groups that were still operating received a Progress Grant valued at USD 100. These business groups also formed 51 savings groups of approximately 15 women each, and began making monthly savings contributions and participating in monthly savings group meetings.

This report presents evidence of the impact of REAP on women participants over its two-year implementation, and identifies opportunities for expanding REAP’s impact.

Methods

The evaluation of the REAP project uses a pre-post comparison between the baseline and endline survey results, using BOMA’s Standard of Living Index Survey (SOLI). The SOLI is based on key outcome measures which align with the graduation criteria (food security, income, savings, education) as well other important areas like mobile phone/money usership, household expenditure, asset ownership, household decision making power, health seeking behavior, and family planning.

BOMA administered the baseline survey to all 750 participants selected to be enrolled in REAP in the following month. Data collection was done between April 14, 2018 to May 1, 2018, with follow up surveys conducted through May 8, 2018 for participants who had not been reached during the first set of visits. Three teams of five trained, independent enumerators conducted

¹¹ A.M. Sultana, “Factors Effect on Women Autonomy and Decision-making Power within the Household in Rural Communities,” *Journal of Applied Science Research*, 7 (1): 18-22, 2011.

¹² B. Agarwal, “Bargaining and Gender Relations: Within and Beyond the Household.” *Feminist Economics* 3 (1): 1–51, 1997.

the surveys in the participants' homes to verify information provided by respondents, and to ensure privacy. Enumerators recorded data using tablets installed with TaroWorks, a digital data collection application that uploads data into BOMA's Performance Insights data platform.

Prior to the baseline and endline surveys, enumerators participated in a four-day training that included a discussion on instructions on data collection using TaroWorks and tablets, the roles of the enumerators, the survey methodology, the survey questionnaire, role plays in groups, a translation exercise, a practical test to ensure enumerator competency, and a field test. BOMA administered a post-test on the final day of training, where enumerators shared how they would answer survey questions in different scenarios and in the local language. All enumerators are university students or graduates from Marsabit and Samburu counties, which helped ensure a high level of numeracy and literacy, and familiarity with the local language and context. BOMA's Project Data Analyst and Regional Monitoring and Evaluation Officer facilitated the four-day training sessions.

BOMA's Standard of Living Index (SOLI) endline survey was administered to 92% of the participants in the Gates cohort from 22nd April to 25th May 2018. Data collection was done by three teams of experienced independent enumerators, each consisting of one supervisor and four trained enumerators. To ensure consistency and continuity, BOMA hired eight (8) high performing enumerators from the April 2016 baseline survey to help conduct the end line evaluation. The entire team that was engaged in the endline evaluation had significant experience with the SOLI survey. As with the baseline evaluation, enumerators collected all survey data using tablets equipped with TaroWorks. Questions in the endline survey were identical to those in the baseline and midline surveys, except for questions on BOMA business, family planning usage, and phone and M-Pesa usage.

BOMA supervisors conducted spot checks throughout the survey to ensure the accuracy of data collected. Supervisors conducted spot checks by re-administering two survey sections at random to a participant and comparing the results with those submitted by the enumerator. BOMA's Monitoring and Evaluation team monitored incoming data using a series of dashboards created on BOMA's innovative digital platform, Performance Insights.

The survey faced challenges due to participants unavailable for interviews due to cultural weddings and ceremonies that they had to attend during the enumerators' visits. The team also faced logistical challenges due to flooding and intermittent weather in Northern Kenya.

Data Analysis

Data analysis involved both descriptive statistics and statistical tests. Descriptive statistics performed include proportions and frequency counts for categorical variables and means for continuous variables. Two-sample t-tests were used to compare differences in means for continuous variables at a 5% level of significance. Before performing t-tests, normality checks were done using graphical methods (histogram) and data log-transformed accordingly. Significance tests on categorical variables were performed using z-tests for binary outcomes and Chi-square tests for polychotomous outcomes, which were also evaluated at a 5% level of

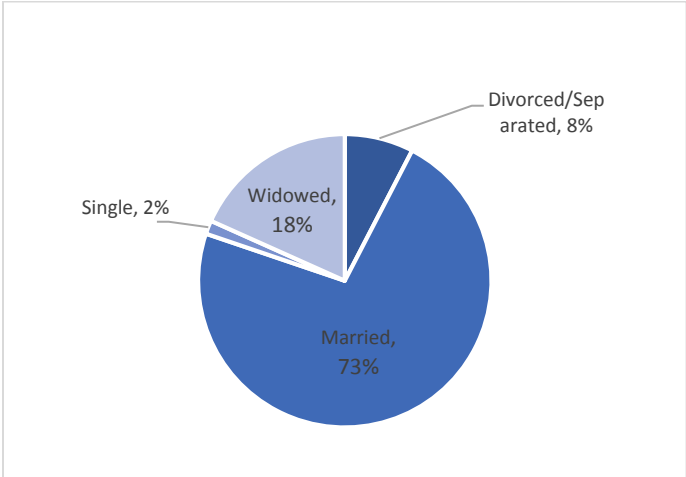
significance. P-values for comparisons of the Baseline vs. Endline survey are included in the main body of the report. All data analysis was performed using Stata software (Version 14, StataCorp, College Station, TX).

Results

Demographic Profile of Participants

Demographic characteristics are collected as part of the SOLI survey to better understand the participants enrolled in REAP. Majority of participants in the Gates cohort are married (72.6%), 18% have been widowed, 8% divorced or separated and 1.5% are single (Figure 2).

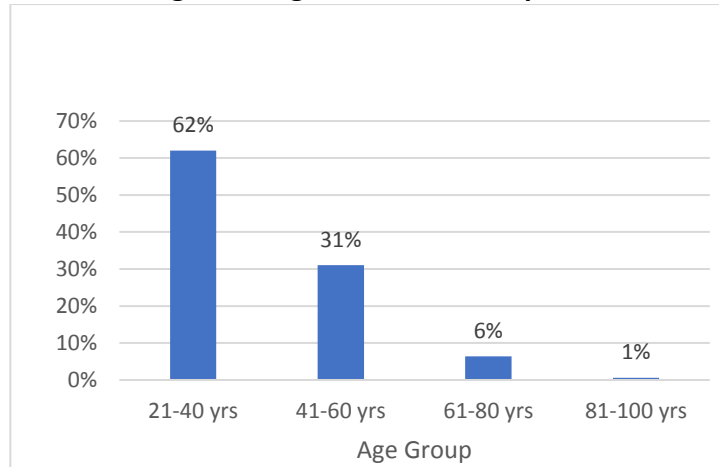
Figure 2: Marital Status of REAP Participants



The average age of REAP participants is 39 years at exit, with the majority falling between 21 to 40 years (Figure 3). Collecting data on age of participants is usually challenging as majority do not know their age. Enumerators therefore collect the date of birth from the participants' ID card which is then used to calculate the age.¹³

¹³ In the event that the participant's ID card is not available, her age is estimated based on their dancing circle (age group that she is associated with in the community) or by an events calendar.

Figure 3: Age of REAP Participants



The majority of the participants (88.9%) have no formal education (Figure 4) and only 14% can speak Kiswahili, one of Kenya’s national languages. Although only 8% and 7% of participants can read and write in any language, respectively, 93% can do addition, subtraction, multiplication, and division, as determined by the ability to solve contextual math problems (e.g. If you sell two cups of milk a day for seven days, how many cups of milk in total would you sell in a week?).

Figure 4: Level of Education of REAP Participants

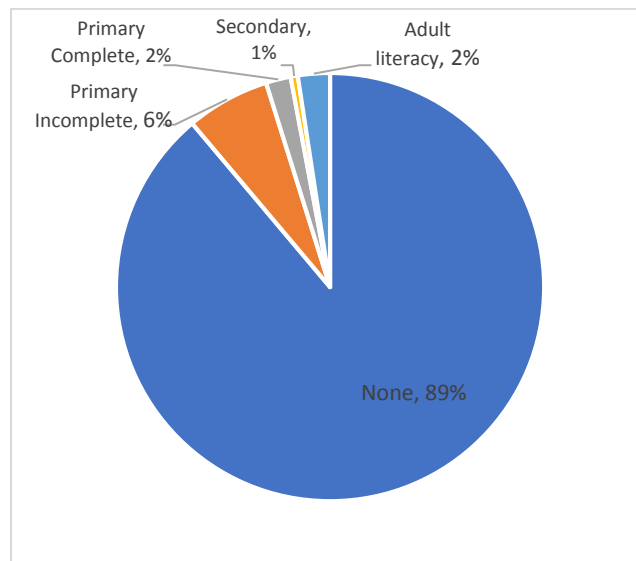
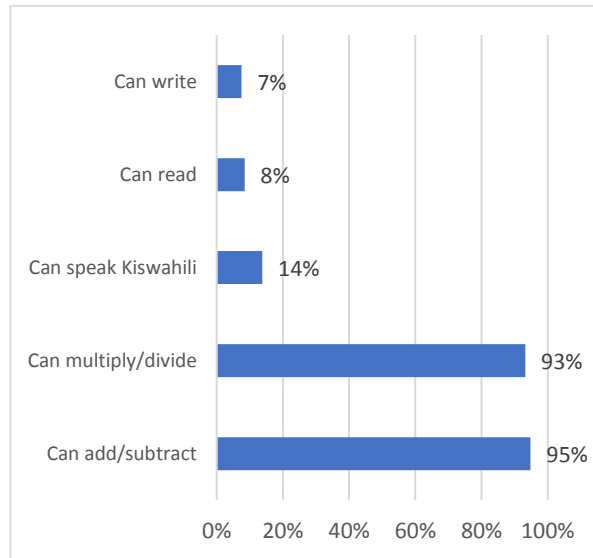


Figure 5: Literacy, Numeracy, and Language Skills of REAP Participants



Nearly all households (98.7%) have children under 18 in the household, with an average of four children under the age of 18 living in the household. The size of the household is an important indicator of the burden on the REAP household. The average size of the household is four members, while the largest household size in terms of composition is at nine members, including adults and children.

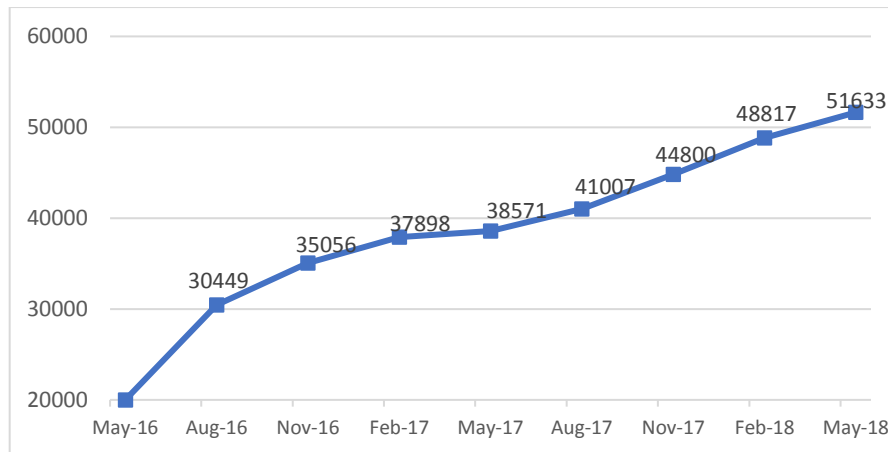
Economic Outcomes

Business Performance

At Exit, 99.6% (249/250) of businesses were still in operation. This is consistent with other REAP cohorts and reflects the dedication of BOMA mentors and the benefit of having regular support by the mentor. One group from Korr is no longer active after participants decided to split up the group before the progress grant. From June 2016 to May 2018, mentors made a total of 5,557 monthly monitoring visits to the 250 Gates-funded REAP businesses.

