END OF PROJECT EVALUATION
“TRANSFORM AND EMPOWER THE LIVES OF 900
SUBSISTENCE FARMING FAMILIES IN RURAL UGANDA PROJECT”- KYANKWANZI DISTRICT
SEPTEMBER, 2020

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ACKNOWLEDGEMENTS
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We would like to thank the Board of Directors and Management of ARUWE for orientation, guidance and oversight support during the evaluation. We also extend our gratitude to ARUWE staff that worked tirelessly to mobilize and guide the consultant team during data collection.

Special thanks go to the Mr. Kinene Leopold (LCV Chairman), Mr. Teefe Rogers (CDO), Dr. Achong Moses (District Production and Marketing Officer), Mr. Orom Emmanuel (LC3 Gayaza), Ms. Hadija Birungi (VSLA Group leader), Mr. Magoba Hamid (District Agriculture Officer), Mr. Ssekamate Brian (Commercial Officer), Ms. Juliet Ganyana (Chairperson Land Board), Mr. Kamoga Jimmy (Subcounty Agriculture Officer), Ms. Sumayiyah (Subcounty chief), Mr. Matovu John (District Staff Surveyor), Mr. Kasumba Deogracious (Asst. CAO), Ms. Norah (Community Fund).

We further extend our gratitude to beneficiary communities in Gayaza, Kitabona and Nkandwa sub counties and their leaders setting aside their valuable time during the planting season to volunteer information and support the evaluation process.
AFFIRMATION
This End of Project Evaluation for “transform and empower the lives of 900 subsistence farming families in rural Uganda project, Kyankwanzi District” was conducted by Janda Consult Ltd (www.jandaconsult.org) in collaboration with ARUWE staff in Kyankwanzi District. The report, herein, gives a summary of the key findings for the End of Project Evaluation for “transform and empower the lives of 900 subsistence farming families in rural Uganda project, Kyankwanzi District” conducted in September, 2020.

The results described herein, are consistent with the terms of reference as provided by ARUWE. The primary data collected during the project evaluation remains a property of ARUWE consequently, have the right of intellectual property, therefore, the report and its content must only be used with their consent.
GLOSSARY

Evaluation:
Refers to objective and systematic assessment of process aspects of project implementation to establish extent to which the interventions were relevant and appropriate but also the trail of impact by the project including sustainability in attempt to achieve project objectives to answer whether underlying theories and assumptions used in project development were valid.

Hungry
Means to have a compelling need or desire for food, to have painful sensation or to be in a state of weakness caused by the need for food

Lack of resources
Refers to the lack of money to buy food or inability to produce or barter for food

No food to eat
Means that the food was not available in the house and could not be accessed by usual means (e.g., through purchase, barter, or from garden, or field, from storage)

Poverty
Poverty reflects a current state of deprivation, of lacking resources or capabilities to satisfy current needs.

Sustainability
This is the ability of partners to maintain and replicate results of project interventions after the termination of the project.

Vulnerability
The term vulnerability as used in this report is associated with the probability of being poor in the future. It includes the risk of becoming poor in the future if not currently poor; or of poor households remaining in poverty.

Women's Empowerment in Agriculture Index (WEAI)
Measures the empowerment, agency and inclusion of women in agriculture sector
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<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ACDP</td>
<td>Agriculture Cluster Development Project</td>
</tr>
<tr>
<td>ARUWE</td>
<td>Action for Rural Women’s Empowerment</td>
</tr>
<tr>
<td>CDO</td>
<td>Community Development Officer</td>
</tr>
<tr>
<td>DLG</td>
<td>District Local Government</td>
</tr>
<tr>
<td>EPE</td>
<td>End of Project Evaluation</td>
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<tr>
<td>FGD</td>
<td>Focus Group Discussion</td>
</tr>
<tr>
<td>GAPs</td>
<td>Good Agricultural Practices</td>
</tr>
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<td>GALS</td>
<td>Gender Action Learning System</td>
</tr>
<tr>
<td>GoU</td>
<td>Government of Uganda</td>
</tr>
<tr>
<td>HDDS</td>
<td>Household Dietary Diversity Scores</td>
</tr>
<tr>
<td>HHS</td>
<td>Household Hunger Scale</td>
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<tr>
<td>IFPRI</td>
<td>International Food Policy Research Institute</td>
</tr>
<tr>
<td>KI</td>
<td>Key informant</td>
</tr>
<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
</tr>
<tr>
<td>NGOs</td>
<td>Non-Government Organizations</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Scientists (SPSS)</td>
</tr>
<tr>
<td>VSLA</td>
<td>Village Saving and Loan Association</td>
</tr>
<tr>
<td>WEAI</td>
<td>Women Empowerment in Agriculture Index</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

This report summarizes the key findings of end of project evaluation for “transform and empower the lives of 900 subsistence farming families in rural Uganda project” commissioned by Action for Rural Women’s Empowerment (ARUWE), and conducted in September, 2020. The project was funded by COMIC RELIEF through Send a Cow [SAC] and implemented for 3 years (June 2017-June 2020) in Kyankwanzi District targeting 900 (800 women and 100 men) subsistence farming families.

The overall goal of the project was to transform lives and empower subsistence farming families in rural Uganda particularly in the three sub-counties of Gayaza, Nkandwa, Kitabona in Kyankwanzi District. It focused on two crops; maize and beans but also encouraged crop diversification for improved food and nutrition security. The project used mixed methodologies that include; Gender Action Learning System (GALS), Village Saving and Loans Association (VSLA), group and cooperative methodology.

The project was implemented through four objectives namely;

(i) **Farmer households increase agricultural productivity.** This involved enhancing adoption of good agricultural practices, access to improved seeds, access to agricultural financing and application of climate resilient agricultural practices.

(ii) **Farmer household increased income, assets and land resources.** This involved enhancing quality control and value addition through training in post-harvest techniques, access to machinery and equipment. It also involved support for collective marketing and enhancing land security.

(iii) **Households improve their food security.** This involved support for acquiring practical skills in Agro-ecology farming practices, good agronomic practices, pest and diseases control and bio-intensive gardens at households.

(iv) **Women farmers experience increased financial empowerment and decision making.** This involved enhancing women’s capacity to realize their full potential in their agriculture undertakings especially participation in key decision-making processes.

The project had come to an end, therefore, ARUWE sought to conduct an end of project evaluation. The end of project evaluation sought to determine the relevance, appropriateness, effectiveness efficiency, impact, sustainability, lessons for learning but also assess how the project results and objectives contribute to the overall ARUWE/Comic Relief strategy and make recommendations.

The evaluation also sought to answer the following questions (i) How women’s involvement in agribusiness initiatives result in increased income for women farmers? (ii) How women’s involvement in agribusiness initiatives result in increased capital assets within the household? (iii) How women’s involvement in agribusiness initiatives result in increased participation in decision-making for women within the household? (iv) How women’s involvement in agribusiness initiatives result in increased food consumption and access to primary education for children in the household?
The evaluation methodology combined both qualitative and quantitative techniques. Quantitative methods involved household surveys using a structured questionnaire from 389 beneficiary households selected using simple random technique. The survey tool captured; Household social-economic data, agricultural production and productivity, Household Dietary Diversity Scores (HDDS); Household Hunger Scale and Women Empowerment in Agriculture Index (WEAI).

Qualitative methods involved data collection through five focus group discussions (FGDs) and seventeen key informant interviews using semi-structured FGD guides and key informant interview guides respectively. Other methods used include; observations, personal stories from beneficiaries and selected most significant change stories.

Social-economic and agricultural production and productivity data was processed and analyzed using Statistical Package for Social Scientists (SPSS). Analysis of Household Dietary Diversity Scores (HDDS) was done by summing the values (0 or 1) the different food groups (cereals, roots, vegetables, fruits, legumes, meat, fish, eggs, milk) consumed by household members during the last 24 hours ie. Sum \( (a+b+c_+ .\ldots c_L) \). The HDDS has a value (0-12). The average HDDS = \( \text{Sum (HDDS)} / \text{Sample households} \)

Household Hunger Scale was analyzed using data collected through recall methods in the past 4 weeks (30 days) and by summing responses to six standard items that give rise to three household hunger categories: “Little to no household hunger (scores 0-1), “moderate household hunger (scores 2-3), and “severe household hunger” (scores 4-6).

Analysis of the Women Empowerment in Agriculture Index (WEAI) was analyzed using the five domains; women empowered in decisions about agricultural production and productivity; women with access to and decision-making power over productive resources; women in control over use of income; women who are empowered in community leadership and women empowered with available time for use and determined as follows:

\[ 5DE = H_e + H_n (A_a) \]

Where; \( H_e \) = % of women who are empowered; \( H_n \) = % of women who are not empowered (1-H_e)
\( A_a \) = % of dimensions in which disempowered women have adequate achievement

Qualitative data consisting of notes and stories from in-depth interviews and discussions with key informants and FGDs were analyzed using thematic and content analysis methods. Results from the qualitative and quantitative data analysis were triangulated to enable meaningful interpretation of results.

Most significant stories and quotations from respondents were also included in the report to bring out the voices of the participants especially mobile community.

In addition, the evaluation reviewed key documents such as; Project startup form, Baseline report, Adapting GALs in Development Programs, Mid-term review report and project progressive reports. The recommended Covid-19 prevention and control measures such as social-distancing, use of face masks, hand washing and sanitizing were observed.

Key evaluation results are summarized in Table 0.1 accompanied with brief narrative in the paragraphs that follow. Detailed results and discussion are presented in Chapter 3 of this report.
Table 0-1: Summary of Key Evaluation Results

<table>
<thead>
<tr>
<th>Key findings</th>
<th>Baseline 2017</th>
<th>End of project 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal:</strong> The overall goal of the project was to transform lives and empower subsistence farming families in rural Uganda, Kyankwanzi District.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 1: Farmers increase agricultural productivity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1b Average volume of maize produced per farmers last season (Kg)</td>
<td>221.9</td>
<td>1,589</td>
</tr>
<tr>
<td>Average volume of beans produced per farmers last season (Kg)</td>
<td>107.3</td>
<td>515</td>
</tr>
<tr>
<td>1c Average volume of maize traded by farmers last season (Kg)</td>
<td>5,146</td>
<td>1,449</td>
</tr>
<tr>
<td>Average volume of beans traded by farmers last season (Kg)</td>
<td>1,385</td>
<td>468</td>
</tr>
<tr>
<td>1d Satisfaction with skills acquired by farmers (measured annually)</td>
<td>66%</td>
<td>91.7%</td>
</tr>
<tr>
<td>1e Farmers confidence with their ability to access to markets (measured annually)</td>
<td>59%</td>
<td>90.4%</td>
</tr>
<tr>
<td><strong>Outcome 2: Farmers’ income, household assets and savings increase</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a Number of households earning over $365($2/day) from the sale of their produce last season</td>
<td>$\geq 2 = 196$</td>
<td>$\geq 2 = 279$</td>
</tr>
<tr>
<td>$\geq 1 &lt; 2 (647)$</td>
<td>$\geq 1 &lt; 2 (418)$</td>
<td></td>
</tr>
<tr>
<td>$&lt; 1 (333)$</td>
<td>$&lt; 1 (202)$</td>
<td></td>
</tr>
<tr>
<td>2b Percentage of households reporting increased ownership of assets</td>
<td>27.9%</td>
<td>73.8%</td>
</tr>
<tr>
<td>2c Number of households that saved money from sale of agricultural produce (Disaggregated M, F) headed households</td>
<td>1,046 (Male-365 Female-681)</td>
<td>646 (64 Male, 582 Female)</td>
</tr>
<tr>
<td>2d Percentage of farmers who have been able to able to repay their agricultural loans in full within the agreed loan period</td>
<td>85.7%</td>
<td>60.14%</td>
</tr>
<tr>
<td>2e Number of women farmers that own legally recognized land</td>
<td>368(34%), average 3.6 acres owned</td>
<td>526(58%), average 4.36 acres owned</td>
</tr>
<tr>
<td>2f Percentage of farmers confident to in their ability to increase their household living standards</td>
<td>55%</td>
<td>73.5%</td>
</tr>
<tr>
<td>2g Percentage of farmers with confidence in their ability to meet their income needs</td>
<td>69%</td>
<td>93%</td>
</tr>
<tr>
<td><strong>Outcome 3: Households improve their food security</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3a Average number of meals consumed by households consumed per day in household</td>
<td>3 meals (66.1%)</td>
<td>3 meals (74.9%)</td>
</tr>
<tr>
<td>3b Household dietary diversity score (HDDS)</td>
<td>2.1</td>
<td>4.1</td>
</tr>
<tr>
<td>3c Household food insecurity access scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food secure (1 or2) 38%</td>
<td>Food secure (1 or2) 18%</td>
<td></td>
</tr>
<tr>
<td>Food insecure without hunger (3 or 4) 57%</td>
<td>Food insecure without hunger 16.7%</td>
<td></td>
</tr>
<tr>
<td>Food insecure with hunger (moderate) (5 or 6) 96%</td>
<td>Food insecure with hunger (moderate) 33.3%</td>
<td></td>
</tr>
<tr>
<td>Food insecure with hunger (severe) (7 or 8) 91%</td>
<td>Food insecure with hunger (severe) 32%</td>
<td></td>
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</tbody>
</table>
### Key findings

**Goal:** The overall goal of the project was to transform lives and empower subsistence farming families in rural Uganda, Kyankwanzi District.

<table>
<thead>
<tr>
<th>3f</th>
<th>Percentage of farmers with confidence in their ability to meet their household food needs</th>
<th>Baseline 2017</th>
<th>End of project 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>70.3%</td>
<td>71.9%</td>
</tr>
</tbody>
</table>

#### Outcome 4: women farmers experience increased financial empowerment and decision making

<table>
<thead>
<tr>
<th>4a</th>
<th>Percentage of women farmers participating in decision making on major household purchases (disaggregated by male and female headed households)</th>
<th>Male HHH 57.1%</th>
<th>Male HHH 37.1%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Household wife 15.2%</td>
<td>Household wife 30.7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wife and husband 27.3%</td>
<td>Wife and husband 32.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4b</th>
<th>Percentage of women farmers participating in decision making on major household saving (disaggregated by male and female headed households)</th>
<th>Male HHH 59.6%</th>
<th>Male HHH 5.4%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Household wife 14.7%</td>
<td>Household wife 13.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wife and husband 25%</td>
<td>Wife and husband 76.2%</td>
</tr>
</tbody>
</table>

| 4c | Number of women farmers who are elected to a titled position of leadership within the 3 farming cooperatives, farming groups or local community structures. | 4              | 52             |

| 4d | Percentage of community perception that women can confidently speak up at household level and community meetings | 65%            | 85.7%          |

| 4e | Percentage of women that perceive of their ability to influence community leaders | 50%            | 73%            |

| 4f | Community leaders perception of women’s voice | 46.7%          | 75%            |

### WEAI Indicators

- Percentage of women empowered in decisions about Agricultural Production: 56.0%
- Percentage of women with Access to and Decision-Making Power over Productive Resources: 61.9%
- Percentage of women in Control over Use of Income: 41.6%
- Percentage of women who are empowered in Community Leadership: 32.9%
- Percentage of women empowered with available time for use: 14.9%

**Overall WEAI:** 68%
**Evaluation question framework:**

(i) **Did women’s involvement in agribusiness initiatives result in increased income for women farmers?**

Nearly all women earned their income from sale of agricultural produce. The project constructed grain storage facilities in close proximity which enabled women farmers to collectively bulk, store and negotiate prices through group marketing. Consequently, there was an increase in average household income generated from sale of produce from Ush 300,000 baseline 2017 to Ush 960,617 EPE.

(ii) **Did women’s involvement in agribusiness initiatives result in increased capital assets within the household?**

Most women, whenever they sold produce, used part of the money to buy assets. Through bulking and group marketing of produce, they generated substantial income which was used to acquire assets. This was observed from results that revealed an increase from 27.9% baseline year to 73.8%EPE of households who said their assets had increased. For example, the average land size owned by households increased from 4 acres at baseline in 2017 to 4.36 acres (1.24 acres rented and 3.12 acres owned). Notable was an increase from 368 in 2017 to 526 (58%) in number of women farmers that own legally recognized land. Other than land as capital asset, majority 84.6% owned chicken/ducks, 64.3% had goats/sheep, 24.7% kept cattle, and 56.6% had pigs.

(iii) **Did women’s involvement in agribusiness initiatives result in increased participation in decision-making for women within the household?**

Women were involved in bulking and group marketing of produce from their farms to generate income. As a result, 61.9% of women had decision making power over productive resources. Further evidence showed that women in the project area attained WEAI score of 68%, reflecting significant empowerment although it fell short of the adequacy level of 80% for women empowerment.

(iv) **How women’s involvement in agribusiness initiatives result in increased food consumption and access to primary education for children in the household?**

Results indicated increase in resilience and reduced vulnerability to food insecurity as more households realized basic needs especially access to adequate quality food all the time, good mother/child nutritional health. Households with enough food to meet their family’s needs increased from 70.3% baseline 2017 to 71.9%EPE and households that had 3 meals all year round increased from 66.1% baseline 2017 to 74.9%EPE and the average HDDS increased from 2.1 baseline to 4.1EPE reflecting improved access to a variety of foods. Access to primary education for children in the household, 80% of 6-12 year old in Ntwetwe County that covers the three project sub-counties were attending primary education (UBOS, 2019).
Conclusion
ARUWE’s interventions in Kyankwanzi have had a successful transformative impact on the livelihoods of smallholder farmers through agricultural productivity growth and improved agribusinesses market integration as summarized below:

- The most significant transformative impact was reduction in household poverty. Progress in household poverty reduction was strongly reflected in improvement in various dimensions of welfare including increased assets (household and land assets) and income, improved housing and general improvement in quality of life. However, fluctuations in commodity prices affected household agricultural incomes.
- Increased resilience and reduced vulnerability to food insecurity with more households realising basic needs especially access to adequate quality food all the time. Nonetheless, farmer households still faced some production constraints including; limited access to improved technologies, drought, pests, diseases and the lack of full land ownership especially women.
- Microfinance institutions and group savings and loans associations (VSLAs and SACCOs) greatly improved household access to affordable credit across the project areas and allowed for a larger pool of savings to finance expansion in investment. This helped households to acquire land, pay medical bills and school fees and expand businesses contributing to improved household welfare. The only concerns related to low liquidity levels among VSLAs, and non-repayment of loans by a few households.
- Visible was the paradigm shift on who should make household financial decisions. There was noticeable increase in women’s involvement in making household decisions regarding asset purchases, borrowing and saving. Also notable was an increase in women advocating for their needs and taking up leadership positions.

Recommendations
Following the above conclusions, the following recommendations can be forwarded to ARUWE and other stakeholders for ensuring the sustainability of project outcomes and future programming:

I. Training in best agronomic practices, organic farming techniques, environmental conservations and climate change resilience and adaptation practices were important components of project implementation given the current worsening global warming crisis and climate change. The farmers and local government officials appreciated these practices especially climate adaptation practices for example the tree seedlings which were distributed to the beneficiaries. The evaluation recommends selection of model farmers to be trained in nursery bed management and support them to distribute to fellow farmers as a business. This would promote employment as well as providing sustainable sources of tree seedlings to the communities. Kyankwanzi District lies within a dry cattle corridor, whose vegetation is overwhelmed by cattle and massive land opening for crop fields. Therefore, ARUWE (or other actors including government) needs to rethink of promoting community-based tree nurseries to promote re-afforestation in this dry corridor.

II. CATs are a vibrant community structure which trained farmers and fostered adoption best agronomic practice. It is very important, therefore, that even when the project ended, ARUWE continues support and/or follow-up the CATs to replicate and scale the best agronomic practices
among other community members, for sustainability; or handover this structure to be managed by local government.

III. Supplying farmers with planting materials of beans and maize was highly commended by the farmers and local government officers as having been a key intervention during the project which contributed to production. However, each farmer received these seeds once depending on the year of recruitment. Farmers recruited during Y1&2 expected more seeds in the subsequent year, which may not have been feasible. Hence, in order to break the dependence syndrome of farmers always waiting to receive seed donations every season, farmers should be supplied with parent seed stock at the beginning of the project and further trained to propagate and stock their seed for the subsequent seasons.

IV. According to information gathered during the evaluation, one of ARUWE’s priorities was to promote organic farming for environmental sustainability. For the farmers who adopted these practices, they reported the process was time consuming and tiresome to make the organic fertilizers and inputs compared to using inorganic inputs, which are readily available on the market. ARUWE should (individually or in partnership with other actors including government) venture into research and production of organic inputs and fertilizers to curb the proliferation of inorganic inputs.

V. ARUWE received 120,000,000UGX for community agriculture revolving loans, which was administered through Community Fund MFI. This fund supported farmers to hire labor for opening up fields, planting, weeding, harvesting and buying inputs that were not provided by the project. Due to COVID 19 effects, a number of farmers were not in position to pay back their loans promptly. We recommend that ARUWE continues to follow up Community Fund MFI to ensure that these loans are recovered and re-disbursed among the farmers to enable them further increase production. ARUWE and Community Fund need to further grow this fund in order to continue supporting progressive and outstanding farmers with bigger loans.

VI. VSLAs and cooperatives were important structures through which farmers were organized to promote collective pool of finances through saving and bulking of produce for collective marketing. There were many advantages attached to these models such as collective responsibility, unity, mutual support and economies of scale. We recommend that ARUWE upholds this approach in subsequent program designing, but also ultimately work to ensure these VSLAs and cooperatives already formed are sustainable.

VII. We acknowledge that ARUWE’s niche was to support women empowerment; and appreciate that while empowering women, ARUWE was deliberately proactive to include some men. This helped to remove any fears, mistrust and uncertainties that men could develop if they were not brought on board to understand what the organization was doing with the women. The men involved in the project were very positive and supportive of women empowerment, and worked hard to sensitize other community members. Hence, involving men was fundamental in promoting buy-in on the part of men and promoting men’s appreciation of women’s empowerment and men’s support of the women. We, therefore recommend that ARUWE upholds this inclusion in subsequent programming, but also gradually scale up this inclusion beyond 10% involvement of men as the case has been in this project.

VIII. ARUWE should strengthen household income, food and nutrition security by ensuring equitable access to land and protecting land rights of vulnerable farmers especially the women.
IX. As VSLA savings grow the risks associated with safety also increase, and the old strategy of keeping keys with different members cannot reduce money theft. Hence, the need to rethink of appropriate VSLA approach linked to mobile banking services.

**Lessons learned**

- Relying solely on rain-fed agriculture is not a sustainable production strategy for farming households due to climate changes. The organization should reflect on other innovative affordable production approaches that can support communities to produce crops throughout the year, regardless whether it rains or not.

- Inclusion of men and local leaders during project delivery nurtures their buy-in. Men and local leaders who participated in this project have appreciated the importance of women empowerment, and have become great allies and ambassadors in sensitizing communities to further promote women’s rights and economic empowerment.

- Communities recognize and appreciate women that have income to bridge gaps and relieve men of some household financial requirements. Household standard of living and marital relationships improve when both the spouses participate economic activities.

- The quality of household financial decisions improves when both spouses are members of the same VSLA given that they have an opportunity to attend trainings, and learn from the peers.
CHAPTER 1: INTRODUCTION

1.1 Introduction
This report gives a brief description of key findings for end of project evaluation titled “transform and empower the lives of 900 subsistence farming families in rural Uganda project” commissioned by Action for Rural Women’s Empowerment (ARUWE) and conducted by Janda Consult Limited in September, 2020.

1.2 Structure of the Report
This report is organized in four chapters that describe both the process and results of the end of project evaluation presented in different forms to ease readers understanding. Chapter one consists of the background, purpose, and scope of the evaluation. Chapter two describes the methodology used including a brief description of the sample size, sampling, data collection methods, tools, and data analysis. Chapter three presents the evaluation findings. Chapter four provides the conclusion and recommendations.

1.3 Background
Action for Rural Women’s Empowerment (ARUWE) is a non-profit, Non-Government Organization working with marginalized groups of people, especially rural women and children in Uganda. ARUWE received a grant from COMIC RELIEF through Send a Cow [SAC] to implement a three years Livelihood project in Kyankwanzi District. The overall goal of the project was to transform lives and empower subsistence farming families in rural Uganda. Table 1.1 gives a summary of project goal, objectives and activities.

The project was implemented through four objectives namely: (i) **Farmer households increase agricultural productivity.** This focused on enhancing adoption of good agricultural practices, access to improved seeds, access to agricultural financing and application of climate resilient agricultural practices. (ii) **Farmer household increased income, assets and land resources.** This focused on enhancing quality control and value addition through training in post-harvest techniques, access to machinery and equipment. It also involved support for collective marketing and enhancing land security. (iii) **Households improve their food security.** This involved support for acquiring practical skills in agro-ecology farming practices, good agronomic practices, pest and diseases control and bio-intensive gardens at households. (iv) **Women farmers experience increased financial empowerment and decision making.** This involved enhancing women’s capacity to realize their full potential in their agriculture undertakings especially participation in key decision-making processes.

The project was implemented in three years (June 2017-June 2020) targeting 800 vulnerable rural women farmers including 100 men in position leaders and or spouses. It was implemented in three sub-counties (Gayaza, Nkandwa and Kitabona) and focused on two crops namely; maize and beans much as it encouraged crop diversification for improved food and nutrition security. The project implementation adopted mixed methodologies including: Gender Action Learning System (GALS) methodology to ensure women and men play their roles in social-economic development, Village Saving and Loan Association aimed at enhancing financial access, group and cooperative methodologies aimed at promoting bulking and collective marketing. The project had come to an end thus ARUWE sought to conduct an end of project evaluation.
1.4 Purpose of evaluation
The main purpose of the evaluation was to determine the relevance, appropriateness, effectiveness efficiency, impact, sustainability, lessons for learning but also assess how the project results and objectives contribute to the overall ARUWE/Comic Relief strategy and make recommendations. The evaluation also sought to answer the following questions (i) Did women’s involvement in agribusiness initiatives result in increased income for women farmers? (ii) Did women’s involvement in agribusiness initiatives result in increased capital assets within the household? (iii) Did women’s involvement in agribusiness initiatives result in increased participation in decision-making for women within the household? (iv) Did women's involvement in agribusiness initiatives result in increased food consumption and access to primary education for children in the household?

Table 1-1: Project Goal, Outcomes and Key Activities

<table>
<thead>
<tr>
<th>Project Goal</th>
<th>Outcomes</th>
<th>Key Activities Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>To transform lives and empower subsistence farming families in rural Uganda</td>
<td>Farmers increase agricultural productivity</td>
<td>Training in Agronomic practices, Training climate resilient agriculture, Provision of quality seeds, PHH training, Provided PHH equipment, Constructed storage facilities, Training of TOT volunteers, Disseminated weather information</td>
</tr>
<tr>
<td></td>
<td>Farmers household income, assets, and land resources</td>
<td>Land tenure systems, land rights policy awareness, Training on collective marketing and bargaining, Land rights and acquisition, Training in gender using GALs</td>
</tr>
<tr>
<td></td>
<td>Households improve their food security</td>
<td>Training on nutrition</td>
</tr>
<tr>
<td></td>
<td>Women farmers experience increased financial empowerment and decision making</td>
<td>Training in cooperative leadership and management, Link farmers to agricultural revolving fund, Training in agribusiness</td>
</tr>
</tbody>
</table>

1.5 Scope of the study
The evaluation was conducted for about 25 days from 1st September, 2020 to 25th September 2020. It was conducted in three sub-counties that include; Gayaza, Nkandwa and Kitabona1 in Kyankwanzi District (Photo 3-), covering 29-Parishes and 38-villages. Quantitative data was collected from 389 project beneficiaries' households. Qualitative data was collected from FGDs comprising of women, men. Other sources were key informants consisting of group leaders, microfinance manager, District/sub-county technical staff, ARUWE staff. It also involved a review of documents including: Project startup form, Baseline report, Adapting GALs in Development Programs, Mid-term review report and ARUWE- CR six Month and annual reports. It also involved data analysis and report writing.

1 Kitabona Subcounty was created recently after carving off Ntwetwe Town Council
Photo 1-1: Map of Kyankwanzi District showing project area sub counties
CHAPTER 2: METHODOLOGY

This chapter provides a brief description of the methodology used in the evaluation of the “transform and empower the lives of 900 subsistence farming families in rural Uganda project”. The chapter consists of study design, sampling, data collection procedures, data analysis including quality control and limitation/mitigation measures.

2.1 Study design
The study was participatory, cross-sectional and descriptive employing both quantitative and qualitative methods guided by evaluation questions and objectives.

2.2 Sample size and sample allocation
The evaluation was keen to derive accurate results thus ensured scientific representation of the sampled population. The sample comprised n= 389 farming households, which was 43% of total 900 project beneficiaries. This sample was derived using the following formula

\[ n = \frac{z^2 \cdot pq}{\delta^2} \]

Where;
\( n = \) desired sample size; \( \delta = \) margin of error to be tolerated in the sample and is taken as 5%; \( p = \) proportion of target population of with characteristics of farming households is 50%; \( z = \) is 1.96 at 95% confidence level; \( q = (1-p) \)

The sample n=389 was distributed across the study sub-counties using the Probabilities Proportionate to Size (PPS), this enabled the selection of more farming households from sub-counties that had relatively higher population of beneficiaries consequently; Gayaza 190(48.8%), Kitabona 89(22.9%) and Nkandwa 110(28.8%) beneficiary households.

Households sampling plan
Multi-stage random sampling technique was used to arrive at farming household respondents. Sampling involved cascading from Sub-counties, Parishes, Villages and households.

In the first stage, the number of parishes in each sub-county were determined and randomly selected.

At the second stage eligible villages will be selected from each parish. The proportion treatment technique (also known as Probability Proportionate to Size, PPS) was used to select more villages from parishes that had relatively higher number of villages.