The average business value increased consistently over the two-year period, with the greatest increase occurring during the first three months of the program, with gradual increases thereafter (Figure 6). Slower growth between February 2017 to August 2017 may be attributed to the effect of the 2017 drought. REAP participants managed to sustain their households and still grew their businesses during the drought, albeit at a slower rate. At Exit, 94% of the active businesses (234/249) meet the graduation goal of having a business value of at least 125% of the initial grant size (KES 37,500). The few groups that do not meet this target mostly reported business values between KES 36,000 to KES 37,000.

Figure 6: Average BOMA Business Value Over Time



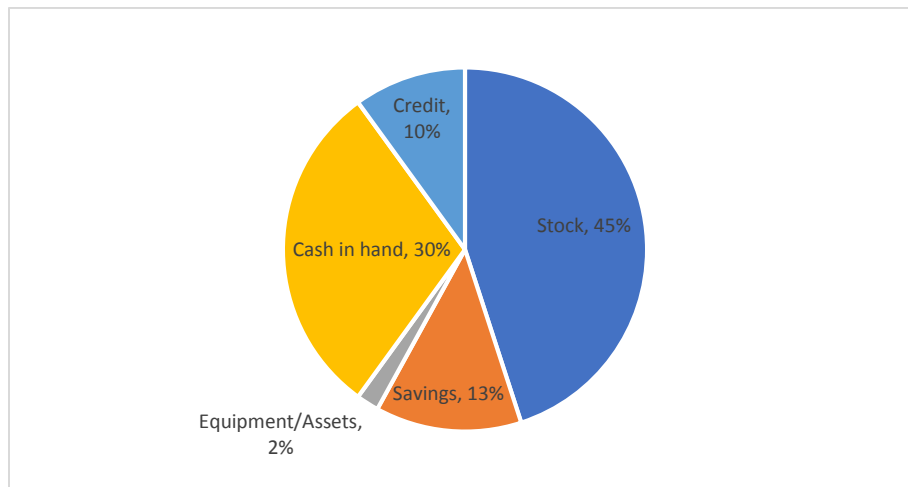
At exit, 176 groups are running small shops (Kiosks/Dukas) as their primary businesses, 58 have livestock sales, 13 are selling Miraa (Khat), and only two groups have Grocery as their primary business. Groups with Livestock as their primary businesses record the highest average value at exit (Table 1).

Table 1: Average BOMA Business Value at Exit by Type of Business

Type of Business	Average Business Value at Exit (KES)
Grocery	44,300
Kiosk Dukas	51,343
Livestock Sales	55,414
Miraa	40,673

Business value is made up of five components: cash on hand, stock value, business savings, value of credit owed to the business, and value of assets and equipment. The composition of business value at exit is consistent with previous exit reports (from other cohorts), with nearly half of the business value in stock, a third as cash in hand, and the remainder as credit owed to the business, savings, equipment and assets (Figure 7).

Figure 7: BOMA Business Value Composition



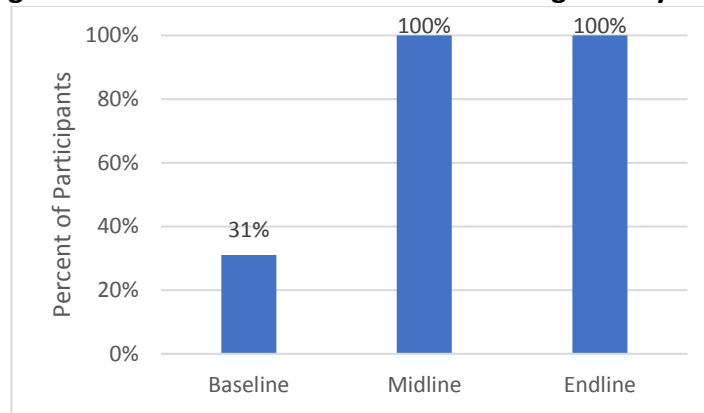
Savings and Loans

Savings

Establishing savings for participants is a key component of BOMA's mission as it ensures that participants exit REAP with a foundation to withstand shocks, such as drought and unplanned medical expenses. In pastoralist settings, savings are primarily through livestock, which can quickly be lost if there is a disease or drought. REAP participants are encouraged to save at least KES 400 (USD 4) per month with their BOMA savings group in addition to saving with their BOMA business group and on their own. Since December 2016, there have been a total of 812 savings group meetings against a target of 918 visits, with participants contributing an average of KES 521 (USD 5) per month. There are no mandatory saving amounts, but BOMA's overall combined savings target for graduation is KES 8,000 (USD 80).

By midline, REAP was successful in providing a formal process and savings mechanism for participants. 100% of participants had enrolled in BOMA savings groups and were already making their monthly contributions (Figure 8). BOMA Mentors worked hard to ensure that individual participants do not lag behind in their monthly contributions.

Figure 8: % of REAP Households with Savings of any Form



The BOMA business and BOMA savings group remain the primary sources of savings at exit. Besides cash savings, % of participants reporting other forms of savings do not show significant change from baseline, suggesting the influence of BOMA groups in encouraging savings among participants.

Table 2: % of REAP Participants with Savings in Various Locations

Type of Savings	Baseline (%)	Midline (%)	Endline (%)
BOMA savings group	N/A	99.6	100
BOMA business	N/A	65.9	87.8
Cash savings	11.1	43.8	47.2
ROSCA	7.9	10	7.6
Non-BOMA savings group	12.0	7.7	10.9
Non-BOMA business	3.5	4.9	3.9
M-Pesa	0.1	3.1	2.8
Bank	0.8	1.2	1.7
Other	0.1	0.1	1.5

The average amount of money saved is also higher in BOMA savings groups (KES 9,038), followed by BOMA business (KES 2,299) and personal cash savings (KES 1,587).

Participants in the Gates cohort reported significantly higher total savings at exit (14,510 KES) compared to the baseline (KES 785, $p < 0.0001$), representing an increase of 1,748% over the participants' two years in REAP. REAP participants saving through other options illustrates their increased ability to have multiple saving accounts.

Table 3. Average Amount of Savings of All REAP Participants (KES)

Type of Savings	Baseline (KES)	Midline (KES)	Endline (%)
BOMA savings group	N/A	3,734	9,038
BOMA business	N/A	1,229	2,299
Cash	141	968	1,587
Non-BOMA savings group	255	419	655
ROSCA	216	203	244
Non-BOMA business	62	99	176
M-Pesa	1	87	81
Bank	109	77	429
Other	19	1	108
Total Savings	785	6,817	14,510

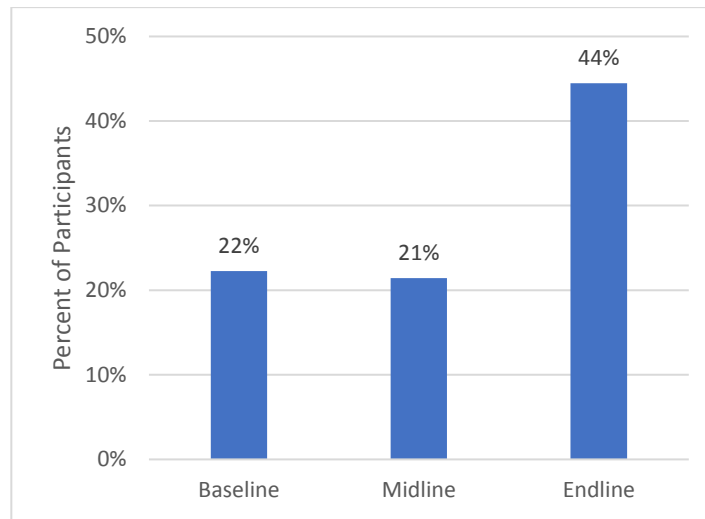
Table 4. Average Amount of Savings Across REAP Participants with Savings (KES)

Type of Savings	Baseline (KES)	Midline (KES)	Endline (%)
BOMA savings group	N/A	3,159	9,038
BOMA business	N/A	2,583	2,619
Cash	1,200	2,213	3,360
Non-BOMA savings group	2,400	500	7,447
ROSCA	2,530	2,033	3,230
Non-BOMA business	1,495	2,017	4,487
M-Pesa	67	2,779	2,947
Bank	7,418	6,438	24,600
Other	2,032	5,420	6,012
Total Savings	2,919	6,224	14,510

Loans

In addition to accumulating savings, being able to access credit is a key output of REAP that enables participants to have access to cash to pay for school fees, invest in their business, and pay for emergencies that may arise. At baseline, 22% of participants reported that they had taken a loan in the past year (2015). The % of participants who had taken credit in the past year (2017) increased at endline (44%). The change may be due to the increased access to credit through the BOMA savings group and improved financial standing (credit-worthiness) of participants.

Figure 9: % of REAP Participants who have Taken Loans of any Kind



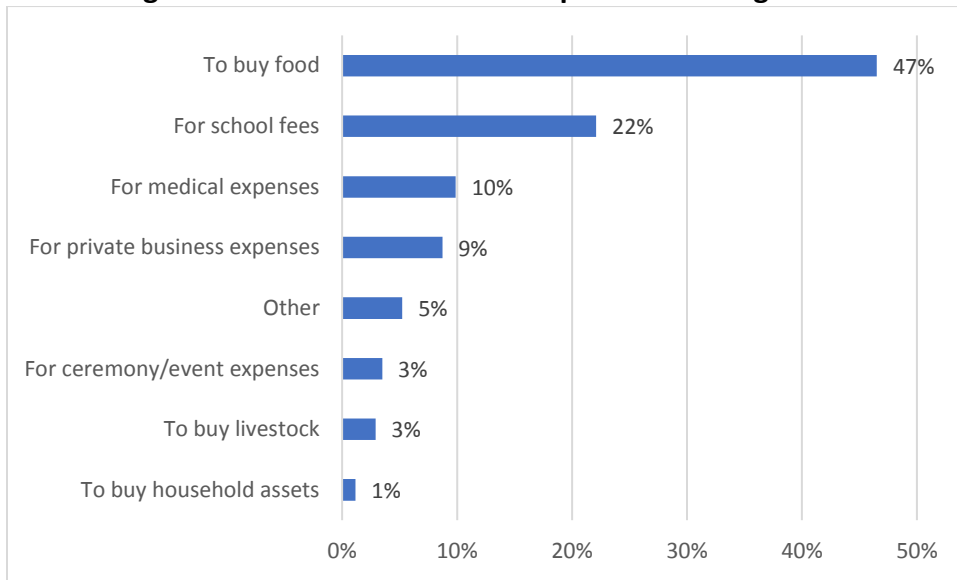
The BOMA savings group has grown to be the most relied upon source of loans for participants since midline. The total percentage of participants reporting that they took loans from their groups increased from 11.6% at midline to 33% at exit (Table 5). In relation, participants have significantly reduced reliance on other savings groups and money lenders, perhaps because of the ease of obtaining loans from other groups and financing sources with more desirable terms.

Table 5: % of REAP Participants that took Loans from Various Sources in the Past Year

Source of Loan	Baseline (%)	Midline (%)	Endline (%)
BOMA Savings Group	N/A	11.6	33
Family or Friends	9.9	5.4	12.1
Another Savings Group	8.6	1.5	1.7
Money Lender	4.4	4	1.6
Bank	0	0	0.1
Microfinance Institution	0.5	0.3	0.9

The most common reasons for taking loans reported at endline SOLI was to buy food for household consumption (47%), to pay school fees (22%), pay for medical expenses (10%), and for private business expenses (9%) (Figure 10). Slower growth in business values between February and August 2017 (illustrated earlier) could be the reason participants took loans from their savings groups to buy food to sustain their households. This shows how REAP can adequately enable participants to sustain shocks like drought.

Figure 10: Reason of REAP Participants for taking Loans

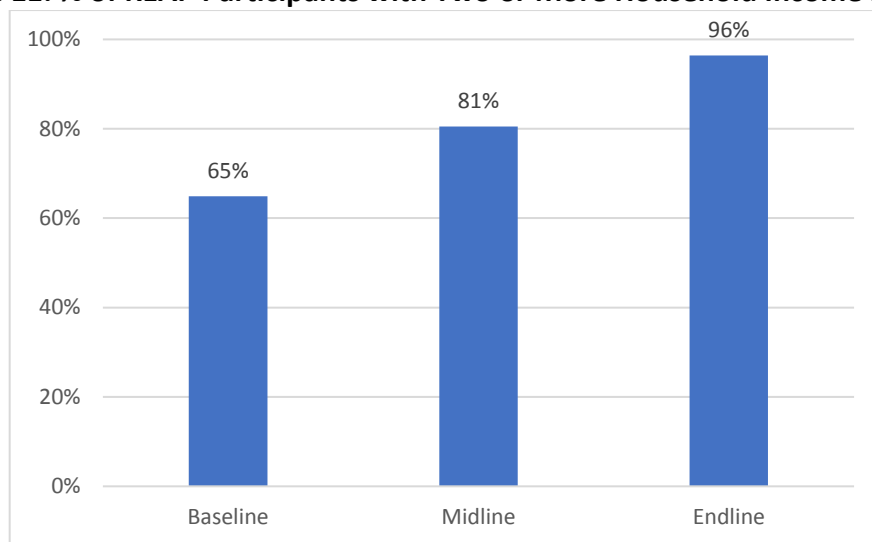


Household Income

Diversified income sources are one of the key components of REAP as participants are encouraged to have at least two viable sources of livelihoods. To understand changes in the household's livelihoods, enumerators asked participants about their sources of income and amount earned from each source at baseline, midline, and endline. Enumerators faced challenges in collecting data on income and consumption due to participants' difficulty in recalling exact numbers on earnings and spending. This data set thus serves as an estimate of the change in household income for REAP participants.

As shown in Figure 11, REAP households with more than one source of income increased from 65% at baseline to 96% at baseline ($p < 0.0001$), mainly attributed to the BOMA businesses.

Figure 11: % of REAP Participants with Two or More Household Income Sources



* Significantly different from the Gates cohort at baseline, $p < 0.0001$

Table 6 confirms that the increase in the number of income sources was largely due to the establishment of the BOMA business. The % of participants reporting that their households received income from non-sustainable sources (burning charcoal, collecting firewood and fetching water) showed a decreasing trend with increased focus on BOMA funded businesses. An increase in remittances from baseline (17.9%) to endline (29.5%) is likely due to access to M-Pesa.

A notable challenge in collecting data on income from sale of livestock and related products is that participants tend to report that they were not selling livestock at the time rather than that they were no longer selling livestock for income. This likely explains the decrease in % of participants reporting household income from livestock at midline as most of the livestock were at the satellite camps hence not available for sale. At exit, reported change from baseline is consistent with results from previous REAP cohorts.

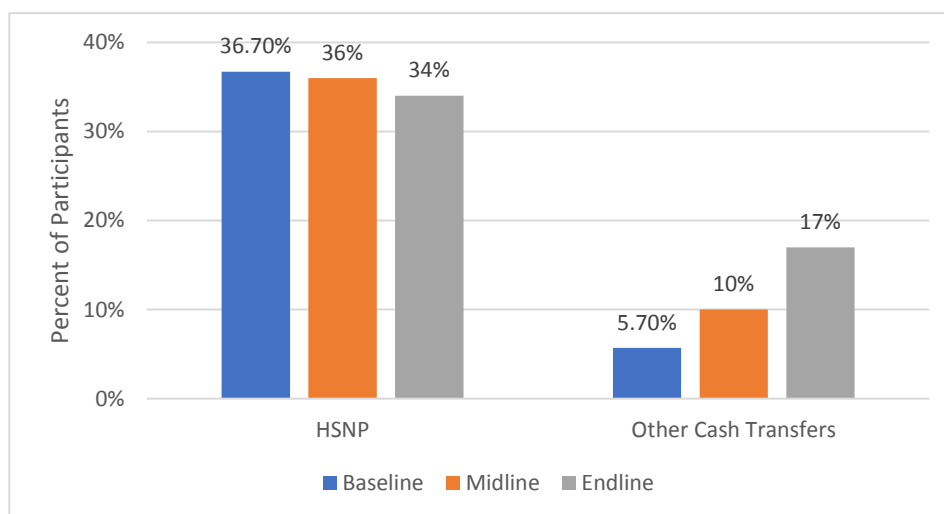
Table 6. Reported Sources of Income for REAP Participants

Source of income	Baseline (%)	Midline (%)	Endline (%)
BOMA Business	N/A	95.7	97.1
Selling Livestock	62.8	46	75.6
Casual Labor	36.9	29.6	28.9
Remittances	17.9	17.6	29.5
Collecting Firewood	23.2	11.8	6.4
Selling Milk	8.8	11.6	0
Selling Meat	9.7	11.3	16.7
Burning Charcoal	10.3	7.6	6.1
Selling Crops	5.6	5.4	9.3
Selling Hides & Skins	4.8	3.6	3.2

Fetching Water	11.1	3.6	2.6
Salaried Labor	2.0	3.0	9.0
Non-BOMA Business	2.9	2.8	6.3
Tourism	1.2	2.7	2.9
Political Handouts	2.3	N/A	N/A
Pension	0.3	0.3	0.4
Selling Fish	0.0	0.0	13.7

The % of participants reporting that they receive income from HSNP did not significantly change from baseline (Figure 12). However, enrolment has increased significantly from 44% at baseline to 64% at endline following an enrolment drive in one of the constituencies in the district in October 2017. Enrolled participants have however not started receiving benefits. Increased cash transfers from other organizations could be due to intensified activities around the Chalbi region (Maikona, Kalacha etc.).

Figure 12: % of Households Receiving HSNP Benefits and Other Cash Transfers



At endline, the main income earners for the REAP participants' households in the last 30 days are livestock (KES 1,637) and income from BOMA business (KES 1,025)¹⁴ (Table 7). Income from the sale of livestock was slightly higher for the period as participants' households started to recover from the impact of the 2017 drought that had affected livestock. Most of the households had returned their livestock from the satellite camps due to increased vegetation.

¹⁴ The average income generated by the BOMA business is calculated as the sum of the cash taken as income from the BOMA business, the amount of credit paid off with earnings from the BOMA business, and the total value of food and goods taken as profit from the BOMA business in the past month.

Table 7. Average Income in the Past 30 Days Across All Participants (KES)

Income Source	Baseline (KES)	Midline (KES)	Endline (KES)
BOMA Business	0	2,026	1,025
Selling Livestock	1,231	1,064	1,637
Casual Labor	667	558	594
Remittances	166	282	458
Selling Meat	103	164	201
Salaried Labor	114	130	652
Collecting Firewood	264	98	59
Burning Charcoal	200	94	141
Non-BOMA Business	194	37	136
Fetching Water	100	29	22
Selling Milk	51	24	139
Political Handouts	0	12	N/A
Tourism	1	12	27
Selling Crops	74	7	174
Pension	7	4	17
Selling Hides & Skins	2	3	1
Selling Fish	0	0	139
Total Household Income	3,655	5,041*	6,536*
* Significantly different from the Gates cohort at baseline, $p < 0.0001$			

Household Expenditures

Household expenditures are also used to determine financial changes in participants' households, as it reflects the ability of a participant to provide for her family. Participants are asked about school and medical expenditures for the past year, as these are major expenses for the household that are not incurred every month. All other expenses are reported for the past month.

As shown in Table 8, REAP participants are more likely to have paid school fees and expenditures at endline compared to baseline ($p=0.0001$). Spending on school related expenses increased from KES 3,991 at baseline to KES 10,144 at endline, representing a growth of 154% over the two-year period. This reflects an increased ability of the REAP participants to contribute to the payment of school fees and related expenses.

The % of participants reporting medical expenditures increased from baseline to endline. Participants demonstrated a high likelihood to seek medical attention and an ability to afford

better healthcare due to loans or earnings from their businesses or savings groups. It is important to note that the period under review also reported increased cases of malaria and chest problems likely increasing the intensity of visits and healthcare expenditure. The amount of money paid for medical expenses increased significantly from baseline (KES 1,343) to endline (KES 2,482), $p = 0.03$. This represents an increase of 85% in medical expenses paid by the household in 2017.

Table 8. Medical and School Expenditures for the Past Year Across All Participants

Expense (All Participants)	Baseline	Midline	Endline
Percent of households paying school fees and expenses	67.2%	75.9%*	83.6%**
Amount of school fees and school expenses paid by household (KES)	3,991	5,232*	10,144*
Percent of households paying medical expenses	57.0%	56.3%	81.3%*
Amount of medical expenses paid by household (KES)	1,343	1,626*	2,482**
* Significantly different from baseline, $p < 0.0001$			
** Significantly different from baseline, $p < 0.001$			

Table 9 shows expenditures reported in the past 30 days preceding the survey. Food remains the most common household expenditure from baseline to endline, with the only variation being whether it is taken on credit or paid for in cash. At midline, credit expenditure on food increased slightly as cash expenditure declined, further highlighting the drought situation in 2017. But in 2018 at endline, participants were exposed to diversified sources of income to pay for food for their households, including livestock.

Expenditures for the other items measured increased from baseline to endline suggesting that that participants were better able to provide for their basic needs and afford other non-essential items.

Table 9. Reported Expenditures for the Past Month Across All Participants

Expenses (All Participants)	Baseline	Midline	Endline
Food (Cash)	2,205	2,096	3,166
Food (Credit)	1,089	1,229	1,141
Clothing for Self	73	123	204
Clothing for Others	95	209	372
House Repairs	7	44	145
Household Items	16	63	105
Special Events or Ceremonies	86	109	392

Travel	43	170	231
Cosmetics	50	117	135
Beads	11	42	57
Livestock	31	105	270
Livestock Supplies	88	239	315
Sweets, Tobacco, Miraa or Alcohol	96	101	188

Overall, the increased spending on medical care, education, and other expenses indicates an improvement in the participants' ability to provide for their families and an improvement in their households' financial position.

Livestock Ownership

Although BOMA provides women with alternatives to livestock for income, livestock ownership remains a profitable income-generating activity that helps provide for a household's needs. It is therefore expected that participants will continue to invest in livestock as it is the traditional source of savings and wealth. As part of the SOLI, REAP participants are asked about how many of each of the five kinds of livestock they own. These numbers are then converted to Tropical Livestock Units, (TLU) which are livestock numbers converted to a common unit using animal-specific conversion factors: camels are converted by a factor of 1, cattle by 0.7, donkeys by 0.5, sheep/goats by 0.1, and chickens by 0.01.¹⁵

As shown in Table 10, the % of households that own livestock increased for the three animals with the highest TLU conversion units: camels, cattle, and donkeys.