Finally, households were randomly selected from villages using the list of beneficiary households in the three sub counties (Gayaza, Nkandwa and Kitabona). The lists of sampled households were provided to enumerators who liaised with the local leaders to locate the sampled households. In case of refusals or households with no adult at home during the visits, replacements were done by supervisor using randomly selected replacement household’s lists.
2.3 Sampling for KI and FGDs
Key informants were purposively selected on account of their knowledge about the project. 17 key informants were interviewed these include; 1-DLG production officer, 1-Police Family Unit (District level), 3-Political leaders (LC3), 2-Key ARUWE staff, 2-CD0-sub-county, 1-Microfinance, 3-Group leaders (Production, Marketing/Co-ops and VSLA) and 2-Market linkage partner.
FGD participants were randomly selected from list of beneficiaries. These were interviewed in groups of 6-9 to get in-depth discussion on how the project impacted them including perceived changes in their lives. Four (4) FGDs comprising of 3 women FGDs (1 per sub county), 1FGD for men were organized and interviewed using FGD guide.

2.4 Data Collection
Quantitative data was collected from farming households using a structured questionnaire uploaded on mobile phone devices. Only one questionnaire was administered per household. The questionnaire comprised of modules adopted with minor modifications in order to measure the different project outcomes. The modules include: ACDP baseline survey tool to measure agricultural production and productivity (World Bank, 2019); Household Dietary Diversity Scores (HDDS) (FAO, INDEX Project 2018).
Household Hunger Scale were used to estimate the prevalence of food insecurity and utilization in the target community (Terri Ballard etal, 2011). The IFPRI tool for Measuring Women Empowerment in Agriculture Index (WEAI).

Qualitative data was collected through focus group discussions (FGDs) and key informant interviews using semi-structured FGD guides and key informant interview guides respectively. Other methods used include; observations of the application of skills acquired through various interventions, the team also had conversations to collect personal stories from beneficiaries and selected most significant change stories. The recommended Covid-19 prevention and control measures such as social-distancing, use of face masks, hand washing and sanitizing were adopted.

2.5 Data Analysis
Quantitative data was processed and analyzed using Statistical Package for Social Scientists (SPSS). Descriptive statistics including means and percentages were produced and summarized in tables and graphs in line with the objectives of the evaluation. Analysis of Household Dietary Diversity Scores (HDDS) was done by summing the values (0 or 1) the different food groups (cereals, roots, vegetables, fruits, legumes, meat, fish, eggs, milk) consumed by household members during the last 24hours ie. Sum (a+ b+ c+…. +L). The HDDS has a value (0-12). The average HDDS = \[ \frac{\text{Sum (HDDS)}}{\text{(n) Sample households}} \]
Household Hunger Scale was analyzed using data collected through recall methods in the past 4weeks (30days) and by summing responses to six standard items that gives rise to three household hunger

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2 World Bank, 2018: ACDP survey tool
3 INDEXX project, 2018: Data4diets: Building Blocks for Diet-related Food Security Analysis. Tufts University, Boston, MA.
4 Terri Ballard etal, 2011: Household Hunger Scale Indicator definition and measurement guide
5 IFPRI, Oxford Poverty and Human Development Initiative (OPHI) and USAID’s feed the future, 2012: Women Empowerment in Agriculture Index (WEAI)
categories: “Little to no household hunger (scores 0-1), “moderate household hunger (scores 2-3), and “severe household hunger” (scores 4-6).

Analysis of the Women Empowerment in Agriculture Index (WEAI) was analyzed using the five domains; women empowered in decisions about Agricultural Production; women with Access to and Decision-Making Power over Productive Resources; women in Control over Use of Income; women who are empowered in Community Leadership and women empowered with available time for use and determined as follows:

$$5DE = H_e + H_n (A_a)$$

where

- $H_e = \%$ of women who are empowered
- $H_n = \%$ of women who are not empowered ($1-H_e$)
- $A_a = \%$ of dimensions in which disempowered women have adequate achievement

Qualitative data consisting of notes and stories from in-depth interviews and discussions with key informants and FGDs were read and re-read to identify responses that answered particular study questions, as well as feelings, impact of interventions including emerging patterns of thinking, argument, and practice were summarized, transcribed, edited in line with the objectives of the study, typed out and analyzed using thematic and content analysis.

Results from the qualitative and quantitative data analysis were triangulated to enable meaningful interpretation of results. Most significant stories and quotations from respondents were also included in the report to bring out the voices of the participants especially mobile community.

2.6 Data quality control
The questionnaire was developed based on key project indicators stated in the project log frame. Then the questionnaire was programmed to incorporate skips and checks for all mandatory fields within the ODK system to ensure 100% completeness but also limit on the illogical and inconsistent entries. The questionnaires were pre-tested before actual data collection to check for flow and completeness of questions. After the pre-test, they were revised and refined to ensure readiness to collect data. Then during data collection, any flagged query was shared with the responsible supervisors for action (that includes re-contacting the respondent). Other activities included review of data each day and reflection of the day’s event to identify issues for further follow-up in subsequent field activities. Data was uploaded to the server on a daily basis by the field supervisors.

The consultant recruited qualified and experienced enumerators. The recruited enumerators were trained on project objectives, research methodology, research ethics, study instruments, use of mobile data collection devices and data quality dimensions. Training was done to enable enumerators to acquaint themselves with the tools and also to ensure consistency and completeness of data capture during the data collection exercise. The field teams held debrief meetings every evening before the field supervisor made final checks for some questionnaires then uploaded onto the database. Data was downloaded and transferred to SPSS for further validation checks and processing including coding and re-shaping into an analysis dataset.
2.7 Ethical consideration

No formal ethical clearance was sought from Institutional Review Board (IRB) and Uganda National Council for Science and Technology (UNCST) because this exercise falls under evaluative activity that poses no risk to participants. However, all enumerators were trained on research ethics. Ethical principles of research were followed at the household level, and only households that consented to the interviews were interviewed. ARUWE sought clearance from the District Local Government and Local council for the consultant team to conduct the evaluation. Then enumerators were introduced to Local councils’ leaders who introduced them to community members. At the selected homes, explanations about the purpose of the study and the expected benefits were made before each interview, then verbal consent was sought from project beneficiaries before commencing with interview and or photograph and use respondents’ photos in the evaluation report. Questionnaires remained anonymous to ensure confidentiality.

2.8 Limitations and mitigation strategies for quality assurance during Evaluation

- It emerged that baseline values for some indicators were lacking yet there were necessary for assessing interventions.
  **Mitigation strategy**
  The evaluation team addressed this by comparing with published statistics such as UNHS, including uses of qualitative explanations to assess change attributable to the project interventions.

- Some members on sampled lists were untraceable in the community at the time of the evaluation due local elections that were underway.
  **Mitigation strategy**
  To mitigate these limitations, the study team revisited households and replacements selected from the same communities.

- Incomplete questionnaires due to respondents having other urgent commitments by the respondents.
  **Mitigate strategy**
  Appointments were organized with respondents the following day to have the questionnaire completed. Where the following day proved difficult, the team arranged and engaged the respondent through telephone interviews.

- Bias in response (central or peripheral tendencies) sometimes respondents feel that if reported improvement, would miss out on benefits, as such tend to take up a fair position.
  **Mitigation strategy**
  Design margin of error was mitigated by use of rigorous sampling methods and further aggregated quantitative information was triangulated with qualitative data from FGDs and KIs.
CHAPTER 3: RESULTS

This chapter gives a brief description and analysis of evaluation results presented in various forms including charts, tables and pictures to ease understanding by readers. The results are mainly at outcome levels but efforts were done to include outputs to illustrate the outreach of the project interventions.

3.1 Socio-demographic characteristics of sampled beneficiaries
At the start of the study, 389 sampled beneficiary farmers were profiled based on key socio-demographic variables including: sex, age, education, marital status, occupation, type of household and household size. Table 3-1 below thus provides a description of the sampled farmers in terms of above demographics and directly point to the nature of farmers the project was working with.

Generally, a majority (71%) of beneficiaries came from households which were male adult headed, the remainder (29%) were from female adult headed households. In terms of age, a majority (74.9%) of them were 19-45 years, which is believed to be an economically active age group, but there were also some above 50 years who may be endowed with farming experience that could be learned by the lower age groups.

On education, more than two-thirds (68.8%) of sampled beneficiaries had attained primary education, 21.5% were secondary school leavers, 8.4% had never attended any school, and only 1.3% had reached tertiary education level. Education attainment of beneficiaries can be associated with their meaningful participation in project socio-economic activities. Education makes it easy for them to learn and apply new knowledge and understand the tenets of agricultural production, income and women empowerment.

Further, results revealed that almost three-quarters (74.2%) of the sampled beneficiaries were married, 12.1% divorced/separated, 11.5% widowed, and 2.2% single or never married. Nearly all (97.7%) of the respondents said farming was the main occupation where they earned income. Lastly, sampled beneficiaries came from households with average size of 6.1 this reflects a high dependent ratio with most of the dependents being children that do not participate in activities that support household socio-economic welfare.

The study observed that a typical sampled project beneficiary tended to be an economically active, married woman with primary level of education. The profile of sampled beneficiaries is a true representation of farmers that were involved in the project. In its design, the project targeted mostly rural women farmers for economic empowerment but, included a few men in order to catalyze this change.

By the project supporting agricultural production and productivity including marketing and, through improved access to finance, inputs and skills, it can be anticipated that it positively impacted beneficiary households in ensuring food security and lifting them out of poverty.
**Table 3-1: Characteristics of project beneficiary farmers in Kyankwanzi District**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Baseline</th>
<th>EPE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>34.9%</td>
<td>15.2%</td>
</tr>
<tr>
<td>Female</td>
<td>65.1%</td>
<td>84.8%</td>
</tr>
<tr>
<td><strong>Type of household</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male-headed</td>
<td>79.0%</td>
<td></td>
</tr>
<tr>
<td>Female-headed</td>
<td>21.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 19 years</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>19-50 years</td>
<td>74.9%</td>
<td></td>
</tr>
<tr>
<td>&gt;50 years</td>
<td>24.9%</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>18.9%</td>
<td>8.4%</td>
</tr>
<tr>
<td>Primary</td>
<td>61.4%</td>
<td>68.8%</td>
</tr>
<tr>
<td>Secondary</td>
<td>15.8%</td>
<td>21.5%</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1%</td>
<td>1.3%</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>78.4%</td>
<td>74.2%</td>
</tr>
<tr>
<td>Single</td>
<td>7.1%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Divorced</td>
<td>6.3%</td>
<td>12.1%</td>
</tr>
<tr>
<td>Widowed</td>
<td>8.2%</td>
<td>11.5%</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farming</td>
<td>87.3%</td>
<td>97.7%</td>
</tr>
<tr>
<td>Business</td>
<td>8.2%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Public servant</td>
<td>0.5%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

**3.2 Household agricultural productivity and production**

To get to know if beneficiaries' households had realized any significant increase in agricultural productivity and production arising from project interventions, the following information was obtained from them regarding: crops grown, crop productivity, quantities produced and sold, access to extension and agro-inputs, and adoption of improved agricultural technologies. Results from this data analysis are systematically presented and discussed in comparison with those from the baseline study conducted in 2017 as shown below:

**3.2.1 Farmers increase in agricultural productivity**

This focus of the evaluation under this outcome was to provide rigorous evidence of how agricultural productivity impacted on household welfare growth and provide answers on whether women’s involvement in agribusiness initiatives result in increased income for women farmers. Over the project life, there was a general increase in maize and beans productivity (yield) respectively leading to increased average household income from Ush 300,000 baseline 2017 to Ush 960,617 EPE.

Most importantly, the results provide very strong argument that women access finance was a major moderator of production. The findings also provide some evidence that women economic empowerment not only reduces gender gap in agricultural productivity, but also to improving crop productivity in households. Details of these findings are discussed bit by bit in the subsections that follow.
3.2.1.1 Crops grown

Generally, at the end of the project, higher proportions of sampled beneficiaries reported their households growing different groups of crops than in 2017 when the baseline study was done. In the first group of crops (cereals – maize, millet, sorghum), there was a notable increase from 84.25% in 2017 to 97.9% of households at the end of the project (EPE).

Proportion of households that grew legumes (beans, groundnuts, soybeans, cowpeas) increased from 79.98% in 2017 to 90.3% EPE. Production of tubers (cassava, yams and potatoes) was done by more (98.7%) households than 65.09% in 2017. More interestingly, cash crop (coffee, cotton etc.) producing households sharply increased from 30.8% in 2017 to 74.8% EPE. Similarly, proportions of households that produced vegetables (tomatoes, egg plants etc) also increased sharply from the baseline 10.6% to 61.9% EPE as shown in figure 3-1.

![Percentage of households and crop grown](image.png)

The results above tend to suggest that food security was a major factor is choosing the crops grown hence the high jump in tubers but one fact remains that the communities in this area had improved their welfare and sustaining the attained household living standards require regular finance which explains the spike households growing cash crops and vegetables. Vegetable/ tomatoes play an important role in closing the cash flow gaps given their shorter production cycle. This is also suggestive that households had a mix of food security, long and short-term maturing crops for sustainable improved living standards.

_Explaining the trend in the results the KI (ARUWE Staff) said “the project focused on increasing maize and beans productivity with already existing growers but also encourage diversification in production to ensure improved nutrition at household and sell of the excess for income”._

3.2.1.2 Quantities of crops produced

Because project activities were focused on promoting maize and bean production among beneficiary farmers, productivity enhancement investigation was restricted to only these two crops. Overall, average household maize production increased from 221.9 kg baseline 2017 to 1,587kg (Median 1,155, standard deviation 1,451.031) EPE. Households had the highest production in year1 with 1,885kg, before sharply
dropping figure 3-2. The trend is well explained by events of year 2018 when maize price plummeted prompting Government to buy 500,000 metric tonnes at Ush 500 from farmers to address the low price on the market, this negatively affected production in the subsequent year.

Similarly, overall average household bean production sharply increased from 107kg baseline 2017 to 515kg (Median 366.00, standard deviation 495.668) EPE. The evaluation observed a relatively small increase from year 1 to the end of the project as shown in figure below.

![Figure 3-2: Trend of maize and beans produced (kgs)](image)

3.2.1.3 Productivity of crops
On average, households allocated more land to maize than beans, that is 2.68 acres (Median 2.00, Std. deviation 1.988) versus 1.58 acres (Median 1.00, Std. deviation 1.033) in the last season (table 3-2). The largest farming household for maize and beans had planted 13 acres and 6 acres, respectively. Farmers owned average of 3.8 acres at baseline, 2017 and had allocated an average of 2.2 acres and 1.6 acres to maize and beans respectively.

Table 3-2: Table Household maize and beans acreage and production first season 2020

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize area (acre)</td>
<td>2.68</td>
<td>2</td>
<td>1.988</td>
</tr>
<tr>
<td>Bean area (acre)</td>
<td>1.58</td>
<td>1</td>
<td>1.033</td>
</tr>
</tbody>
</table>

Using average household acreage and production for maize and beans estimated above, on-farm productivity was computed for these two crops. There was an increase in average household maize yield from 101 kg/acre in 2017 to 593 kg/acre at EPE. The increase was substantial but lower than the 2,500 kg/acre potential on-farm yield for Longe10H. The low yield may be linked to rampant practice of recycling improved seed (Longe10H) by farmers. This practice erodes hybrid genetic potential and can make Longe10H perform worse than traditional seeds. Also noted was that farmers used organic fertilizers such as cow dung and compost manure to enhance productivity but the quantities applied were largely
insufficient due to limited availability and high cost of transportation and this worsened in the last season when the application was even much less as farmers contemplated the effects of drought.