Table 10: % of Households that Own Livestock

Livestock Type	Baseline	Midline	Endline
Camels	26.7	31.7	37.1
Cattle	36.9	43.3	44.8
Donkeys	29.9	37.8	39.5
Shoats	85.6	85.4	91.7
Chickens	9.7	9.8	18.7

The average number of livestock owned by the household increased for all five livestock types, resulting in an overall increase in TLU for the REAP participants (Table 11). The overall increase in livestock ownership further indicates that participants' households are in a better financial position compared to their situation two years ago, despite the more extreme conditions of drought that occurred during the time period of increased livestock ownership.

¹⁵ Jahnke, H.E. 1982. *Livestock Production Systems in Livestock Development in Tropical Africa*. Kiel, FRG: Kieler Wissenschaftsverlag Vauk.

Table 11. Average Number of Livestock Owned by the Household

Livestock Type	Baseline	Midline	Endline
Camels	0.9	1.4	2.3
Cattle	1.1	1.9	2.5
Donkeys	0.4	0.6	0.7
Shoats	9.3	12.9	24.0
Chickens	0.7	0.9	1.1
TLU	3.5	5.5	8.5

Last, participants reported an increase in the number of livestock they own and control, as shown by a two-fold increase in TLU from baseline (Table 12). This is likely due to participants' increase in income, but may also represent a shift in cultural norms regarding women owning and controlling livestock resulting from the gain in social standing in the household.

Monthly monitoring data indicates that participants are buying livestock as a group either to stock or as a means of saving their earnings from the REAP businesses.

Table 12. Average Number of TLU Owned or Controlled by the Participant

Livestock Type	Baseline	Midline	Endline
Camels	0.1	0.4	1.5
Cattle	0.5	1.0	2.6
Donkeys	0.1	0.3	1.0
Shoats	3.4	6.0	10.7
Chickens	0.6	0.7	5.3
TLU	1.1	2.3	3.1

Priority Learning Themes

This section describes the impact of REAP on the priority areas of interest identified by BOMA and the Bill and Melinda Gates Foundation. To better understand the relationship between gender programs and health and development outcomes, BOMA assessed the impact of REAP on household decision making, education opportunities for girls, household food security, healthcare use, and phone and M-Pesa usage.

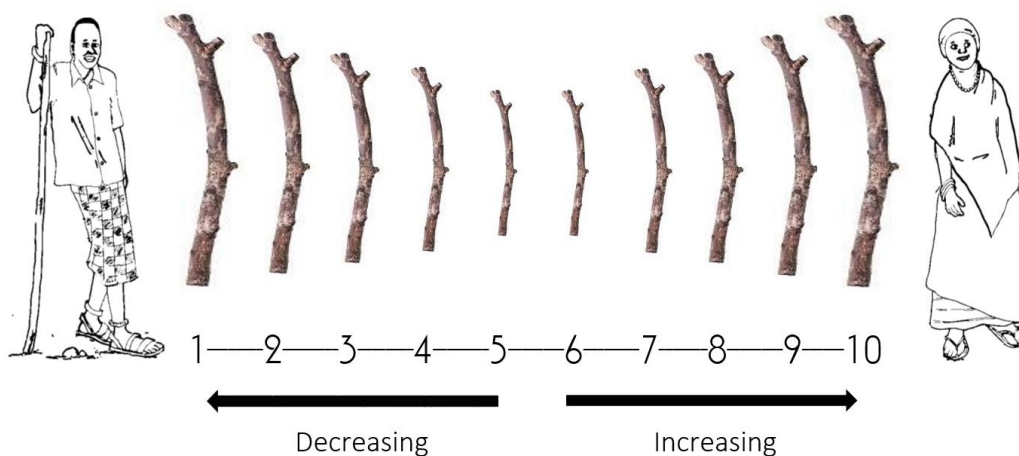
Household Decision Making

We started by assessing the changes in the participant's contribution to household decision making as a result of participating in REAP. BOMA used two types of scales to measure a participant's relative contribution in the areas of household decision making:

- The first scale involved ranking decision-making power from “fully” to “mostly,” “somewhat,” “little,” and “none.”
- The second scale involved the use of the 10 – point Likert scale, where a score of 10 means that the participant has complete control over household decision-making; a score of 5 means that the participant and her husband make decisions together; and a score of 1 means that the participant's husband has complete control over household decision making.

Considering that literacy rate among participants is low and they are not familiar with Likert scales, enumerators used a figure containing images and familiar concepts to explain the scale (Figure 13).

Figure 13: The Image Used by Enumerators to Explain the 10-point Decision-Making Scale to REAP Participants



While the diagram in Figure 12 was helpful in explaining the decision scale, it still took time for participants to fully understand the 10-point scale given the number levels.



Figure 14. An Enumerator Uses His Hands to Explain the 10-point Household Decision-Making Scale to REAP Participants

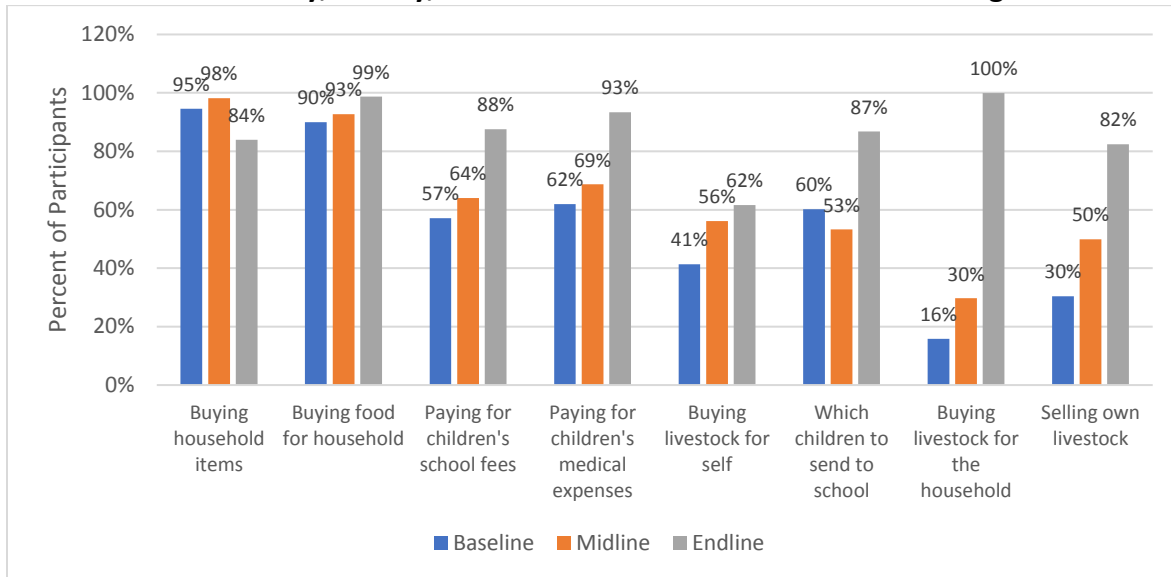
During the midline survey, one enumerator proposed to use his hands to explain the 10-point scale, using the outermost finger on one side to indicate where the husband has complete control over decision making, the outermost finger on the other side to indicate where the participant complete control over decision making, and the inner fingers to indicate where the participant and her husband make joint decisions (Figure 14). While this helped simplify the process, the 10-point scale was still complex to participants, and hence was dropped in May 2017.

Using the different decision-making rankings, participants reported growing involvement in household decision making across all levels, except in purchasing household items. The greatest increase is seen in making decisions to purchase livestock for the household and sell livestock specifically owned by the participants (Figure 15).

On the purpose of buying livestock, some female participants involved in livestock markets reported buying livestock for their businesses, while men buy livestock for herding. If a woman's husband is not home, she is, in many households, able to make decisions about purchasing and selling livestock and livestock-related supplies. Participants reported joint decision-making regarding buying livestock for household consumption.

“The one for household consumption for slaughter and the one for [...] food those are one in the same and we consult together. The one that you're not asking [me], the one that you buy for herding, whether it's goat or camel [...], you won't consult her [...],”
(Participant 7, Men's FGD, Korr).

Figure 15: % of REAP Participants Reporting being Fully, Mostly, or Somewhat Involved in Decision-Making



These results indicate that with their increased income, savings, and access to credit from the BOMA savings group, participants are now more empowered to make household financial decisions. REAP participants and their husbands shared during the focus group discussions that this empowerment is a result of the following factors: (1) women being less financially dependent on their husbands, (2) participants’ increased confidence and self-worth, and (3) men’s changing perceptions of women. All of these factors came about from women running BOMA businesses, having income from the businesses, and having savings in the BOMA savings groups. It is anticipated that decision-making power will continue to increase as participants grow their business and savings and their husbands adapt to the changing role of the participant as a provider in their household.

“Before it was only [the] husband who has the livestock [...and] we wait for [the] husband to sell livestock for us. He goes and then comes and you are left with the kids here and the children become so hungry at home without food. And the wife will just stay at home waiting for the husband to bring something. BOMA has brought this help when the husband is far away, still the children will feed well. Until now the husband realizes[s] that he has this wife now that does this great thing, she works hard. Now he listens to me until we come together [...],” (Participant 4, Women’s FGD, Korr).

“Before doing BOMA, it was only the husband who makes [the] decisions. He can go and decide to buy a cow. When he comes [home] with the money, he will not give you all the money, but he will give you something little to [...] to do some other things. He just goes to the market and buy[s] food for children. And he remains with the other money. And now, it’s us who gives them money. They are at home staying. It’s us who does business, it’s us who makes decisions of what to be done, it’s us who buy[s] food for children. We

don't have even that time nowadays of husbands telling us to buy food now,"
(Participant 8, Women's FGD, Merille).

The impact of REAP participation on making decisions about livestock and children's education may go beyond the increase in a participant's access to financial resources. It could also be related to the increase in a participant's access to guidance in making financial decisions. Participants receive extensive mentoring and coaching in investments, savings, and business decisions as part of REAP, and a participant's husband may not have the same guidance or information to contribute to decision making. This could result in bigger shifts in the current norm: REAP participants may take more responsibility for decisions on capital investment (e.g. buying livestock, paying school fees).

Married participants were also asked if they believe that as women they were able to own land in their communities. Half (51%) of the respondents believe that they are able to own land in their communities.

Another important aspect assessed at endline is the participants ability to run their businesses without interference from their husbands. **Majority of the married participants (92.2%) reported that they run their businesses without their husband's interference.**

Leadership in the Community

At endline the % of Gates participants holding leadership positions in the community was compared to the cohort at midline. Leadership in the community was not measured for the Gates cohort at baseline hence we cannot establish the progress in a comparison. A slightly higher % of the Gates cohort at endline (6.0%) held leadership positions compared to the March 2017 midline cohort (5.6%). The most common leadership positions held by participants are positions in the school, relief, and religious committees.

Educational Opportunities for Girls

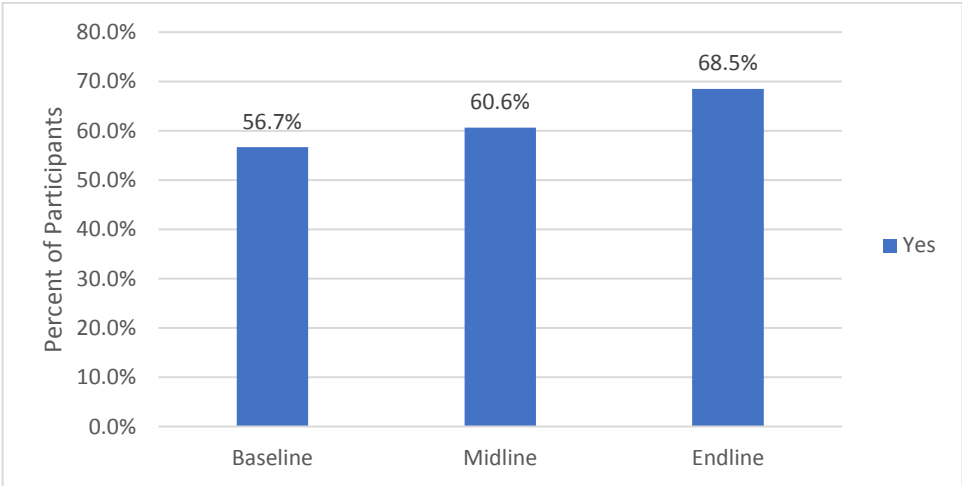
As a gender-focused graduation program, BOMA is committed to not only the women who are enrolled in the program, but also their daughters. In light of this commitment, a second priority outcome for the Gates cohort is primary girls' school enrolment. As REAP focuses on empowering women living in extreme poverty, ensuring that their children, especially girls, are enrolled in primary school enables a new generation of women who are able to better provide for their families, send their children to school, and have improved health outcomes. This breaks the cycle of poverty and creates a new cycle of agency for girls and women.

The percent of households reporting that ALL their female children of primary school going age (6 to 15 years) are enrolled in school increased from 56.7% at baseline to 68.5% at endline (Figure 16), representing a 21% increase.

At midline, it was noted that traction in advocacy efforts, women's increased income, the training sessions offered by mentors, and a participant's role in decision making at the household were not sufficient in significantly driving girl child enrolment. BOMA, in

consultation with the International Center for Research on Women (ICRW), rolled out a girl child education campaign in all 14 Gates cohort locations between November 2017 and February 2018. The first phase of the campaign involved community meetings with participants and key stakeholders, including child officers, administrators, teachers and chiefs, to re-emphasize the need for girl child education, attempt to address the main barriers to sending girls to school, and select community champions for girl child education. The campaign reached over 600 participants and stakeholders. In the next phase of the campaign, mentors worked with girl child education champions, exited BOMA participants, and administrative officers to follow up on REAP participants and their husbands who had not enrolled girls in school, with the aim of influencing them to take them to school at the start of 2018.

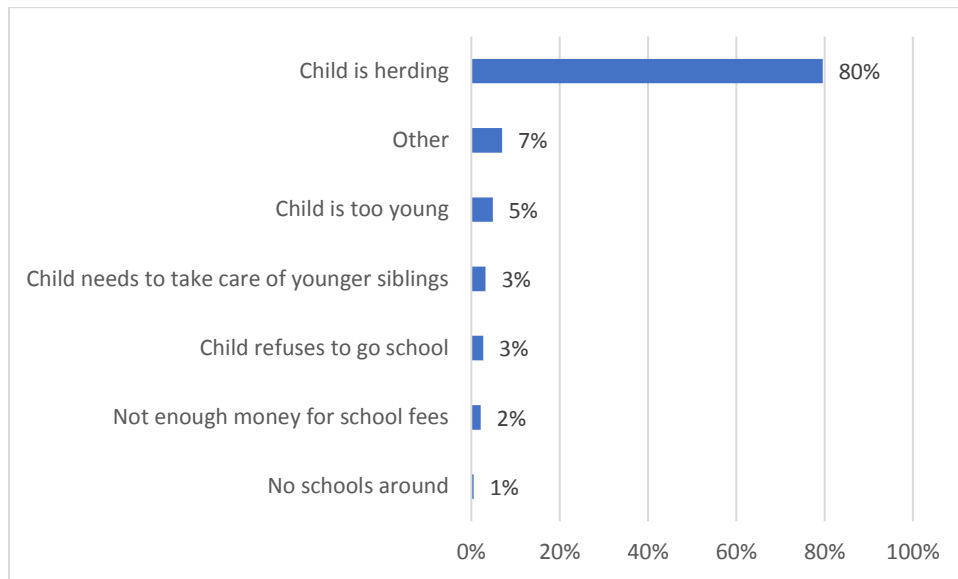
Figure 16: Participants reporting that ALL girls of Primary School age (6 to 15) are enrolled in School



Herding remains the main reason that primary school age girls are not enrolled in school, accounting for 80% of the cases (Figure 17). In most of the households in Northern Kenya, there is at least one child left behind to look after livestock and usually this is decided when the child is still at a very young age. Further, households that take all their children to school are likely to give away their livestock to be looked after by another household’s child. At exit, only 2% of children are not enrolled in school due to lack of money, indicating that REAP may have limited success in increasing school enrolment if the main barrier of herding is not addressed.

Previous attempts by NGOs, churches, and other organizations have not been able to address this barrier to school enrolment. Efforts attempted include night schools for herders, and mobile education centers with academic calendars scheduled around rainfall patterns, cycles of demand for children’s labor, and movement patterns of pastoralist communities. BOMA’s community-based, locally-led solution that increased enrolment by 15% is a significant achievement.

Figure 17: Reasons Why Primary Aged Girls are not Enrolled in School (Endline)



Impact on school enrolment for girls is also seen in secondary school enrolment, which increased by 9% from baseline. School expenses for secondary school are significantly higher than primary school in Kenya due to higher school fees and, in most cases, costs for boarding. It is possible that increased income and savings from REAP enabled participants to enroll more girls in secondary school.

The differential impact of REAP on both primary and secondary school enrolments for girls is seen in the changing role of girls in the household. In the past, girls would be married off to other families at an early age to earn the family wealth in livestock, and they were kept at home to help care for their siblings, for the household, and/or for livestock. Today, this is changing with more examples of educated girls creating positive impact in their communities. The advocacy efforts from BOMA and other organizations may be contributing to these changing cultural norms.

While the outcomes for girls' school enrolment are positive, the situation is contrasting for boys. Enrolment rate for boys remained constant for primary school age boys, and increased only by 3% for secondary school age boys. Boys enrolment for both primary and secondary schools is also lower compared to girls.

Focus group discussions show that parents are aware of the value of education and would like all of their children to attend school. However, it is only practical that some children are needed to stay at home to look after the livestock, and sometimes an extra child is needed at home for other domestic chores and caretaking. Boys are most often selected to stay out of school to herd, which likely explains the higher school enrolment rate for girls than boys.

"If you take your children to school, some are herding and some are in school, when your wife gets pregnant or sick or gives birth, who will help her? This one is there to help her."

If there are three, one is in school, one is herding, and one will help her mother at home. She is just at home helping her mother until she gets married,” (Participant 5, Men’s FGD, Korr).

FGD participants remarked that loans from BOMA savings groups are important contributions to paying for school fees and other expenses for supplies and transportation to school.

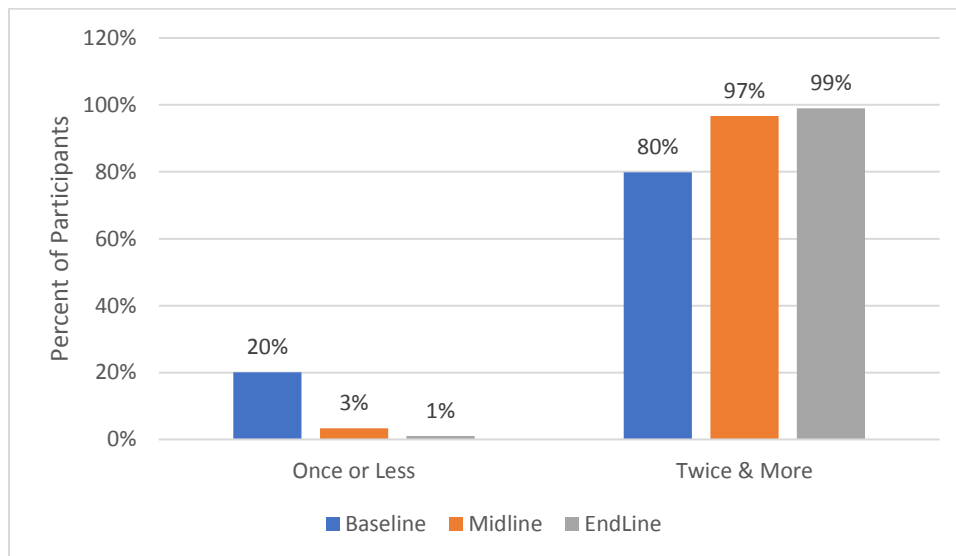
“Last time, [I] decided to take [my] student to school using BOMA money. Those people they are just in the same village and they are saying, “You didn’t sell [an] animal, how is it that you decide to take your son or your daughter to school?” And then [I] told them “I borrowed that BOMA money.” And then [I] was asked “How is that BOMA money [is still] existing, because we have eaten ours?” (Participant 1, Women’s FGD, Sagante).

Household Food Security

Household food security is an important indicator of a participant’s ability to meet her family’s basic needs. It also provides insight into a participant and her household’s overall quality of life.

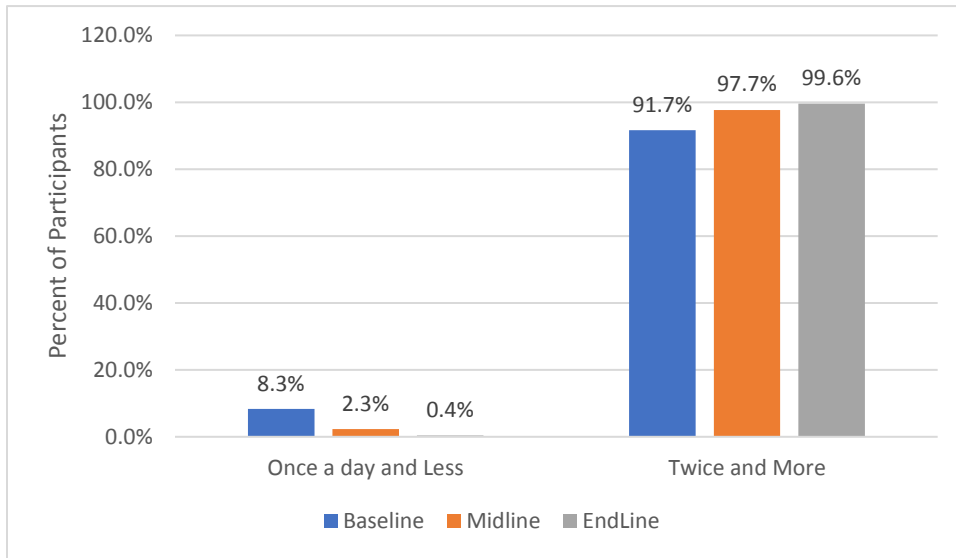
At endline, REAP households are more food secure compared to baseline. As shown in Figure 18, the % of participants reporting that their households had two or more meals a day increased from baseline (80%) to endline (99%), $p < 0.001$.