The above anomalies combined with effects of drought and excessive rains (causing floods in crop fields) help explain the low yield observed in maize. While for beans being early maturing than maize, yields slightly grew from 67 kg/acre in 2017 to 326 kg/acre at EPE (figure3-3). The increase was reasonable but below the potential on-farm yield for NABE1. This was attributed to triad effects of heavy rain; heavy spell of rain damage or wash away seedlings in the field; bean pods rot in the fields; harvested beans could not be sun dried effectively resulting into mold infestation contributing to low yields.

To get in-depth explanation about the results observed for the low crop yields, the evaluation interviewed some beneficiaries and captured their narration as follows;

A respondent from Nkobazambogo women’s group said “when I got the money, I used it for farming, after harvesting the yield was good and the maize price had also gone up (1000Ush/kg). I got more improved seeds and increased my garden from 1 acre to 3 acres. From 1 acre, I used to get 15 bags of maize due to use of improved seed but the last season I got less than 10 bags due to drought”.

During one of the focus group discussions with project beneficiaries from Gakuwebwamunno Women’s group, it was clearly echoed that the main enabler of increased crop productivity was the opportunity provided to women to: learn agronomic practices, access soft loans in the VSLAs and micro-finance that enabled access to timely labor and inputs including expansion of cultivated land area. However, productivity was affected by prolonged drought and excessive rains. Other causes although not systemic included pests and diseases, high post-harvest losses and high costs for improved inputs resulting low yield.

![Figure 3-3: Average Maize and beans yield (Kg/acre)](image)
3.2.1.4 Quantity of crops sold

A majority of producing households reported having sold their surpluses in the last season, that is 87.6% for maize and 83.8% for beans. Further results indicated an increase from 59% in year 1 to 90.4% year 2 in the proportion of farmers having confidence with their ability to access to markets. A review of project annual report, 2019 showed that farmers were trained on record keeping but kept no records. Farmers’ low level of formal Education observed under household characteristics was to blame for lack of records keeping.

Lack of production and sales records at farming households was responsible for disproportionate estimates of sales and production. For example, evaluation results revealed a decline in average household quantity of maize sold from 5,146 kg at baseline to 1,449 kg (median 1,000, standard deviation 1,330.9) EPE. Similarly, average quantity of beans sold by households declined from 1,385 kg at baseline to 468 kg (Median 345, Standard deviation 436) at EPE.

A review of project annual report, 2019 revealed that ARUWE trained 450 farmer group members in collective marketing and bargaining and also trained 30 cooperative leaders in management and leadership. Farmers were equipped with negotiation and communication skills, costing and pricing, packaging and branding, market research and identification. Farmers were able to approach different markets and reduced the proportion of middle men who used to cheat farmers through unfair prices.

Information gathered revealed that 35% of the sample groups had engaged in bulking produce of at least one crop over the last 2 years and 25% of households acknowledged engaging in collective marketing (Midterm report, 2019). However, farmers also sold their crops through alternative channels that include farm gate and nearby markets.

![Figure 3-4: Quantities (Kg) of crops sold](image)

3.2.1.5 Access to extension services

In the past 12 months, there was an overall increase in household access to extension services from 12.4% in 2017 to 98% at EPE. This could be attributed to the project since its beneficiaries attended agricultural training over critical areas of pest control, postharvest handling and marketing. For example, pest control was the most attended training and showed an increase from 67.7% in 2017 to 74.7% of households at
EPE; post-harvest handling from 54.6% in 2017 to 92.9% of households at EPE; bulking and sorting from 45.5% in 2017 to 70.6% of households at EPE; value addition from 14.6% in 2017 to 24.3% of households at EPE. The proportion of households that got training in agronomic skills decreased from 35.4% in 2017 to 71.9% at EPE (figure 3-5).

Review of the project annual report, 2019 revealed that the project trained 646 farmers in good agronomic practices with focus on maize and beans production. Farmers got knowledge in good agronomic practices including soil and water conservation, crop rotation, intercropping, crop spacing, early planting, timely weeding, pest and disease control. Furthermore, farmers from year one and year two were given refresher trainings in soil and water conservation practices and climate mitigation measures which was still a challenge to some farmers.

![Figure 3-5: Areas where farming household were trained](image)

Asked about their household source of extension services, beneficiaries said they received it from both government and NGOs extension staff. Further analysis of results indicated an increase from 53.1% baseline 2017 to 92.8% EPE of households that received training from NGOs extension staff at EPE. However, during the same time period, proportion of households that received training from government extension staff declined from 33.1% to 5.9%. This suggests the project had a positive impact in enhancing beneficiary household access to extension services.

Further results obtained from FGDs indicated an increase from 66% in year 1 to 91.7% of farmers that said were satisfied that they had acquired skills necessary to enable them to increase the volume of crops they were able to successfully grow. The EPE however, did not use FGDs for quantitative data but rather used it for qualitative as illustrated below;

A respondent from, Bugomolwa United Farmers had this to say “I wish to appreciate our agricultural officer from ARUWE who taught us on the use of improved seeds and other practices such as how to use organic fertilizer…. These are things I never knew but have enabled me increase production of maize and vegetable from which I support my daughter to complete Education in “O” Level.
Access to agricultural inputs

Since household agricultural production requires access to critical inputs, such as improved seeds, fertilizer, agricultural tools, incidence of access to these inputs by beneficiaries’ households was probed. Results showed significant increase in access to improved seeds from 28.3% baseline 2017 to nearly all (97.7%) of households at EPE. More than one quarter (27.4%) of beneficiary households at EPE had acquired agricultural tools (oxen, hoes, rakes etc.) compared to only 0.6% of them in 2017. There was also improved access to organic fertilizer from 1.8% baseline, 2017 to 16.1% at EPE. In the same time period, household access to improved animal breeds also increased from 1.5% to 30.4% (Table 3-3). Providers of these inputs were reported as being Government and NGOs.

According to the annual project report, 2019, improved seed varieties of maize (Longe10H) and beans (NABE1) were bought and distributed to the farmers in Gayaza, Nkandwa and Kitabona. 4,023 kg of maize and 1,750 kg of beans were distributed to 410 farmers, each getting an average of 10 kg of maize and 5 kg of beans enabling each establish at least 2.5 acres.

- **On the use of organic fertilizers**, the KI (ARUWE Staff) revealed that the project focused on promoting organic fertilizers and practice such as mulching, cow dung, compost manure, green manure and kitchen refuse. This went hand in hand with organic practices such as cover crops and crop rotations to maintain soil fertility and soil structure. Also done was mulching to maintain soil moisture and soil structure, agroforestry to control soil erosion and maintain hydrological cycle, inter-cropping of legumes with cereals and crop rotation. Further the KI added that the project promoted pest-management through use of natural pesticides such as urine, ash and red pepper to spray pests in crop fields. They also promoted the use of natural plants with intense smell such as Mexican Mel gold and tobacco as well as cow dung in stores to keep away pests but also use of trap crops as alternative food for pests has been done.

- **In regard to organic pesticides**, the FGD reported that ARUWE promoted a number of organic pesticides and practices but for those who adopted, the quantities applied were insufficient for effective control of pests leading to low yield. Another concern was that the organic pesticides were not easy to measure concentrations resulting in ineffective performance. Also noted was that organic pesticides could not be used on large scale because they were not readily available on the market. Other concerns were that they were expensive to transport, limited availability but more important, limited market for organic products and yet they require a lot of labor.

Information gathered at FGD (Men) revealed that farming households received improved maize seed (Longe10H) and beans (NABE1), however, there were concerns that they only received for one season in a year which made them start recycling for subsequent seasons. The KI (ARUWE staff) in the interview confirmed that one of the project challenges was limited resources resulting in inadequate inputs for beneficiaries.

<table>
<thead>
<tr>
<th>Table 3-3: % of households that received agricultural inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Improved Planting seeds</strong></td>
</tr>
<tr>
<td>Baseline</td>
</tr>
<tr>
<td>EPE</td>
</tr>
</tbody>
</table>
3.2.1.7 Agricultural practices adopted
Under the project, beneficiaries were trained on various agricultural practices for them to adopt. Results indicated there was an increase in proportion of beneficiary households that adopted mulching, mixed cropping, planting in lines, terracing, and rearing improved animals. Notably, proportion of households that adopted mulching rose from 20.6% baseline 2017 to 67.8% at EPE; planted improved seeds varieties increased from 7.6% baseline 2017 to 53.2% at EPE; planted in lines increased from 34.0% baseline 2017 to 67.2% at EPE; and adopted mixed cropping increased from 55.5% baseline 2017 to 72.4% at EPE. The most adopted agronomic practices were; mulching claiming 47.2% adoption rate, planting improved seed varieties 45.6%, planting in lines 33.2%.

Whereas this reported observed increased proportion of households that had training in agronomic skills and pest control under section and increased access to organic fertilizer section (3.2.1.4), of this report to the contrary, there was a decline in proportion of households that applied organic manure from 17.2% baseline 2017 to 8.7% at EPE; and integrated pest management from 15.8% baseline 2017 to 5.1% at EPE (table 3-4).

Also noted was a decline in application of food preservation and storage practices. The low application of organic fertilizer, integrated pest management and food preservation and storage practices observed is closely linked to drought that hit the area. It is clear from (table 3-4) that that farmers had planted improved seeds in lines and even mulched but as the drought progressed, they were discouraged to apply the organic fertilizer, pest control and a few had harvested to apply food preservation and storage.

Review of the project annual report, 2019 revealed that the project trained 646 farmers in good agronomic practices with focus on maize and beans production. Farmers acquired knowledge in good agronomic practices including soil and water conservation, crop rotation, intercropping, crop spacing, early planting, timely weeding, pest and disease control.

Interview with a Farmer Group leader, Kitabona said “I usually go for training at ARUWE, and when I come back, I train the group members and because of this, our people have adopted GAPs like use of improved seeds such as Longe10H, space lining etc and if not for bad seasons, our farmers have always had high yields which has helped them improve their household income this has improved the standard of living and lowered poverty induced divorce rates”.

Similarly, FGD Bugomolwa Farmers United, Nkandwa revealed that they used to have beans that had poor germination, take 3months and low yield, but ARUWE provided them with another variety NABE1 beans that take 2 months and 26 days the yield used to be 200kg per acre but now we get 400-500kg per acre this makes it easy to get a loan and pay in a short time if the season is not affected by drought or excessive rain.
Table 3-4: % households that adopted agricultural practices

<table>
<thead>
<tr>
<th>Practices</th>
<th>Baseline</th>
<th>EPE</th>
<th>Change in adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mulching</td>
<td>20.6%</td>
<td>67.8%</td>
<td>47.2%</td>
</tr>
<tr>
<td>Mixed Cropping</td>
<td>55.5%</td>
<td>72.4%</td>
<td>16.9%</td>
</tr>
<tr>
<td>Planting in Lines</td>
<td>34.0%</td>
<td>67.2%</td>
<td>33.2%</td>
</tr>
<tr>
<td>Terracing</td>
<td>3.6%</td>
<td>16.4%</td>
<td>12.8%</td>
</tr>
<tr>
<td>Organic Manure Application</td>
<td>17.2%</td>
<td>8.7%</td>
<td>-8.5%</td>
</tr>
<tr>
<td>Integrated Pest Management (IPM)</td>
<td>15.8%</td>
<td>5.1%</td>
<td>-10.7%</td>
</tr>
<tr>
<td>Food Preservation and Storage</td>
<td>25.8%</td>
<td>23.5%</td>
<td>-2.3%</td>
</tr>
<tr>
<td>Planting Improved Seed Varieties</td>
<td>7.6%</td>
<td>53.2%</td>
<td>45.6%</td>
</tr>
<tr>
<td>Rearing Improved Animal Breeds</td>
<td>2.0%</td>
<td>6.1%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Fallowing of The Land</td>
<td>6.8%</td>
<td>1.5%</td>
<td>-5.3%</td>
</tr>
</tbody>
</table>

3.2.1.8 Postharvest and food handling approaches used by households

Results showed a decline in the proportion of households using granaries from 65% baseline 2017 to 52.4% at EPE. Information gathered at the FGD indicated that farmers were focusing on bulk collective marketing, so as soon as they harvest the maize, a large portion was taken to the cooperative like that in Gayaza where the produce is properly cleaned, dried before marketing.

The evaluation also established that households used the following postharvest and food handling approaches: dry food to reduce moisture (60.1%), application of pesticides (39.9%), bulking of dried cereals (21.2%), value addition (29.2%) and not drying seeds/crops on the ground (14.6%). The project progress report, 2019 revealed that the project supported smallholder women farmer groups with value addition equipment such as tarpaulins and shellers for ensuring quality of grains during drying.

The FGD Bivamuntuyo Women’s group, Kyanda Village explained that they used to dry maize on the ground and did not have where to pack it, so most of it turned yellowish the cooperatives did not want it but other buyers would pay very little money but when ARUWE gave us the tarpaulin, we dry the maize properly before putting in sacks, the maize stays clean and dry even during the rainy season. ARUWE gave us sacks where we store maize to prevent it from rodents and getting molds. When maize is in the store, we keep the door open always but we also space the bags from one another but if we are to store for a long time, then they have to be wrapped properly. We used to bite the maize to check if dry but we were taught how to use the Pepsi-bottle and salt. For beans, we use neem tree or hot pepper or ash to keep away bean weevils.

“Life is good; I have no words to express this. I am so grateful for ARUWE has encouraged and helped me to develop, if it was not for ARUWE, where would I get what I have gotten, where would I have got the knowledge and skills in post-harvest handling, I used to make a lot of losses of about 20kg per bag of the beans I harvested and but they gave us tarpaulins which are very helpful, now the loss is like 1kg per bag, I can say that this was the beginning of getting good life. When I harvested and sold the beans at a good price, I was able to expand my garden” said a respondent from, Gayaza (photo 3-1).
3.3. Farmers increase in income, assets and land resources
The second research question in this study was to evaluate if project outcomes had led to increase in beneficiary household income, assets and land resources. Thus, information on sources of income, assets, and land resources were collected. Results from this data analysis are systematically presented and discussed in comparison with those from the baseline study conducted in 2017 as shown below:

3.3.1 Sources of Household Income
There was an increase from 6.8% baseline 2017 to 42.2% of households at EPE that had at least one or more adults that was earning and contributing to household income. Proportion of households that received some external support also increased from 4.8% baseline 2017 to 39% at EPE and the highest form of support was agricultural inputs as revealed by 29.2% of respondents.

There was an increase in proportion of farming households that had farming enterprise as main source of income from 87.3% in 2017 to 97.7% at EPE. Then, 43.6% of sampled beneficiaries said their households had alternative income. Also observed was an increase from 69% in 2017 to 92% at EPE of households that were confident in their ability to meet their income needs.

This was reflected in further result analysis indicating an increase in proportion of households that took private business as the main source of income from 8.2% in 2017 to 42% at EPE. Wage employment also had a slight increase from 1.8% in 2017 to 4.4% at EPE as shown (figure 3-6). The evaluation observed that diversification away from the agricultural sector increased and stabilized household incomes and household welfare. Diversification into non-farm activities served as a means to improve household welfare but also served as a strategy to enable farmers access resources, more often than before, farmers obtain funds from non-farm activities and invest back into farming.
The average household income in the last 12 months was Ush 960,617 (£365) at EPE and 62.2% of sampled beneficiaries indicated that their household income had generally increased while 37.8% of them said otherwise. The number of households that earned £365 ($2 per day) from sale of their produce last season increased from 196 baseline 2017 to 279 at EPE. Household earned more than $1 and less than $2 reduced from 647 baseline to 418; then those that earned less than $1 reduced from 333 at baseline to 202 EP (Table 3-5).

Explaining the results for households that earned £365 ($2 per day) KI (ARUWE staff) said that “last season production was affected by severe draught resulting in crop failure with much damage in Kitabona and Nkandwa”.

<table>
<thead>
<tr>
<th>Income per day</th>
<th>Baseline</th>
<th>Year1</th>
<th>Year2</th>
<th>EPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;$2</td>
<td>196</td>
<td>90</td>
<td>127</td>
<td>279</td>
</tr>
<tr>
<td>&gt;$1&lt;$2</td>
<td>647</td>
<td>167</td>
<td>102</td>
<td>418</td>
</tr>
<tr>
<td>&lt;$1</td>
<td>333</td>
<td>78</td>
<td>81</td>
<td>202</td>
</tr>
</tbody>
</table>

3.3.2 Land asset for farming
Results showed an increase in the average land size owned by households from 4 acres at baseline in 2017 to 4.26 acres at the end of project evaluation. Generally, all studied households had access to farming land, although, average holding is dictated by population pressure. But, access to farming land differed per household with the smallest having 1 acre and largest having 20 acres. Land ownership has a direct impact on household food security and poverty since farming is the main economic activity of these households. Conditions for land ownership are usually worse for women headed than men headed households due to the prevalent culture of land inheritance in the study area that discriminates against women.

Generally, a typical household studied tended to be practicing smallholder agriculture. Given the large number of enterprises (both cash and food crop) that are usually grown by individual households in the
study area, coupled with the tiny acreages cultivated per year per household, the production of both food and cash crops is low. Hence, these households can be said to be engaged in production in order to meet their own subsistence needs first and, if there is any surplus, it is then marketed.

3.3.3 Livestock owned
A majority (84.6%) owned chicken/ducks, 64.3% had goats/sheep, 24.7% kept cattle, and 56.6% had pigs. For those households with livestock, average holding at EPE was 17.3 chicken/ducks, 6.9 goats/sheep, 5 cattle, and 5 pigs. The largest household farms had 51 chicken/ducks, 30 goats/sheep, 30 cattle, and 8 pigs (figure 3-7).
Farming households kept livestock to complement crops as a source of food and store of wealth, but more importantly, farmers move capital between crop and livestock enterprise while observing liquidity and return on investment (RoI). Other than return on investment, livestock numbers could relate to level of liquidity, for example, chicken is easily sold followed by goats, pigs and cattle comes last. With this principle, farmers equate chicken to ready cash while cattle store real wealth. The stories from respondents were captured to illustrate experience.

A member of Kalyamagwa Farmers Group, Gayaza said “when I harvest, I am able to sell and whatever money get from sales, I take half to ARUWE and the balance is for my investment. I invest the balance in further farming but also buy some chicken for example in 2018 I bought 50 hens which I sell and have higher income add on and then buy pigs, fatten and sell when the value is high, I choose to sell and transfer the money crop farming, like that and when I have enough money, I buy land for farming.”

![Figure 3-7: Average number of livestock owned by households](image_url)

3.3.4 Household assets
Results further revealed baseline year with lowest household that said their assets increased from 27.9% baseline, but this changed in year1 with jump to 93% before falling to 71.3% in year2 and slight increase through purchase to 73.8%EPE (figure 3-8). A decline is explained by economic hardships that forced households to sell some of their assets especially I year 2018 which experienced high production and low price for maize. Further results indicated that 10% of households sold livestock, 10% furniture, 1.5% sold...
equipment, 0.8% land, 0.5% transport assets, and 0.3% sold electronic asset. The main reason for selling was pay for funeral (90%) and, others were to pay; debt (5.6%), medical expense (1.8%), school fees (0.3%) and social events (0.3%).

![Figure 3-8: Percentage of households that said had increased in assets](image)

It is important to note that there was a general increase in household assets over the project period. For example, proportion of households that owned motorcycles increased from 17.7% in 2017 to 42.9% at EPE; bicycles increased from 37.2% in to 80% at EPE, bed and beddings increased from 90.3% in 2017 to 99% at EPE, and radios increased from 82.4% in 2017 to 85.8% at EPE (figure 3-9). The significance of these results were that household living standards had improved as a result of improved disposable income generated from farming and alternative enterprises where farming households have invested.

Results from the review of ARUWE annual report 2019, indicated an increase from 55% in year1 to 73.5% in year2 in the percentage of farmers confident to in their ability to increase their household living standards.

Telling us about improved living standard, a member of a Women’s Group said “When I got loan money from ARUWE, I used it for farming and after the harvest, I sold the maize and bought a solar fridge, so these days my family takes cold water from the fridge but I also make money from sell of cold drinks, thanks to ARUWE”.

Another member said “We were badly off, too much poverty, but James from ARUWE formed us into a group through the group I got a loan of Ush 300,000 from ARUWE which I put in farming, rented land, bought seeds, I harvested, sold and got Ush 600,000 paid back the loan in full (Ush 336,000). Second season I got a loan of Ush 500,000, … harvested and got Ush 900,000. Paid off the loan and bought a cow at Ush 600,000 which I kept for 1 year before selling at Ush 960,000 and bought a motorcycle which helps me in farming activities but also generates income. The third loan of Ush 650,000, I used it to complete my house by plastering and cementing, I now feel good because ARUWE cares”.
3.3.5 Access to credit
The project facilitated beneficiary farmer households to access loans through formation of savings and credit groups. Proportion of households that belonged to a saving and credit group increased from 18.6% in 2017 to 99.7% at EPE and 60% of households had formal means of saving at EPE. The following sub-sections detail household’s: borrowing and saving, conditions for credit access, and training received on savings and credit:

The project facilitated farmer households to access loans. A review of project progress report, 2019 revealed that the project linked farmers to access agricultural credit (farmers revolving loan fund) at Community Fund MFI and a total of 144 loans worth Ush. 66,800,000 were given out to farmers as agriculture loans. The loans were customized re-payment was six months (after harvesting) with an interest of 12%.

Further the report indicated that the project trained 30 farmer groups in savings, credit/financial management, basic accounting and record keeping. The group members were equipped with knowledge in savings mobilization, work planning, managing and recovering credit. Group members learnt how to accumulate portfolio, share capital management and records keeping.

Information gathered at FGD (Ezinunula Women’s Group, Gayaza West Village revealed that they had a need to develop their families to have good welfare, yet before the project, it was hand to mouth, but when they save, they were able to get lump sum and do something. They said group of 28members first received awareness and trainings from ARUWE. A key knowledge got from the training was assessing the borrowers against their saving and repayment abilities this has helped them screen the borrowers to avoid defaulters. We also learnt to calculate interest, assessing the guarantors and ensuring members make weekly saving and motivate members through sharing dividend at the end of the year. The main challenge was failure by members to repay due to poor crop yield.
3.3.5.1 Saving and Borrowing

**Saving**
The evaluation results revealed an increase in average amount of money saved per saving from Ush 518,800 in 2017 to Ush 567,624 at EPE. Evaluation results further indicate nearly three quarters (646 Male, 582 Female) of households saved money obtained from sale of agricultural produce. These results are suggestive of increased access to financial services such as saving through Community Fund (MFI) and VSLAs. Access to financial services increases the likelihood of households to save and invest in activities that are likely to contribute to higher future income and therefore to growth.

We formed groups with intention of saving from Ush 2,000 -10,000 on weekly basis and the amount saved determines what a member can borrow, so with this saving, members have been helped to solve small financial problems including buying agricultural inputs” said, VSLA group leader.

According to the project annual report, 2019, ARUWE promoted the adoption of the VSLA model by groups as a strategy to mobilize more capital to invest in agricultural ventures and diversification projects through increased savings. Group members were trained and encouraged to use the VSLA (Village Saving and Loans Association), in order to access small group loans as they wait for bigger loans from Community Fund. This approach was said to have enhanced the living standards through saving money and achieving financial sustainability among women (photo 3-2)

![Photo 3-2: VSLA members making savings](image)

**Borrowing and utilization**
Results showed that 61.6% of households that belonged to saving and credit groups had borrowed money in the past three months. While the average amount of credit accessed by households was Ush 500,000
per agricultural season, the maximum amount of credit accessed increased from Ush 200,000 at baseline to Ush 800,000 at EPE. Nearly three-quarters (74.3%) borrowed to buy agricultural inputs, 8.3% to do small business, 3.3% borrowed to buy productive assets. 2.1% used it to buy household assets, 0.8% to pay off another loan, 0.4% to buy transport asset, and 0.8% to rent land for farming or build a house. In general, 43.5% of households had accessed credit amounts they needed most of the time, 34.5% said some of the time and 17.1% said all the time.

As to whether households accessed credit as individual or group, it was revealed that there was a decline in group borrowing from 98% at baseline to 52.7% of households at EPE. In other words, results indicated that 47.3% of households at EPE had borrowed as individuals.

The FGD Ezinunula Women’s Group, Gayaza West revealed that group credit was good at one time because the group could act as a guarantor for the loan which was good at that time because if one failed then the whole group would be responsible. But now days, everyone wants to develop and should get the money as an individual with two guarantors or security which makes getting a loan very easy for those who are discipline and difficult for those that do not want to repay the loans.

A member of Ezinunula Women’s Group, Gayaza West said “I got a loan and bought a television to watch agricultural programs but also watch music during free time. The loans have helped me meet children’s Education requirements such as uniforms and shoes, they have been performing well at school and bring good reports”.

**Loan repayment**

Further, there was a decline in proportion of households from 85.7% in 2017 to 60.14% at EPE that were able to repay their agricultural loans in full within the agreed period. The evaluation established that the low loan repayment was due to measures taken by Government to control the spread of COVID-19. The measures such as closure of markets and suspension of public transport resulted in low demand and prices went down leaving farmers with either selling the produce at prevailing low price or hold on their produce hopping for prices to go up after lifting the lockdown.

The low performance rate of loans was explained at an interview below;

The KI (Community Fund) said “indeed the loan repayment rate has gone down, farmers have not been able to get income from their produce due to closure of markets during COVID-19, so we have rescheduled loan repayment.

According to information gathered from the KI (Chairperson Ezinunula Women’s’ Group, Gayaza), “The markets have been closed since March when the country locked down to control the spread of COVID-19. This left many households without income. The rural communities depend on agricultural produce for cash to meet other basic needs, including loan repayment”.

Interest on the loans was about 2% per month for a period of six months usually after harvesting in case of Community Fund Micro Finance while VSLAs, repayment period was 3months and interest rate of 3-5% per month. A review of project progress report, 2019 revealed that farmers were linked Community Fund micro finance to access agricultural credit, consequently 144 loans worth Ush. 66,800,000 had been dispatched.

There was also another scheme of a revolving fund and each farmer group was encouraged to save an average of Ush 210,000 per week. Another practice observed was the redistribution of the savings among
individual members which was done at the end of the year. The significance of redistribution so that members get a lump sum from savings accumulated through interests. For example, the 10 groups in Kitabona Sub County had accumulated Ush 41,610,000, the 10 groups in Nkandwa sub county had accumulated Ush 36,001,000 and the 10 groups in Gayaza sub county had accumulated Ush 38,511,800.

Explaining why farmers fail to repay loans, the Chairperson Ezinunula Women’s’ Group, Gayaza said that “at times some farmers fail to repay especially when they put in farming and the season damages the crops, while others borrow for their spouses who fail to return the money and other may get health problems so fail to tend to their farms”.

3.3.5.2 Conditions for accessing credit

It is worth noting that only those households that fulfilled the conditions of borrowing received credit, such as savings, guarantees, collateral, membership, and surety. Higher proportions of households accessed credit at EPE than at baseline because they were either actively saving or guaranteed by their groups. For example, there was an increase from 18.3% at baseline to 74.9% at EPE of households that accessed the loan because they were actively saving. Group guarantee led to an increase from 42.9% at baseline to 59.8% at EPE of households that accessed credit (figure 3-10).

Figure 3-10: Conditions households accessed loans

3.3.5.3 Training on saving and credit

Proportion of households that said they had been trained regarding saving and credit increased from 52% in 2017 to 98.5% at EPE. Further, there was an increase from 30% and 48% at baseline to 63.7% and 67.5% of households at EPE that had been trained in credit mobilization and saving mobilization training, respectively. Other areas of training included; group dynamics (36.1%), management of saving groups (11%) and financial management (16.4%). There was an increase in households that were trained by NGOs from 79.3% at baseline 2017 to 99.2% at EPE and decline in those trained by Local Government from 17.4% at baseline to 0.5% at EPE.
The project progress report, 2019 indicate that the project trained 30 farmer groups in savings, credit/financial management, basic accounting and record keeping. The group members were equipped with knowledge in savings mobilization, work planning, managing and recovering credit. Group members learnt how to accumulate portfolio, share capital management and records keeping.

*Information gathered at FGD (Ezinunula Women’s Group, Gayaza West Village revealed that they had a need to develop their families to have good welfare, yet before the project, it was hand to mouth, but when they save, they were able to get lump sum and do something. They said group of 28 members first received awareness and trainings from ARUWE. A key knowledge got from the training was assessing the borrowers against their saving and repayment abilities this has helped them screen the borrowers to avoid defaulters. We also learnt to calculate interest, assessing the guarantors and ensuring members make weekly saving and motivate members through sharing dividend at the end of the year. The main challenge was failure by members to repay due to poor crop yield.*

### 3.3.6 Household Poverty

Having known the status of household income, assets and land resources, this subsection focuses on housing characteristics and quality of life. It includes: Ownership status; type of main house (roof, wall, floor, size); water and sanitation, and energy sources.

#### 3.3.6.1 Ownership status of dwelling

Results indicated that a majority (73.7%) of farming household owned the dwellings without title deed, 16.6% owned the dwelling with title deed, 3.8% lived on ancestral land, and 3.3% rented from landlords without rental contracts, 1% lived with family members/friends, and another 1% rented from landlords with rental contracts (figure 3-11).

Generally, almost all (about 95%) the surveyed households owned the house or home they were occupying. This shows the traditional nature of the rural areas in Uganda where each household usually owns a place, they live in. Squatting only takes place when there is a problem such as insecurity that will force a household to relocate somewhere temporarily. Renting might have been reported by those households whose heads were either working in the rural areas or operating a retail business in a rural trading centre.

![Figure 3-11: Ownership status of dwelling](image-url)
3.3.6.2 Type of main house

Generally, a typical house in which beneficiary households lived was a 2-3 bedroomed, iron roofed house with brick and cement wall and variable floor types (finished/unfinished) as shown below:

Type of house wall

More than one half (58%) of households used bricks and cement for the walls of their main house. Results revealed a decline in proportion of households that used of traditional materials, such as mud and wattle for wall materials from 29.8% at baseline to 22.8% EPE and, bamboo and mud from 15.4% at baseline to 2.0% EPE. However, there was an increase in proportion of households that used of modern materials for walls, especially bricks and cement from 39.6% at baseline to 58.1% at EPE (table 3-6).