Figure 18: Number of Times REAP Participants Eat a Day (Past 7 Days)



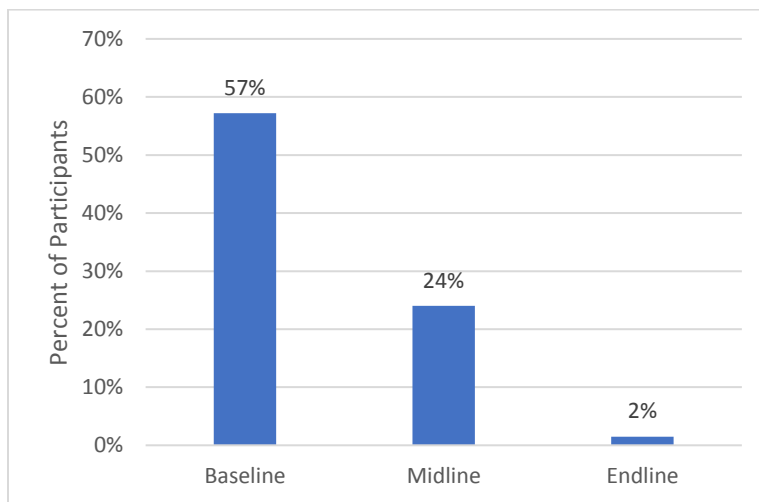
Similarly, at endline, more participants reported that their children are also eating more meals in a day (Figure 19). A total of 99.6% of participants reported that their children eat two or more meals per day at endline, compared with 91.7% at baseline ($p < 0.0001$). It should be noted that children enrolled in school receive a midday meal.

Figure 19: Number of Times REAP Participants' Children Eat a Day (Past 7 Days)



The % of participants reporting that their children went to bed hungry without an evening meal also significantly ($p < 0.0001$) declined from 57.2% at baseline to 1.5% at endline (Figure 20). Notably, there is a significant decline from midline (24%) to endline (2%) of children going to bed without an evening meal, suggesting continuous progress on food security during the two-year intervention.

Figure 20: % of REAP Participants Reporting that their Child Has Gone to Bed Without an Evening Meal in the Past 7 Days



* Significantly different from the Gates cohort at baseline, $p < 0.0001$

Table 13 below indicates that growing food security for children is not at the expense of the adults; REAP participants are less likely to restrict their consumption so their children can eat at endline. At exit, 80% of the participants reported that they never restrict their consumption so that their children can eat, compared to 11% at baseline.

Table 13: % of REAP Participants Who Restrict their Own Consumption to Feed their Children

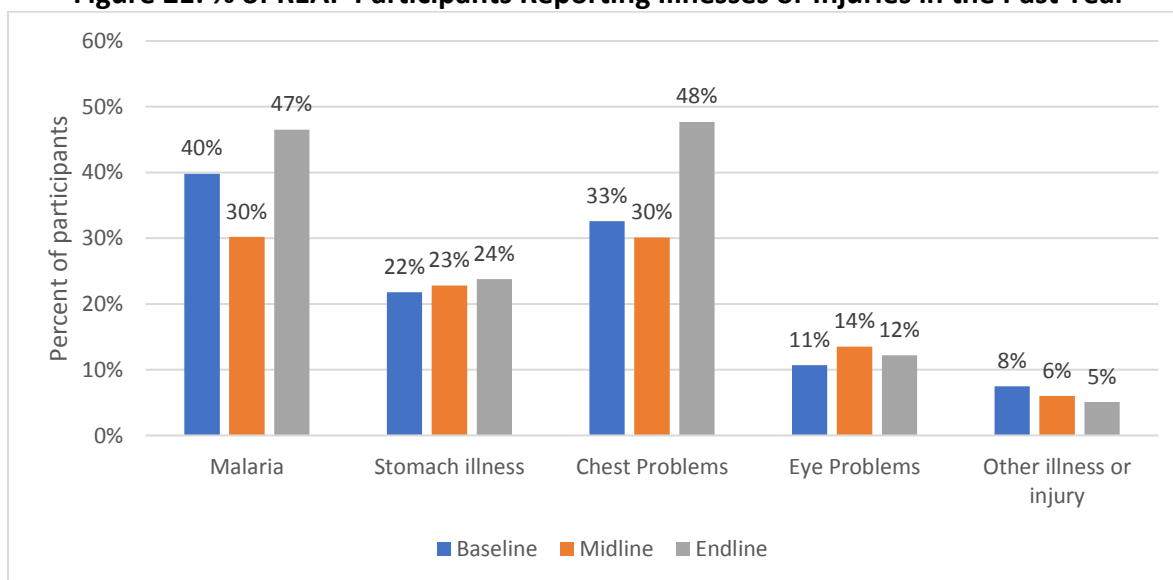
Frequency	Baseline	Midline	Exit
Always (every day)	0.5	0.0	0.0
Pretty often (3-6 times a week)	19.9	2.8	0.4
Once in a while (1-2 times/week)	39.9	21.4	2.5
Rarely (<1 time/week)	29.1	41.4	17.6
Never	10.6	34.4	79.5

The decision by BOMA to update its monthly monitoring form to include questions on food security helped the programs team better understand the participants' food security situation and how this changes over time. Monthly monitoring also helped the team identify and respond to threatening food security issues in a timely manner.

Healthcare Use

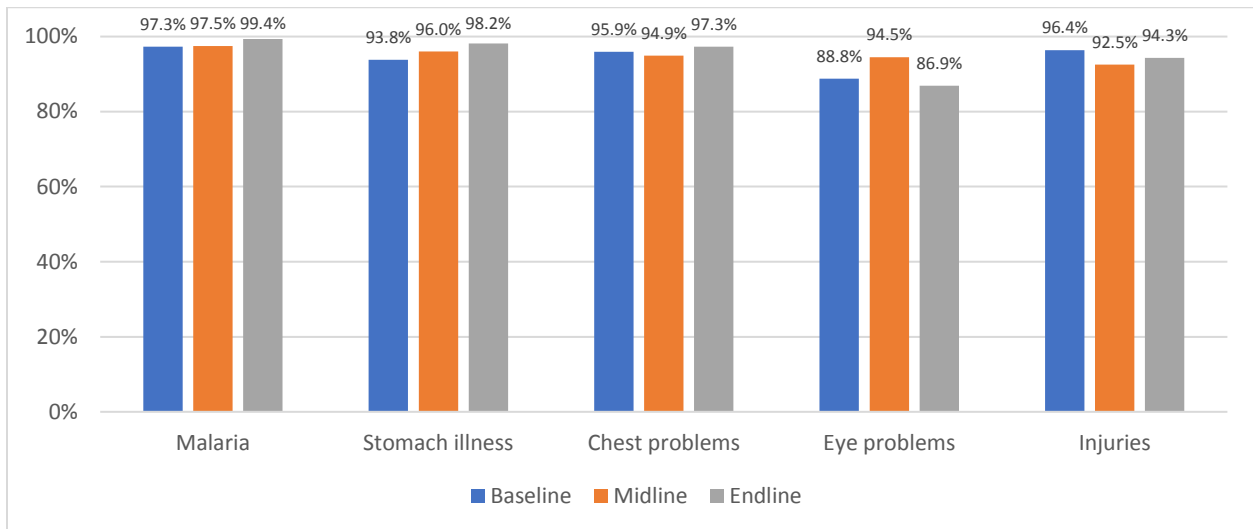
The fourth learning theme addressed in this report is healthcare use. In the baseline and midline survey for the Gates cohort, participants were asked whether they had certain illnesses in the past year, whether or not they sought care for those ailments, and if they did, where they sought care and treatment. Reported cases of malaria and chest-related ailments decreased at midline likely due to drought during the period, and increased from midline to endline likely due to the rains and the lower temperatures (Figure 21).

Figure 21: % of REAP Participants Reporting Illnesses or Injuries in the Past Year



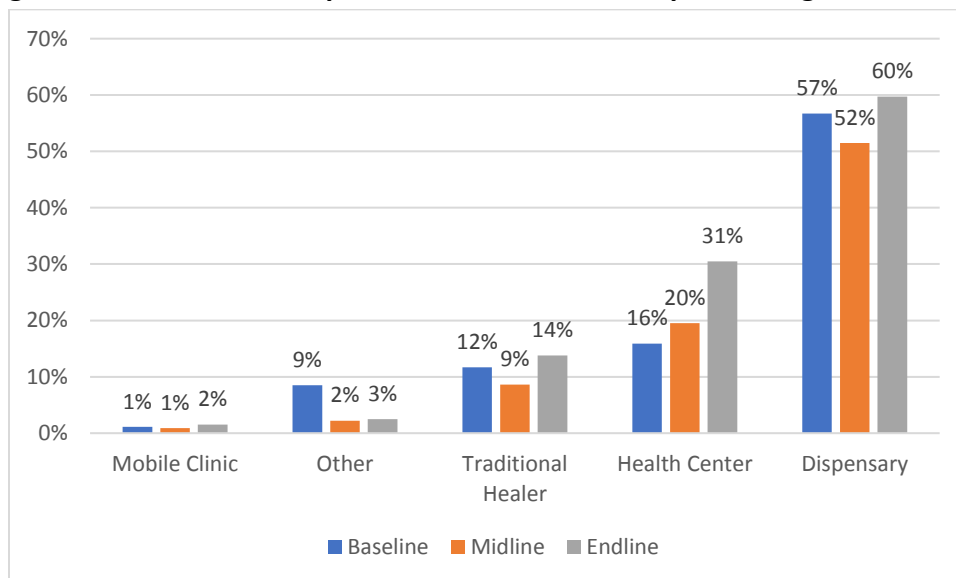
The % of participants who sought treatment for each illness or injury remained high, with over 90% of participants reporting that they sought treatment for each type of illness except eye problems (Figure 22). Seeking treatment for eye problems declined from midline (94.5%) to endline (86.9%).

Figure 22: % of REAP Participants Who Sought Treatment for Various Health Conditions



Participants visiting traditional health centers showed a consistent increase in % of participants from baseline (16%) to endline (31%). At endline, about 14% of participants sought treatment from traditional healers (Figure 23).

Figure 23: Facilities and Options where REAP Participants Sought Treatment

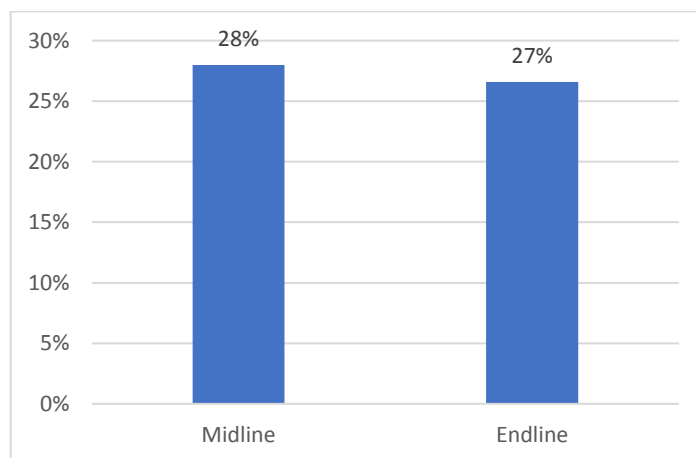


Family Planning

BOMA introduced training modules on family planning into REAP in 2016. This came as a result of data from the 2014 Kenya Demographic and Health Survey that showed that only 11% of the population in Marsabit county used modern methods of family planning, compared to a 55% to 73% uptake in other Kenyan counties. BOMA developed sessions on basic family planning and how and where to access related services, and build these into the training modules delivered by BOMA mentors at savings group meetings.