Table 3-6: Main house materials making walls

<table>
<thead>
<tr>
<th>House component</th>
<th>Materials used</th>
<th>Baseline</th>
<th>EPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials making wall</td>
<td>Mud and wattle</td>
<td>29.80%</td>
<td>22.8%</td>
</tr>
<tr>
<td></td>
<td>Bamboo and mud</td>
<td>15.40%</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>Stone with mud</td>
<td>3.30%</td>
<td>4.1%</td>
</tr>
<tr>
<td></td>
<td>Reused wood/ply wood</td>
<td>0.60%</td>
<td>0.3%</td>
</tr>
<tr>
<td></td>
<td>Finished wall with cement</td>
<td>10.70%</td>
<td>7.7%</td>
</tr>
<tr>
<td></td>
<td>Bricks and cement</td>
<td>39.60%</td>
<td>58.1%</td>
</tr>
<tr>
<td></td>
<td>Cement blocks</td>
<td>0.70%</td>
<td>4.9%</td>
</tr>
</tbody>
</table>

Type of house roof

Although a majority of households had iron roofed housed even at the baseline period, nearly all (95.6%) of them reported so at EPE compared to 85.9% in 2017. Moreover, there was an increase from 2% in 2017 to 27.1% at EPE of households that used finished roofing materials. Results also revealed a decrease from 9.7% at baseline to 1.8% at EPE of households with grass thatched houses (table 3-7).

Table 3-7: Main house roofing materials

<table>
<thead>
<tr>
<th>House component</th>
<th>Material used</th>
<th>Baseline</th>
<th>EPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roof material</td>
<td>No roof</td>
<td></td>
<td>0.50%</td>
</tr>
<tr>
<td></td>
<td>Grass thatch</td>
<td>9.70%</td>
<td>1.80%</td>
</tr>
<tr>
<td></td>
<td>Wood planks</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Card bords</td>
<td>0.10%</td>
<td>27.10%</td>
</tr>
<tr>
<td></td>
<td>Finished roofing</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calamine/cement fiber</td>
<td>0.30%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Roofing shingles</td>
<td>0.10%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Papyrus</td>
<td>0.50%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Polythene</td>
<td>0.50%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Iron sheets</td>
<td>85.90%</td>
<td>95.60%</td>
</tr>
</tbody>
</table>

Type of floor and size of house

Results indicate a decline in the use of mud and dung as floor materials for main house from 43.6% at baseline to 33.1% of households at EPE. But there was an increase in the use of finished floor with cement from 29.4% at baseline to 36.1% of households at EPE. There was also a decline in dwelling houses with 1 Room from 30.7% at baseline to 9.2% of households at EPE and an increase in proportion of households with dwelling houses of 3 and 4 rooms at EPE (Table 3-8). Results also showed that there was an increase in proportion of households that had a separate house for animals from where they dwelled from 68.2% at baseline to 95.9% at EPE.
Table 3-8: Dwelling house floor material and number of rooms

<table>
<thead>
<tr>
<th>Component</th>
<th>Materials</th>
<th>Baseline</th>
<th>EPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor material</td>
<td>Mud and dung</td>
<td>43.60%</td>
<td>33.1%</td>
</tr>
<tr>
<td></td>
<td>Stone and mud</td>
<td>25.20%</td>
<td>25.9%</td>
</tr>
<tr>
<td></td>
<td>Plywood/reused wood</td>
<td>1.70%</td>
<td>0.3%</td>
</tr>
<tr>
<td></td>
<td>Finished floor with cement</td>
<td>29.40%</td>
<td>36.1%</td>
</tr>
<tr>
<td></td>
<td>Clay half bricks</td>
<td></td>
<td>3.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of dwelling rooms</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 room</td>
<td></td>
<td>30.70%</td>
<td>9.2%</td>
</tr>
<tr>
<td>2 rooms</td>
<td></td>
<td>47.70%</td>
<td>35%</td>
</tr>
<tr>
<td>3 rooms</td>
<td></td>
<td>14.60%</td>
<td>44%</td>
</tr>
<tr>
<td>4 and above rooms</td>
<td></td>
<td>6.90%</td>
<td>11.8%</td>
</tr>
</tbody>
</table>

3.3.6.3 Water and Sanitation

Nearly all (97.7%) households had own pit latrine for their sanitary needs. The main source of drinking water was boreholes as reported by 90.3% households, river/streams (3.6%), and unprotected water wells (3.8%). These results seem to show that studied households have greater access to clean drinking water. The significance of the results is that households living standards had improved thus the need for clean water and sanitary facilities in order to reduce the prevalence of communicable diseases such as diarrhea, hand washing with soap is critical. People who do not wash hands properly have the potential to transfer germs to others through handshakes or through food contamination.

3.3.6.4 Sources of energy

Sources of energy used by studied beneficiary households for lighting, cooking at baseline and EPE were as follows:

**Lighting**

Findings revealed a sharp increase in the use of solar from 44.1% at baseline to 82.6% of households at EPE and electricity also increased from 1.8% at baseline to 4.4% of households at EPE. However, there was a decline in proportion of households that used paraffin-wick from 35.9% at baseline to 7.4% at EPE (figure 3-12). These results are suggestive of improving living standards and increased awareness of clean energy to reduce indoor air pollution, improving health and quality of life.

![Figure 3-12: Household Source of lighting](image)
Cooking
The main source of energy used by households for cooking was firewood, followed by charcoal and paraffin. Findings showed a decline in the use of paraffin/kerosene from 0.8% at baseline to 0.3% of households at EPE. However, there was no change in proportion of households that used charcoal and a slight increase in those that used firewood (figure 3-13). The initiative of energy saving stoves although has not yet taken shape, its upscaling will help save forest trees.

![Figure 3-13: household source of energy for cooking](image)

It was observed that in an attempt to mitigate environmental degradation, ARUWE provided some training to beneficiaries that culminated into business opportunities. For example, while the focus was to reduce on the use of fire wood being used for cooking by most households, Ms. Ndaisenga Joan (photo 3-3) saw a business opportunity.

**Ms. Ndaisenga Joan** said “I had an opportunity to be taught how to make energy saving charcoal stoves. Later I was taken to ATKON for further training on making stoves, ecosan toilets and solar energy which was for 5days. After the training I got the certificate in Charcoal Stove and now days I am training other women in making the stoves. I was given the tools. I am happy to teacher other people and I will also start making charcoal stoves as business when I get support from ARUWE”.

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3.4 Households food security

The third research question in this study was to evaluate if project outcomes had led to improved food and nutrition security in beneficiary households. According to the Food and Agriculture Organization, FAO (1996), “food security exists when all people, at all times, have physical, social and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” Thus, information on food availability, food consumption, household diet diversity, household hunger scale, and coping strategies were collected. Results from this data analysis are systematically presented and discussed in comparison with those from the baseline study conducted in 2017 as shown below:

3.4.1.1 Food availability

Three major sources of food were reported by respondents: own production, market and NGOs, and purchased. The main source of food was own production though the market was upcoming. Proportion of households that produced own food declined from 91% in 2017 to 83.8% at EPE. However, there was an increase in proportion of households that obtained food majorly from the market from 1.1% in 2017 to 16.1% at EPE. Very few (0.1%) households reported sourcing food from NGOs at EPE compared to 6.9% in 2017 perhaps indicating phasing out of any humanitarian assistance that existed in the study area before.

Asked about their household food supply during the last 12 months, it was found that there was no major difference in proportions of households which reported they ‘sometimes’, ‘often’, or ‘always’ did not have enough food to meet family needs between baseline and EPE. However, there was a sharp decline from 50.1% in 2017 to 3.1% of households at EPE that said they ‘never’ in the past 12 months did not have

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enough food to meet your family’s needs. Instead, there was a sharp increase from 70.3% in 2017 to 71.9% of households at EPE that said they ‘rarely’ did not have enough food to meet your family’s needs (figure 3-14). These results show project beneficiary households realized improved food availability over the project period.

Figure 3-14: % HH often did not have enough food to meet your family’s needs

3.4.1.2 Food consumption

Household food consumption was captured by the number of meals they had in a day and comparison was made between baseline and EPE to evaluate the trend. Overall, there was an increase from 66.1% baseline to 74.9%EPE of households that had 3 meals. Further results showed that 16.4% had 2 meals, 7.4% had over 3 meals and 1.3% had 1 meal a day. It should be noted that household food consumption seemed to have generally increased over the project time period although it varied by household. The change in household food consumption might depend on the type of the food item in question.

For those food items that were produced wholly by the household, e.g. cereals, legumes, tubers, and vegetables, their consumption had either increased or decreased owing to mainly increase or decrease in household production. Other factors such as adverse weather conditions also affected the production and hence consumption of these food items. However, for those food items that were mainly purchased from the market e.g. meat, fish, sugar, oils and fats, and bread, their consumption either increased or decreased depending on the market price and the purchasing power of households.

In this study, the difference in food intake between men and women at household level was not ascertained. According to World Health Organization (WHO) standard calorie requirements, men would be expected to consume more food than women owing to their bigger bodies and higher energy needs7.

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But this might not be so, if men are absent during certain meals of the day perhaps because they have gone elsewhere for business, work, or entertainment.

3.4.1.3 Household Dietary Diversity Score (HDDS)

The evaluation assessed Household Dietary Diversity Scores (HDDS) for different food groups (cereals, roots, vegetables, fruits, legumes, meat, fish, eggs, milk) consumed over the last 24 hours. Overall average results indicate an increase from 2.1 HDDS baseline 2017 to 4.4 HDDS (median 4.1) at EPE.

Further results indicate increase from 26.4% in 2017 to 32.64% at EPE in households that reported high household dietary diversity score (HDDS) of 6 and above. Households with moderate household dietary diversity score (HDDS) 4.5-6 increased from 52% baseline 2017 to 57% at EPE. Further results indicate a decline in proportion of households that reported poor household dietary diversity score (HDDS) 0-4 from 21.6% in 2017 to 10.4% at EPE.

These results are suggestive that there was progress in the proportion of households with access to a variety of food groups necessary to meet the minimum dietary requirements for good health and well-being of household members. However, some households had lower Household Dietary Diversity due to low intake of fruits, meat and fish products in last 24 hours to the evaluation. Cereals and tubers food groups provided the base for household dietary diversity (table3-9).

Table 3-9: proportion of households that consumed given food category

<table>
<thead>
<tr>
<th>Food Category</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Any (t local starch food cereals)</td>
<td>91.2%</td>
</tr>
<tr>
<td>b) Any roots or tubers?</td>
<td>93.3%</td>
</tr>
<tr>
<td>c) Any vegetables?</td>
<td>71.9%</td>
</tr>
<tr>
<td>d) Any fruits?</td>
<td>33.1%</td>
</tr>
<tr>
<td>e) Any beef, pork, lamb goat, rabbit, wild game, chicken, etc</td>
<td>39.9%</td>
</tr>
<tr>
<td>f) Any eggs?</td>
<td>42.5%</td>
</tr>
<tr>
<td>g) Any fresh or dried fish or shellfish?</td>
<td>26.5%</td>
</tr>
<tr>
<td>h) Any food made from beans, peas, lentils or nuts?</td>
<td>80.1%</td>
</tr>
<tr>
<td>i) Any cheese, yogurt, milk or other milk product?</td>
<td>51.9%</td>
</tr>
<tr>
<td>j) Any foods made with oil, fat or butter?</td>
<td>69.1%</td>
</tr>
<tr>
<td>k) Any sugar or honey?</td>
<td>77.1%</td>
</tr>
<tr>
<td>l) Any other foods such as condiments, coffee or tea?</td>
<td>83%</td>
</tr>
</tbody>
</table>

3.4.1.2 Household Hunger Scale

Household Hunger Scale was another tool that was used to estimate the prevalence of food insecurity and utilization in the target households. Summing responses to six standard items gives rise to three household hunger categories: “Little to no household hunger” (scores 0-1), “moderate household hunger” (scores 2-3), and “severe household hunger” (scores 4-6).

Results indicated that an increase from 13.5% baseline 2017 to 18% EPE reported that they were food secure in past four weeks (table 3-10). The proportion reduced from 20.2% baseline to 16.7% EPE said that in past four weeks there ever no food to eat of any kind in their household because of lack of resources to get food; Household member went to sleep at night hungry because there was not enough
food reduced from 34% baseline 2017 to 33.3%EPE; reduction from 32.3% baseline to 32%EPE of households the past four weeks has at least a household member go a whole day and night without eating anything because there was not enough food.

Table 3-10: household hunger scale

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>EPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food secure</td>
<td>13.5%</td>
<td>18%</td>
</tr>
<tr>
<td>Food insecure without hunger (0-1)</td>
<td>20.2%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Food insecure with hunger (Moderate 2-3)</td>
<td>34%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Food insecure with hunger (severe4-6)</td>
<td>32.3%</td>
<td>32%</td>
</tr>
</tbody>
</table>

3.4.1.3 Coping strategies to food shortages

Over four in five households never applied any coping strategies to food shortage (table 3-8). Further results indicate a decline in proportion of households that reported commonly responding to a food shortage by purchasing food on credit from 61.9% in 2017 to 19.9% at EPE, borrowing money to buy food reduced from 23.3% in 2017 to 7.1% at EPE, borrowing food from neighbors and friends reduced from 23.2% in 2017 to 9.1% at EPE, and reducing on the number of meals eaten a day from 21.4% in 2017 to 13.4% at EPE.

Over 80% of the households had access to enough food with a small proportion <20% using some strategies 1 day a week, less than 10% 1-2days a week, 1% or less 3-6days a week and less than 1% almost every day (table 3-11). The limited use of coping strategies is suggestive of high household food security stability with low food shortage risks.

Table 3-11: % Household applying coping strategies

<table>
<thead>
<tr>
<th>Coping strategy</th>
<th>Never</th>
<th>Seldom (&lt;1 day/wk)</th>
<th>Once in a while (1-2 days a week)</th>
<th>Pretty often (3-6 days/week)</th>
<th>Almost every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Limit portion size at mealtimes?</td>
<td>83.6%</td>
<td>14.3%</td>
<td>1.9%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>b) Reduce number of meals eaten per day?</td>
<td>78%</td>
<td>13.4%</td>
<td>8.1%</td>
<td>0.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td>c) Skip entire days without eating?</td>
<td>95%</td>
<td>2.6%</td>
<td>1.1%</td>
<td></td>
<td>0.5%</td>
</tr>
<tr>
<td>d) Borrow food or rely from help from a</td>
<td>89.2%</td>
<td>7.1%</td>
<td>3.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Exchanged property for food?</td>
<td>96.5%</td>
<td>2.7%</td>
<td>0.5%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>f) Purchase food on credit, or take a loan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Sold household property</td>
<td>95.4%</td>
<td>3%</td>
<td>1.4%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>h) Consumed seed stocks</td>
<td>82.3%</td>
<td>10.3%</td>
<td>6.2%</td>
<td>1.1%</td>
<td></td>
</tr>
<tr>
<td>i) Received food assistance from relatives?</td>
<td>87.7%</td>
<td>9.1%</td>
<td>3.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>j) Sold animals/poultry for food ?</td>
<td>88.5%</td>
<td>7%</td>
<td>4.3%</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>k) Received assistance from government?</td>
<td>84.9%</td>
<td>9%</td>
<td></td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>l) Rely on casual labor for food?</td>
<td>88.5%</td>
<td>9.5%</td>
<td>1.5%</td>
<td>0.3%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

3.5 Women farmers experience increased financial empowerment and decision making

The last research question was to assess whether project outcomes led to increased women’s financial empowerment and decision making. To do this, the Women Empowerment in Agriculture Index (WEAI) measures the empowerment, agency, and inclusion of women in the agriculture sector in an effort to
identify ways to overcome those obstacles and constraints. The Index is a significant innovation in its field and aims to increase understanding of the connections between women’s empowerment, food security, and agricultural growth. It measures the roles and extent of women’s engagement in the agriculture sector in five domains:

3.5.1 Decisions about Agricultural Production
Percentage of women empowered in decisions about Agricultural Production = 56%
Table 3-12: Household decision-making around production

<table>
<thead>
<tr>
<th>Question</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you (singular) participate in crop production in the past 12 months (that is during the last [one/two] cropping seasons)?</td>
<td>97.2%</td>
</tr>
<tr>
<td>How much input did you have in making decisions about production?</td>
<td>39.9%</td>
</tr>
<tr>
<td>How much input did you have in decisions on the use of income generated from crop production?</td>
<td>40.2%</td>
</tr>
<tr>
<td>When decisions are made regarding production, who is it that normally takes the decision?</td>
<td>57.9%</td>
</tr>
<tr>
<td>To what extent do you feel you can make your own personal decisions regarding production?</td>
<td>44.8%</td>
</tr>
<tr>
<td>Average input in household decision-making around production</td>
<td>56.0%</td>
</tr>
</tbody>
</table>

3.5.2 Decisions about resources owned
Evaluation findings revealed that 61.9% of women had access to and had decision-making power over agricultural productive resources. Details showed that poultry was the main (93.1%) resource owned and had decision making power, followed by (88.7%) for goats, sheep and pigs including agricultural land and farm equipment- non mechanized. The least was farm equipment mechanized. This is suggestive that women have limited access to labour saving technologies, this was consistent with results for WEAI specifically women experiencing work overload, lack of leisure and the small acreage cultivated earlier observed.

Table 3-13: Ownership of Productive Resources

<table>
<thead>
<tr>
<th>Item</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural land (pieces/plots)</td>
<td>83.6%</td>
</tr>
<tr>
<td>Large livestock (oxen, cattle)</td>
<td>40.2%</td>
</tr>
<tr>
<td>Small livestock (goats, pigs, sheep)</td>
<td>88.7%</td>
</tr>
<tr>
<td>Chickens, Ducks, Turkeys, Pigeons</td>
<td>93.1%</td>
</tr>
<tr>
<td>Fish pond or fishing equipment</td>
<td>21.9%</td>
</tr>
<tr>
<td>Farm equipment (non-mechanized)</td>
<td>83.6%</td>
</tr>
<tr>
<td>Farm equipment (mechanized)</td>
<td>22.1%</td>
</tr>
<tr>
<td>Average ownership of Productive Resources</td>
<td>61.9%</td>
</tr>
</tbody>
</table>

3.7.3 Women in control over use of income
The role of women in households over the control and use of income was found to be low and a hinderance to adequate empowerment as measured by WEAI. Results indicated that overall, 41.6% of women were in control over use of income. This dimension of WEAI domains was observed by the study as being one of the areas of concern in women empowerment efforts.

Table 3-14: Percentage of women in control over use of income

<table>
<thead>
<tr>
<th>Dimension of control</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>1.0%</td>
</tr>
<tr>
<td>Small extent</td>
<td>15.8%</td>
</tr>
<tr>
<td>Medium extent</td>
<td>37.2%</td>
</tr>
<tr>
<td>To a high extent</td>
<td>46.0%</td>
</tr>
</tbody>
</table>
3.7.4 Women who are empowered in Community Leadership
Results indicated an increase from 4 baselines 2017 to 52 EPE in the number of women farmers who are elected to a titled position of leadership within the 3 farming cooperatives, farming groups or local community structures. Further results indicate an increase from 50% in 2017 to 73% in the percentage of women that perceive of their ability to influence community leaders. Additional analysis revealed an increase from 46.7% in 2017 to 75% in the proportion of community leaders that consider women’s views as part of a more equitable decision-making process at community level, and this has helped improve the perception of women’s voice and given women more courage in advocating for their needs and taking up leadership positions.

*Interview with KI (ARUWE, staff) confirmed that “the project area has 35 women groups, which are village, parish, subcounty level, all women groups are headed by women and the rest of the women take part in selecting leaders”.*

3.7.5 Women empowered with available Time Use
When women were asked on how satisfied they were with available time for leisure activities like visiting neighbors, watching TV, listening to the radio, seeing movies or doing sports, and giving their opinion on a scale of 1 to 10, where 1 means you are not satisfied and 10 means you very satisfied, while if neither satisfied or dissatisfied this would be in the middle or 5 on the scale, Overall results showed that 14.9% of women were empowered with available time for use and inadequate if not satisfied (<5) being 2.7% (table 3-15). Just like control over income decisions, the evaluation also observed this WEAI domain as being one of the areas of concern in women empowerment efforts.

<table>
<thead>
<tr>
<th>Scale</th>
<th>%</th>
<th>Scale</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.9%</td>
<td>6</td>
<td>4.3%</td>
</tr>
<tr>
<td>2</td>
<td>0.8%</td>
<td>7</td>
<td>5.6%</td>
</tr>
<tr>
<td>3</td>
<td>2.6%</td>
<td>8</td>
<td>11.0%</td>
</tr>
<tr>
<td>4</td>
<td>2.6%</td>
<td>9</td>
<td>9.7%</td>
</tr>
<tr>
<td>5</td>
<td>29.9%</td>
<td>10</td>
<td>28.6%</td>
</tr>
</tbody>
</table>

3.7.8 Women Empowerment in Agriculture Indicator
Results from the 5DE analysis, the WEAI score was 68%, this was substantial but below the ‘adequacy level 80% of the weighted indicators is empowered. The study observed that fewer women participated in decisions on use of income, community leadership and high work overload not allowing them time for leisure. Further analysis showed that $H_e = 41.5\%$ of women who are empowered, $H_n = 58.5\%$ of women who are not empowered (1-$H_e$) and $A_o = 45.8\%$ of dimensions in which disempowered women have adequate achievement (table 3-16).

$$5DE = H_e + H_n(A_o)$$
$$= 0.415 + 0.585(0.458)$$
$$= 0.68293$$

<table>
<thead>
<tr>
<th>Indicator</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of women empowered in decisions about Agricultural Production</td>
<td>56.0%</td>
</tr>
<tr>
<td>Percentage of women with Access to and Decision-Making Power over Productive Resources</td>
<td>61.9%</td>
</tr>
</tbody>
</table>
### 3.7.9 Community perception that women can confidently speak at households

There was an increase from 65% in 2017 to 85.7% EPE of community members that perceived that women can confidently speak up at household and community level. These results are suggestive of improvement in women that experience increased empowerment and decision making at a household level, this also increases their confidence to use their voice in community meetings.

### 3.6 Evaluation of project implementation aspects

Further to assessment of the project outcome indicators that contributed to project goal which was “To transform lives and empower subsistence farming families in rural Uganda”, the evaluation assessed the project implementation aspects using OECD/DAC criteria. The assessment covered relevance, appropriateness, inclusiveness, effectiveness, impact, and sustainability of interventions discussed below:

#### Relevance/appropriateness

For socio-economic community interventions to be successful, they must be relevant and appropriate to priorities and needs of key stakeholders including the implementing organization, the Local Government and other community-based stakeholders. Accordingly, the evaluation assessed whether the project interventions were in line with local needs and priorities of stakeholders including ARUWE and Government. The findings suggest that the project was aligned to global, national, local and personal needs of the beneficiaries but also addressed community needs. For example, one of the most serious obstacles to increasing agricultural productivity and income of rural women in Kyankwanzi was their lack of security of land tenure, therefore communities had a need for interventions to ensure land rights.

> Information gathered at FGD (Nkobazambogo Group) revealed that land rights violations especially land grabbing, trespass and illegal evictions of vulnerable women tenants from farm land were rampant and discouraged women from efficient use of land resources. But ever since ARUWE started sensitization and supporting access to and ownership of land, establishment of area committees with para-legal teams, the situation has changed, no one can be evicted without following the right procedures.

Therefore, efforts directed towards land tenure security were consistent with the needs and priorities of women. A review of project progress report, 2019 revealed that ARUWE in collaboration with district land surveyor and the district land board chairperson mobilized and conducted 3 land rights awareness meetings for all the targeted farmers this resulted in all beneficiaries being knowledgeable of land registration procedures and the land tenure systems. They also understood the importance of having legal documents and procedure for land registration. The report added that district land board confirmed that out of the applicants at least 35% were women who applied for the leases and certificates in their own names.

Project interventions addressed household gender gaps through awareness on gender, encouraging participation of women in key agricultural production decisions and activities, including on use of...
productive resources and use of income. These interventions have empowered women but also improved gender relations at households responding to the need for gender equity.

The KI (Chairperson Land Board) said that “women who apply for land registration has gone up but was still low about 30% because some village women have a belief that women should not possess land, that only men should that is why the 55% of applicants were men”.

Production was at its lowest and smallholder farmers desperately needed improved crop production improvement technologies to increase household food security and incomes. The interventions to address this need ensured availability and access to quality inputs such as improved seeds. It also supported farmer capacity building for improving agriculture production, post-harvest handling, storage and market access.

The Government prioritized increased agricultural production and productivity as provided for under the National Development Plan (II). We find the project goal aimed at improving food security and livelihoods well anchored and aligned to NDPII. The project was also consistent with SDG1 aimed at reducing poverty and SGD2 which provides for ending hunger particularly among the poor, vulnerable and infants through access to safe and sufficient food all year round.

The benefits of strategic alignment of project objectives to donors, project implementers and Government strategic plans improves project success rates, creates value, eliminates wastes, provides clearer resource allocation decisions and sets a basis for synergies. The evaluation analyzed the alignment between the key outcomes of the project interventions and strategic priorities of ARUWE. Overall, the results revealed that the project objectives were anchored to the ARUWE strategic plan 2016-2021. For example, the project aimed to transform lives and empower 900 subsistence farming families in rural Uganda, which is a portion of the 25,000 women targeted under the strategic plan for increased agriculture productivity, food security and incomes by 2021. The project interventions for increasing assets and land resources for which the evaluation found as being linked to strategic objective to increase economic and social rights awareness and responsibility by 30% by 2021.

Inclusiveness

The evaluation established that the criteria for identifying the problem and action by project beneficiaries were inclusive in terms of participatory involvement of the community. Evidence from the GALS Methodology which the project applied put emphasis on the fight against poverty requiring participatory approaches that promote gender justice, and equality, therefore, GALS was utilized to promote the use of participatory methods which encouraged participatory and practical learning.

The KI (ARUWE staff) said “when we were designing the project, we first conducted a needs assessment involving local leaders and farmers to get their views including challenges and proposed solutions, it was from this interaction that we came up with activities, objectives for the project”.

Illustrating the widespread effect of encouraging men to play their roles through GALS, members of Ezinunula Women’s Group, Gayaza West said “I was surprised to see that Ms. Manuela received a loan

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of Ush 250,000 from the VSLA supported by ARUWE. When I learnt that the couple could be allowed to join, I joined and since then, we have been planning together on how much loan to get and how to spend….as a result, the children were no longer being dismissed from school over fees defaulting, they are performing well in good schools since we started getting joint loans…we now have good life at home”.

Evidence from the project startup form, 2017 revealed that the project design, timings of trainings and outreach approach would take into account the more limited time that these beneficiaries have to participate in the project, and ensure that key activities are undertaken at times of the day when other key household responsibilities do not need to take priority.

The evaluation further found evidence of community participation in reflection meetings on and initiatives which resulted in drawing action plans for implementation.

“We had lots of community engagements from the beginning with entry and inception meetings to enlist community leaders support to identify project locations, although, selection of beneficiaries was done by ARUWE. Notable also was that we aligned interventions to the District and Subcounty plans that aim at increased food production, food security, household income and gender equity” said the ARUWE staff.

Communities had a need for increased agricultural production, storage facilities, value addition and access to finance. Evidence available from the project progress report, 2019 indicated that the project trained 38 CATs giving them skills to mobilize and conduct trainings among their group members, ARUWE provided 3,000 Kilograms of maize and 7,500 Kilograms of bean seeds to 400 farmers enabling them expand acreage, trained 309 new farmers and 202 old farmers in good agronomic practices, Conducted three trainings for 803 farmers in land rights, and supported smallholder women farmer groups with value addition equipment (tarpaulins and shellers).

The FGD (Nkobazambogo) confirmed that they had a need for value addition as a group, that when they dry the produce on the tarpaulin, it dries very well, the grain is clean and keeps quality which has reduced losses.

The benefits of responding to the need for maize Sheller was well captured from a respondent of Kitwala Parish, Kitabona s/c “When I joined ARUWE project, maize production went up and also the buyers were very strict with quality (photo 3-4). They could deduct 2% if they found that the quality of the maize was poor. Much as we are paying Ush 5000 per 150 kg for the service, the benefit out way the cost because I am able to shell the maize in a very short time moreover of good quality”.

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Efficiency and effectiveness

As part of the evaluation, an analysis of the cost effectiveness of the project activities was done. The evaluation team examined the financial records for the project period to determine how much of the project expenditure was spent on direct project costs versus indirect project costs. The project delivery was at 99% of the total budget. Further analysis revealed that 75% of the budget was Direct project costs (DPC). The evaluation found the project cost-efficient having allocated 25% of the budget to Indirect Project Costs (IPC). Accepted best practices suggest that 30% of expenditure on development activities should go towards catering for indirect costs.

The project budget of (£346,966), this translated into £385.52 (Ush 1,542,071) per household over the three years. This implies that for every (Ush 514,023) project expenditure, 70%(Ush 359,816) per year as direct project costs for transforming and empowering a household in the project area. The evaluation observed that intervention in maize and beans at household level was an excellent tool for transferring capital from the richer cities to the poor rural women farmers and transforming some households forever.

To illustrate the trickle-down effectiveness of the project, one typical rural woman farmer, aged 33yrs, from Kitabona Subcounty, Kitwala Parish, Kamuli Village said “before ARUWE, I was in a bad state. I used to sell standing maize crop at future price of Ush 200/kg and if the loan is not paid in full, it was carried forward to next season. I was fed up with the poverty cycle. But the technical and loan support from ARUWE turned around everything. I sell the maize to buyers from town who pay market price and I have since bought a plot of land valued Ush 1,600,000, bought 3 goats valued Ush 500,000, with the excess money, my husband has opened up an electronics shop”.

ARUWE livelihood transformation project worked in partnership with both the District and sub-county levels. Project progress report, 2019 indicated that the project was implemented in collaboration with other implementing partners and government interventions. ARUWE received significant support from the district agriculture extension officer, the district cooperative officer, district development officer in addition to other leaders.