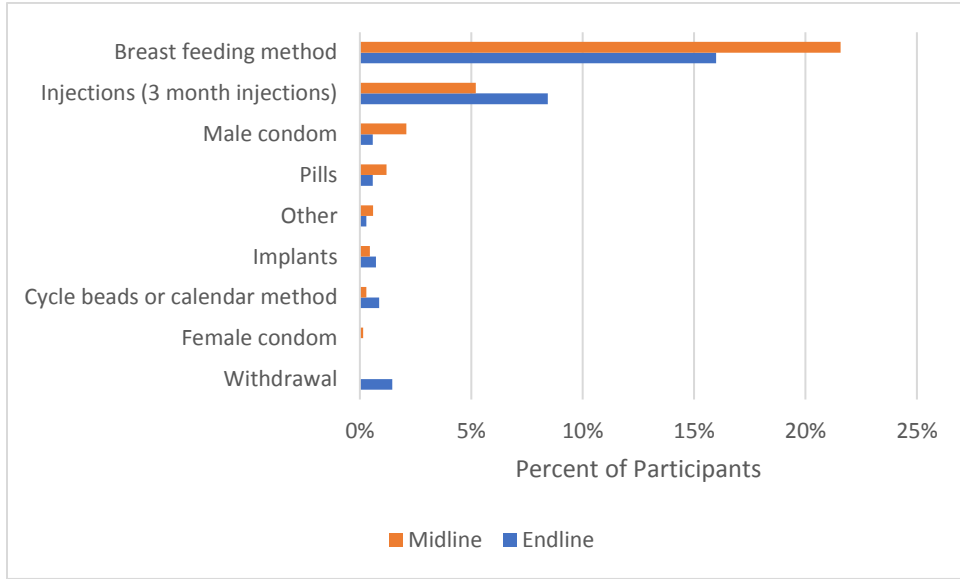
BOMA introduced questions on family planning into the SOLI questionnaire in November 2016. Consequently, no baseline data was collected for the Gates cohort. At midline, 28.0% of participants in the Gates cohort reported that they are using a family planning method, and this did not change at endline (Figure 24).

Figure 24: % of REAP Participants Using a Family Planning Method



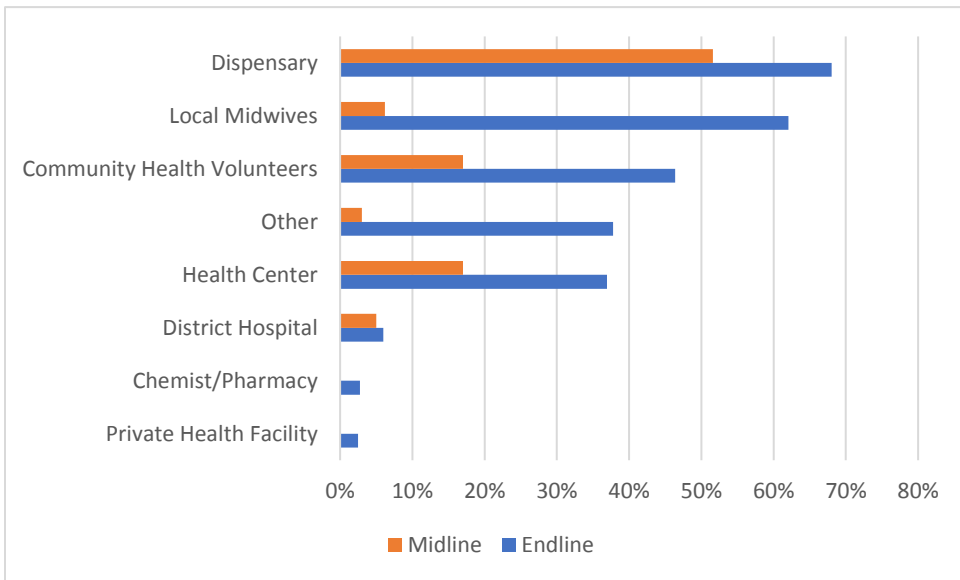
The most common family planning method used by participants is breastfeeding (lactational amenorrhea), followed by injections, condoms, birth control pills, and implants (Figure 25). It is unknown whether all participants reporting use of breastfeeding as a method of birth control are exclusively breastfeeding, or if they have a child under six months and have not yet had their menstrual period return, or if there are misconceptions about the lactational amenorrhea method of family planning.

Figure 25: Family Planning Methods Employed by Participants



The most common places that participants get information about family planning is from the dispensary, local midwives, community health volunteers, and local health centers (Figure 26).

Figure 26. Where REAP Participants Get Information About Family Planning

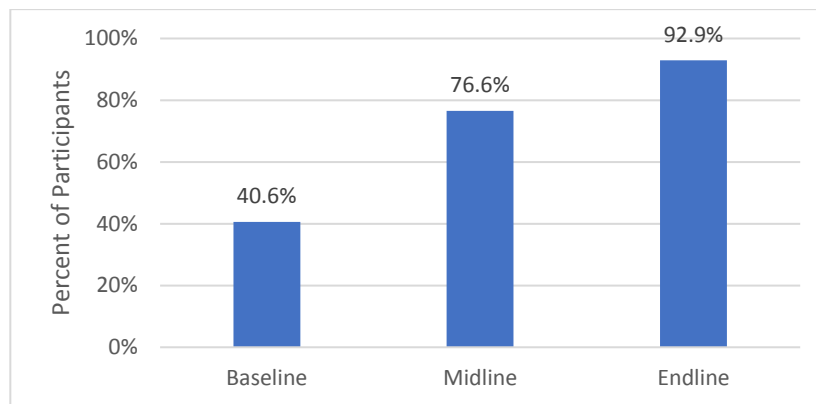


Mobile Phone and M-Pesa Access and Usage

As part of REAP, BOMA provided mobile phones to all participants in the Gates cohort.

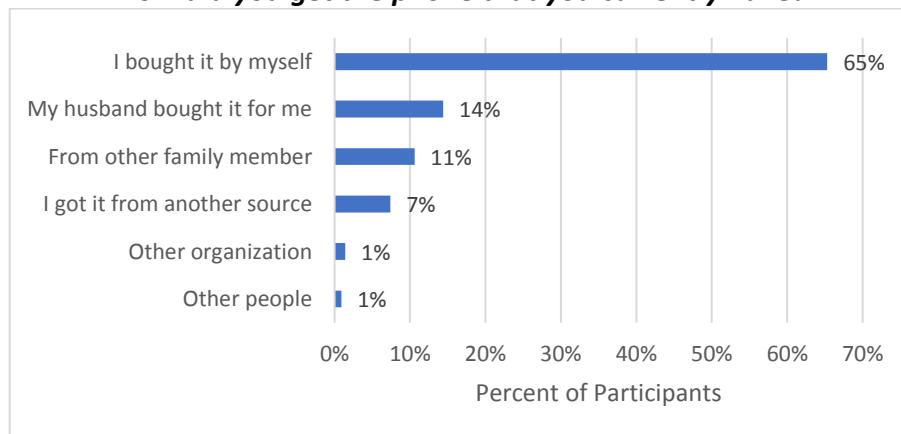
Mobile phone ownership increased from 40.6% at baseline to 76.6% at midline for the Gates cohort (Figure 27), which is largely due to the distribution of phones to participants at the time of the Progress Grant. BOMA had several challenges with bulk phone purchases, and as a result, phones had only been distributed to nine out of the fourteen locations by the time of the midline survey. Mobile phones were delivered to participants in the remaining five locations in July 2017, hence ownership increased to 92.3% at endline.

Figure 27: % of Participants Who Own a Mobile Phone



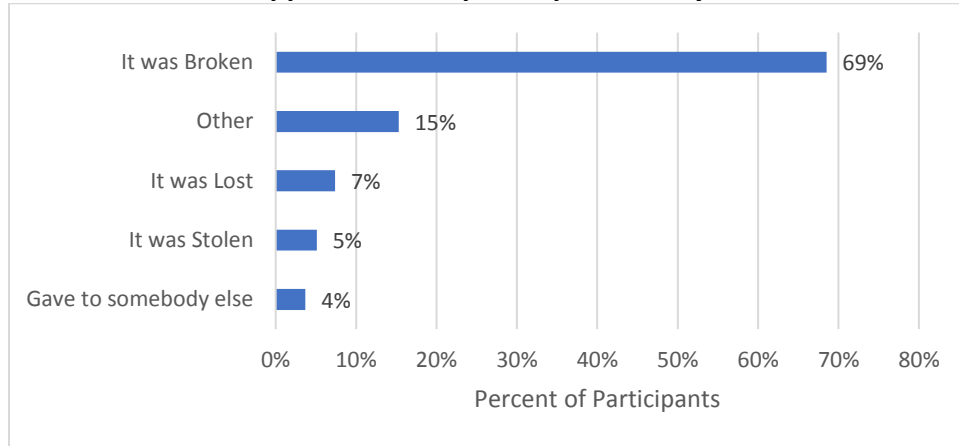
At endline, enumerators asked participants with mobile phones if the phones that they had were those that were provided as part of the project. In total, 73.9% of the participants confirmed that the mobile phones that they had were those provided by BOMA. The chart below shows that majority of participants who had mobile phones that were not provided by BOMA had bought the phones using their own earnings.

Figure 28: REAP Participants Response to "How did you get the phone that you currently have?"



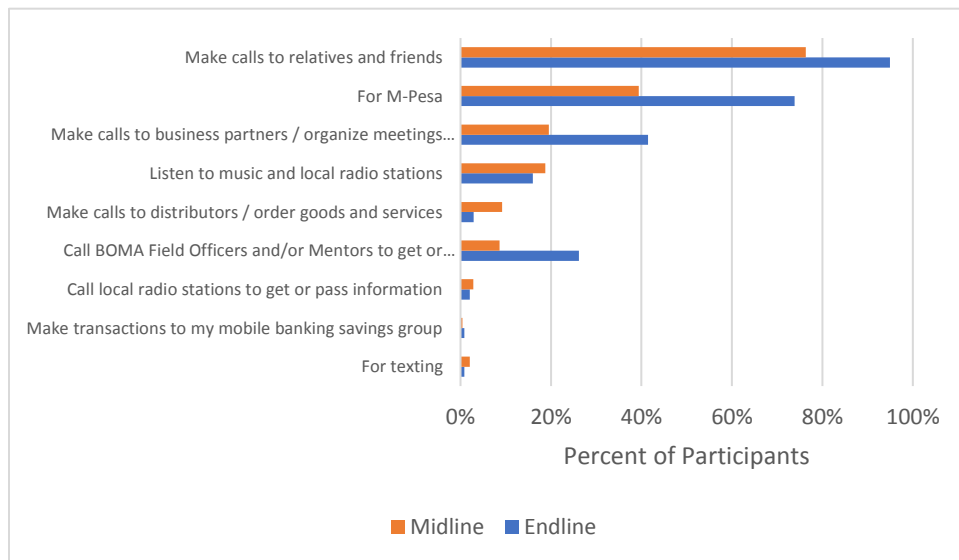
The majority of the participants who do not have mobile phones provided by the project indicated that it was because they were broken (69%).

Figure 29: REAP Participants Response to “What happened to the phone provided by BOMA?”



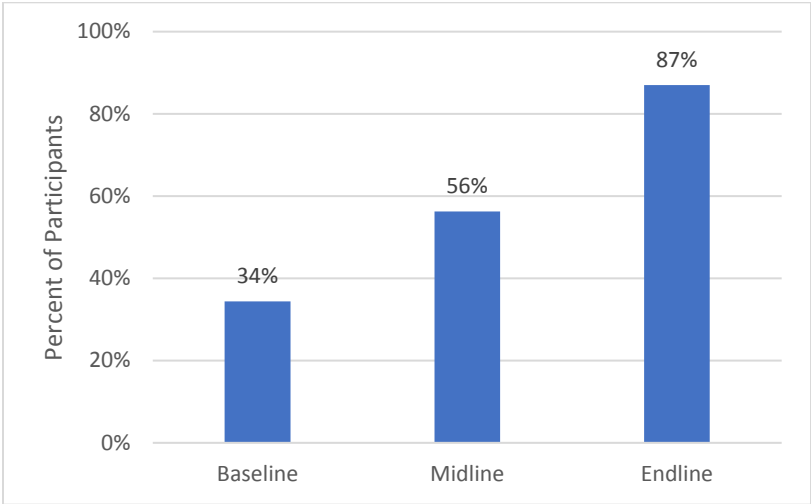
At midline, enumerators asked participants owning mobile phones about how they use their phones. The majority (76%) of participants who own a phone reported they used them to make calls to relatives and friends. Other common usage included M-Pesa (39%) and making calls to business partners (19%). At exit, there is an observed increase in the % of participants who utilized their phones for M-Pesa and to connect with other people.

Figure 30: REAP Participants Response to “How do you use your phone?”



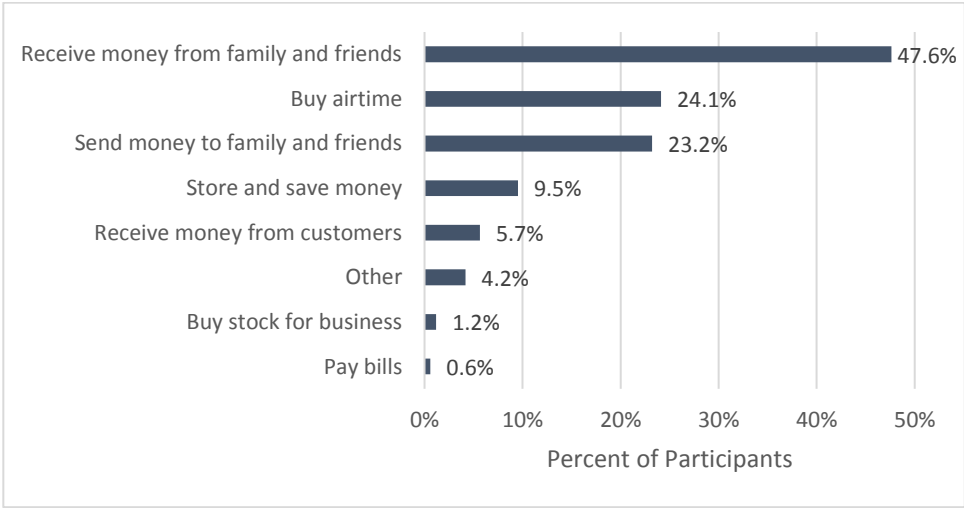
With increased access to mobile phone usage from baseline to endline, M-Pesa use also increased from 34% to 87% (Figure 31). This suggests that access to mobile phones is a significant driver to increasing M-Pesa usage in Northern Kenya.

Figure 31: % of REAP Participants who use M-Pesa



Participants reported they frequently used M-Pesa to receive money from family and friends (47.6%), buy airtime (24.1%), and send money to family and friends (23.2%) (Figure 32). Use of M-Pesa is likely to be the reason for the observed increase in remittances from non-household members. Use of M-Pesa for business transactions was not commonly mentioned.

Figure 32: REAP Participants Response to “How do you use M-Pesa?”



Majority of the participants who use M-Pesa needed assistance to make transactions (82.9%). Support was provided by M-Pesa agents (56%), children (21%), other people (9%), and

participants' husbands (4%). Regarding privacy of their M-Pesa PINs, 66% of participants who use M-Pesa have shared their M-Pesa PINs with other people. PINs have mainly been shared with M-Pesa agents (42%) and their children (18%).

Graduation

The overarching goal of REAP is to graduate women from extreme poverty. In 2016, BOMA introduced a rigorous set of graduation criteria that aimed for broad-based achievement of six mandatory criteria across four categories. BOMA's graduation standards raise the bar in determining whether households are food secure, have multiple sources of income and secure savings, are able to successfully respond to shocks, and have invested in girl's education. These collectively reflect a transition out of extreme poverty. All six of the following criteria must be satisfied for a participant to be considered as having "graduated" poverty:

Food Security

1. No child going to bed without an evening meal in the past week
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 (with formal constitution and credit and loan protocols), has access to credit, and has a minimum of KES 8,000 in savings

Human Capital Investment

6. All eligible primary school-age girls are enrolled in primary school

Table 14 shows the passing rate for each criterion and the overall graduation rate one year into the program, or at midline, and at exit. At midline, the passing rate for food security, sustainable livelihoods, and shock preparedness had significantly increased from baseline.

In July 2017, a BOMA Mentor Workshop (BMW) was held for all Mentors and Field Officers. During the BMW, the group discussed midline graduation criteria results, and specific actions and corrections needed to meet the graduation targets. At the BMW, a revised monthly monitoring form was introduced, which included questions about how each participant is faring in each graduation criteria. BOMA field officers and the M&E team worked together over the past 11 months to monitor this data monthly and follow up with mentors accordingly to ensure that participants are on track toward meeting the graduation criteria at exit. These rigorous efforts led to significant achievements in criteria 1 through 5, but enrolment of primary school age girls remained a challenge.

Table 14: Graduation Rate by Cohort

Category	Baseline	Midline	Endline
Food Security			
1. No child going to bed without an evening meal in the past week	42.8	76	98.5
2. Household members eat at least two meals a day in the past week ¹⁶	80.0	96.7	99
Sustainable Livelihoods			
3. Value of business is 25% higher than total conditional cash transfer	N/A	65	95.9
4. Participant can access more than one source of income ¹⁷	64.9	80.5	96.4
Shock Preparedness			
5. Participant is a member of a savings group, has access to credit, and has a minimum of KES 8,000 in savings	2.0	83.2	99
Human Capital Investment			
6. All eligible primary-school aged girls are enrolled in primary school ¹⁸	56.7	60.6	68.5

* Significantly different from the Gates cohort at baseline, $p < 0.0001$

Shock preparedness which was a main concern at midline has seen the greatest increase from midline, achieving 99% at endline against 83.2% at midline. The increase reflects a sustained effort by BOMA Village Mentors to ensure that participants were consistent with their monthly savings contributions.

¹⁶ Household members refer only to the participant and her children for this criteria. Other adult household members may not be permanent residents of the home, and so we cannot expect REAP to influence the number of meals that they consume.

¹⁷ Sources of income include any type of income that the household receives, either through the participant or through other household members, excluding HSNP and cash transfers.

¹⁸ Primary school-aged girls are defined as being between the ages of 6 and 14. If the participant does not have any eligible primary school-aged girls, she is excluded from this criterion.

Recommendations for Future Research

In 2016, BOMA established rigorous poverty graduation targets to ensure that when participants exit REAP, they will have marked improvement in their socioeconomic conditions and will not return to a life of extreme poverty. The endline survey confirmed that 100% of the Gates cohort passed BOMA's poverty graduation criteria. In assessing these significant gains, BOMA identified opportunities for future research and continuous program growth.

1. Business Performance

Participants in the Gates cohort have demonstrated considerable improvements in financial and productive assets. It is important to put in place strategies to ensure that gains from participating in REAP are sustained even after exit. Some of the efforts that can be explored include financial linkages, market engagement opportunities, and other opportunities that would challenge REAP graduates to grow their businesses. BOMA Project can explore the following opportunities for future research:

Conduct case studies of exited BOMA participants who are aggregating their resources and jointly participating in market engagement activities in new ways. Examples of this include an aggregated distributorship business selling to local BOMA businesses in the Nemeray region, a dairy cooperative in Karare, and a cooperative of women with five different income generating activities in Merrille.

2. Savings

Business and savings groups enable collective action, where social capital is enhanced. There is early evidence that women use this social capital to find market engagement opportunities to increase their productive resources. A further learning area can include:

How can REAP participants further utilize their savings groups to build social capital for increased market engagement and income and business expansion?

3. Livestock Ownership

Drought, floods, and other types of shocks can easily obliterate the gains made through the REAP program, particularly for businesses and savings based in livestock. As part of a future learning agenda, BOMA has identified the following:

Can livestock businesses and savings be "climate proofed" through improved animal health, breed selection, fodder quality, rangeland management, and water storage? What partnerships can BOMA cultivate to improve livestock outcomes and enhance disaster risk reduction in ASAL communities?

4. Women Empowerment

REAP participants have gained significant increased influence and decision-making power in their homes and communities. Building on these successes, BOMA has the opportunity to

explore new elements in programming to further enhance overall women and girls' empowerment in REAP:

How can BOMA design REAP with specific gender intentional outcomes? What targeted programming efforts could improve long-term outcomes beyond the REAP intervention to positively effect health, market engagement and increase digital access for women? What new program aspects can BOMA integrate within the REAP process to further deepen its impact on women and girls' empowerment? These may include:

- *New complementary partnerships that provide commercial or social services*
- *Gender sensitivity training and other similar opportunities for men*
- *REAP for adolescent girls*
- *Family planning, nutrition, and health training sessions as part of life skills training*

5. Education Opportunities for Girls

Research on girls' access to education identified a range of common barriers to girls attending school, including herding, staying home to care for other children, and cultural bias. These areas need to be explored further.

6. Mobile Phone and M-Pesa Access and Usage

BOMA's target population have low levels of literacy and numeracy skills, which are significant barriers to growing productive assets, engaging with formal banking systems, and market engagement opportunities. This is particularly true for digital financial services where numeracy and literacy continue to be a barrier to adoption, despite a growth in phone ownership and the increase in the use of M-Pesa. This raises a major learning need for The BOMA Project to:

Address literacy and numeracy as a barrier in growing businesses and engaging with formal banking systems. How can BOMA work with local adult education agents and service providers to create financial services that are accessible and user-friendly to women living in extreme poverty in the ASALs of Kenya?

Conclusion

The Gates cohort of 750 ultra-poor, pastoral women enrolled in BOMA's poverty graduation program reported a 78.8% increase in average household income; 1,748% increase in savings; 154% increase in spending for education and school expenses; 85% increase in spending on healthcare and medical expenses; 181% increase in livestock ownership; and an overall increased influence in decision making in the household and their communities. In their household, 99.6% of REAP participants reported improved food security, with their children eating at least two meals per day. Toward the goal of women and girls empowerment, primary school enrolment for girls increased by 21%, creating a new generation of women with improved agency and access to opportunity.

In the coming years, BOMA is driven to continue to expand REAP in Northern Kenya and across the drylands of Africa. Having laid out the processes and tools for replication, BOMA is gearing up to work with governments and other large NGOs to implement REAP in multiple locations. BOMA aims to significantly build our organizational capacity to scale and refine our model to optimize replication and adaptation through partners. Moving forward, we will continue to forge strategic partnerships and networks to drive REAP's scale and impact.

We are well on our way to meet our goal to help 1,000,000 women and children break the intergenerational cycle of extreme poverty by 2022. We are grateful to have partners like the Bill and Melinda Gates Foundation that believe in our work and share our audacious vision.

BOMA
PROJECT