ARUWE worked with the district land surveyor and the district land board chairperson to conduct more awareness campaigns. Also, the innovative use of Community Agriculture Trainers (CATs) model could
have produced a multiplier effect and significantly reduced project cost, thus for every one (1) CAT, trained twenty for (24) rural women farmers and men were reached through CATs Model.

Commenting on partnership, the KI (Subcounty Agricultural Officer) said “under the partnership ARUWE project I played my role as a technical person in the distribution of quality planting materials but also train farmers in good agricultural practices through demonstrations, which helped in the adoption of good agricultural practices which increased crop yield”.

Illustrating further the partnership, the KI (Asst, CAO) said “as a district official incharge of NGOs, I monitor the progress of the project in the communities and feedback. Together with ARUWE, I help planning and sharing progress and the challenge observed that beneficiaries were few in the communities creating bias about the project”.

The KI (District staff surveyor) said “I have worked with ARUWE as a technical advisor and moderator on issues of land management, including providing documents needed by communities to access land such as maps. I was concerned that the project was located in limited areas which doesn’t allow people from other areas in the district to benefit”.

Intermediate outcomes
One of the most significant impact of the project was the transforming of subsistence farming households to turn maize and bean as a reliable source of income that has contributed to improved living standards through regular income flow there by contributing to accumulation of capital among resource poor households and enabling them to invest in Education and productive assets such as land with much positive effect accruing to women welfare. Notable was increase from 368(34%) in 2017 to 526(58%) in number of women farmers that own legally recognized land. Also observed was that, although, substantial proportion of woman was empowered their overall WEAI score (68%) was below 80% adequacy level. To illustrate this intermediate outcome, the evaluation captured a beneficiary’s story;

One beneficiary said “I have been living with my grandchildren, I never had anything from which to get money, the children were malnourished because of poor feeding and got sick very often. I did not know what to do, but as if this was God’s calling, ARUWE when the project was starting, I was among the first people who received seeds and trainings and also taught me about land rights. I used to be ignorant, and anyone could come and take away the land, or even stop me from planting any crop without giving any reasons. I felt disempowered because I thought I was a mere woman. But ARUWE taught me and I gained a lot of knowledge in my life. I was taught how be enterprising but the most significant was enlightening me about my rights whether as a tenant or land owner. I have been taught my rights and I cannot be suppressed any more. ARUWE taught me that even a woman can work, have income and invest in own land. I have since bought land worth Ush 3,500,000 I have the sales agreement (photo 3-5). I filled transfer forms in my names and submitted at the land registrar’s office, am waiting to get a land title”.

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Household poverty reduction
Significant reduction in household poverty and improving household standard of living over recent years is associated with progress in agriculture development. Evaluation shows that the main occupation for income of nearly all 97.7% (879) household in Kyankwanzi was farming. It also shows that 837 (93%) farming households said their income from farming had increased and had confidence in meeting their needs under the rising living standards.

The valuable evidence of the impact on reducing poverty is strongly reflected in some non-monetary welfare indicators for example ownership of modern assets increased from 72.1% baseline 2017 to 73.8% EPE, and share of households using improved roofs (iron sheets) increased from 85.9% baseline 2017 to 95.6% EPE, finished floor with cement increased from 29.4% baseline 2017 to 36.1% EPE and 97.9% households owned pit latrine. There was also a decline in use paraffin-wick for lighting but then use of solar increased from 44.1% baseline 2017 to 82.6% EPE, and electricity increased from 1.8% baseline 2017 to 4.3% EPE, although firewood use for cooking remained up. In terms of assets, TV ownership increased from 15.3% baseline 2017 to 33.9% EPE and radio increased from 82.4% baseline 2017 to 85.8% EPE. Progress in reducing income poverty is strongly reflected in other dimensions of welfare such as education, health, housing conditions (photo 3-6).

One project beneficiary said “I borrowed from ARUWE Ush 500,000, I invested the money in farming, and when I harvested, I was able to partially complete my house and the rest invested in a bar which has enabled me earn more income”.
Enterprise Diversification

Poverty reduction in rural areas is closely associated with the diversification of household livelihood portfolios away from agricultural activities towards non-farm household enterprises such as transport, wholesale and general merchandise retail in other sub-sector of the economy, although, in some cases they have completely shifted away from agriculture which potentially is unintended consequence with positive spillovers in other sectors of the economy.

Profits from maize and bean farming have been reinvested in other income-generating activities to enhance their wellbeing (photo 3-7). For example, 164 farmers have started retail shops and 72 have built better (permanent) houses, 150 fitted houses with solar power. Farmers that sold off their produce and bought motorcycles (99) and bicycles (167), and smallholders and engaged in the project could afford to educate their children.

Evidence from this evaluation shows nearly half 43.6% of households had alternative income from non-farm enterprises. There was a decline from 87.3% in 2017 to 53.2% at EPE households that had farming enterprise as main source of income and an increase from 8.2% in 2017 to 42% at EPE that took private business as the main source of income.

A respondent interviewed from Bugomolwa said “I completed P7 through UPE and because there was no money, my parents wanted me to get married to a tribe mate, which I failed. Life was very difficult in the village, I got married and had two children before separating their father after knowing we had HIV. I returned to my parents’ home and started farming, and got trained by ARUWE in agriculture and also got a loan of Ush 500,000 used it for farming and earned Ush 1160,000 paid off the loan and used the balance to change the business to tailoring. Kitengi dress making is now my business and I have a dream of having a motor vehicle”.

Photo 3-6: Ms. Nyangoma Margaret at her house
Food security
There was improved food availability with 71.9% saying they meet household food needs with food from own production and market sources but also noted was a reduction in dependence on institutional food assistance. Food availability has enabled better access to food resulting in an increased from 66.1% baseline to 74.9% households that 3 meals a day.

There was an increase in households that reported high HDDS (Score 6) from 26.4% baseline 2017 to 32.6% EPE, this is suggestive of improved food consumption and household access to a variety of foods.

Also observed was improved food security with more households reporting reduced severe and moderate hunger at households. There was improved food security stability as illustrated by limited change in coping strategies. Over 80% of households never used any coping strategies to counter food shortages.

These results generally suggest the project impact could be visualized through improved food security whereby more households have access to adequate and nutritious food all year round meet family food needs sourced from own production and or markets. However, there were concerns of recurring draughts resulting into seasonal crop failure leading to occasional food insecurity; land rights concerns affecting production; high costs for improved inputs; pests and diseases, high post-harvest losses and low prices. One opportunity seen was the rapid expansion of micro-finance.

The KI (Commercial Officer) said “There has been some improvement in food security, which is evident for example ARUWE constructed for farmers a warehouse for farmers to bulk and safely store their produce as they wait for ready market and better prices, this has reduced losses and promoted food security”.

Another KI (Sub county Agricultural officer) added that “it was very rare to find a household that had enough space for family members and also have where to keep the produce in bulk, so this really helped to protect farmers from losses and improved food security”.

Women empowerment
The most notable impact of the project was change in the attitude of women and men regarding decision making. Decision making requires knowledge of risk and confidence assessing and making choices. There was an increase in proportion of women from 15.2% baseline to 30.7%EPE that made purchase decision alone and from 27.3% baseline to 32.2% jointly with husband. This has helped them make right decisions and enabled them to invest the money in profitable ventures which have since improved on their standard of living.

KI (Chairperson land Board) said “Women farmers, through ARUWE have been able to purchase and own land with title deeds which has boosted their morale to work and earn more hence improving their standard of living and knowing land rights. Women through ARUWE have been mobilized to apply for land titles and get ownership of plots on public land and as a result 35% of applications were from women”.

Another KI (District staff surveyor) said “women have been able to secure ownership of land and showed interest in developing, large scale farming which has boosted their farming, increased production and with the help of ARUWE this has improved their standard of living”.

The CDO said “through sensitization meetings about gender based violence, men in the community have been able to change their perception towards women, Women can also speak and participate in decision making, cases of violence have reduced, women can also lead in various ventures without being discriminated, this has empowered other women in the community.

A male beneficiary and LC1 chairman said that “this village and many (30) households were involved in the project under Mukama Mulungi Womens’ group, and noted that there have been reduced GBV and what has changed is the increase in the number of women participate in community leadership. I have also noted that husband-wife relations have improved when there is good income as opposed to time back, money was source of evil. I give the example that each couple currently owns a mobile phone to keep communication live, a sign that ARUWE project has empowered women for better family life”.

A beneficiary from Gayaza in her testimony said;

“The situation was not good but after joining ARUWE, it has improved. Unlike before, I can go to ARUWE, get money and decide how to use the money either hire or buy land for farming, but previously, as a woman, I could not buy such assets because you could dig with the man and when money came in, the husband could determine what to do with the money, but these days, when I go to a group and get money, I just inform my husband and we agree on the land where I would farm and when the produce is sold, I pay the loan and the balance is mine, so I am so grateful to ARUWE for encouraging me and the support for developing me because of the exemplary life, I have become a leader.”

Another male beneficiary- Bugomolwa united group had this to say “the excellent decision to buy their solar battery was arrived at after consultation with his wife. She decided to differ buying a new “gomesi” until after a new solar battery was bought. This decision to sacrifice is evidence of women’s importance in making decisions that benefit family and community more than themselves, I thank ARUWE for empowering my wife”.

The FGD (Men, Bugomolwa) indicated that two heads are better than one, and that it takes two to tangle, were the expression of having empowered women. That never before, the support by ARUWE to their wives (Women) significantly increased production through access to land, seeds and trainings. But also, the empowered wife is able to control and manage finance for better household welfare we now say that our wives are not just keepers of money but rather empowered managers”.

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The impact of ARUWE project increased women financial empowerment is illustrated;

The LC3 Gayaza said “ARUWE gave loans to women with low interest rates 3-5% this has enabled them expand on farming through hiring bigger piece of land for increased production. Through farming, there has been an increase in household income as women became more responsible but also household living standards have improved as women are able to pay school fees for their children, provide basic needs and decreased dependence”.

ARUWE project has helped improve household income as women are now able to work and sustain homes, support their husbands which has fairly improved on the standard of living.

The Manager community fund said “livelihoods have been improved for example when a loan is given to a woman, it’s like it was given to whole family, they are able to pay school fees in private schools, medical expenses, feeding which brings peace at home. Access to finance is visibly seen through accessibility of land, increase in acreage of land for instance before farmers used to use 1 acre, but after the loans, they upgrade to 3 acres, the production went up, they paid the loans and applied for larger loans”.

Another KI (subcounty chief) said “through ARUWE project, women got to know the importance of working instead of staying home to wait for their husband’s income and decrease dependence”.

Testimony by a beneficiary
In the beginning before ARUWE, we were in bas state we used to just hire land and did not have money for pesticides, we tried to sell off maize crop in the garden and instead made more losses and suffering, this affected me and my family so much. When ARUWE gave me free seeds, I agreed with my husband to get a loan and to date I have got three loans for which we decide together with my husband on how to use it. I am happy with ARUWE, they understand the poor, because if there is crop failure due to draught, they postpone loan repayment. Being empowered has helped and my husband in that we plan everything together”.

Sustainability
To ensure sustainability of the positive outcomes, the program planned and worked at strengthening the key drivers including community ownership, partnering, transformed relationships and local level advocacy, climate smart interventions.

Community ownership
The community was involved in all aspects of planning, implementation, monitoring and evaluation of the livelihood project. The project involved the community through cost sharing. For example, VSLA, while the project provided the boxes, the members paid for the log books, for the maize shellers, while the project purchased and distributed to the communities, members were paying user fees to ensure it kept in running condition. The construction of the produce store in Gayaza, the community provided land, fetched water and accommodation of builders. Sharing of costs contributed to a high sense of ownership and likely continuity of benefits in the case project ends.

The project empowered the beneficiaries through engaging in joint decision making. For example, evidence from progress report 2019, the project drafted community support in identifying the direct beneficiaries that included vulnerable women. The efforts to mitigate climate change effects and prevention of land evictions were strengthened by working together with leaders. Sub-county leaders, elected community
leaders (LCs) and the community members in the implementation of the planned activities. The leaders have continued to volunteer their services even after the project closure.

The project has trained members of farmer groups have been engaged in planting using better agronomic practices where the project provided improved seeds. The knowledge, team work and inputs multiplied are likely to continue even after the project exits.

**Parting**
The project approach was to work in strong partnership with stakeholders in ensuring that services were effectively delivered to the communities. The partnership was based on the fact that when the project exits, the partners would remain and integrate the activities in their regular programs. The project partnered with Local government district departments (Land resourced, production and Marketing, Gender, the Police) through Memorandum of Understanding (MOU) that guided their working relationship. At community level, the project-built capacity of volunteers as CAT and Para-legal to continue with community work supporting agricultural related and land advocacy related matters.

**Systems and structures**
The project supported the setting up of systems and structures which are farmer owned. Group savings and loans associations (VSLAs) and microfinance institutions have greatly improved access to agricultural credit across the sub-counties. Evidence shows that VSLAs have helped individuals to acquire land, pay medical bills and school fees, and to expand businesses. VSLAs have been nurtured and developed some growing to became Cooperatives/ SACCO, which has helped to develop a savings culture among farmers. Members are borrowing money to start other income-generating activities, such as poultry, rearing of animals and boda boda.

ARUWE funds are also helping farmers shift from rudimentary practices to the use of motorized shellers and tarpaulin. Women’s groups have purchased land and plan to establish a maize mill to enhance value addition. Also notable was the establishment of a revolving fund expected to grow in in rounds and bounds when dividends are re-invested. Linkages to markets through setting up of bulking centers where collecting marketing was supported but also linkage to input dealers.

**3.7 Project rating, success and impact of COVID-19**
Overall, the project was a symbol of empowered and successful rural women but also largely praised for reducing incidences of poverty in three years. The most outstanding and widely acknowledged intervention that triggered the revolution was providing access to agricultural finance for rural poor women enabling them improve agricultural production and productivity through renting more land for production, hire labour among other but improved seed handouts downplayed and crippled their capacity to buy own seeds and instead recycled when weaned off the donations. Cost-sharing from the beginning and linkage to private sector input suppliers would have been a better method.

Construction of bulking stores at subcounty level was another outstanding intervention in support of better prices for farmers who have for time in memorial accused middle men of fraud and cheating yet end up voluntarily inviting them to their houses to evacuate their produce. A vibrant bulking store is a good model but this can be improved by supporting it to set up outlets in key urban areas side by side with grain traders. With this, farmers will get a premium price than ever before.
Impact of COVID-19
The COVID-19 pandemic drastically reduced the impact of the ARUWE project in the community as measures directed to curb the spread of COVID-19 reduced farmers capacity to produce and market their produce. Containment and social distancing measures adopted to slow the spread of the caused a production slowdown and a reduction in consumption.

As movement restrictions were imposed in the project area, agricultural input- such as seeds, organic fertilizers and insecticides supply chains were impacted including access to farmland. All this happed at critical time in the season, reducing production, harvesting capacity and market access. On top of that, public transport and markets were impaired. Supply chain disruption coupled with loss of income restricting people’s access to sufficient, diverse and nutritious sources of food significantly impacting on food security. Farmers that had obtained loans for farming could not repay the loans, and some instances repayment was rescheduled.
CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

Conclusion
ARUWE’s interventions in Kyankwanzi have had a successful transformative impact on the livelihoods of smallholder farmers through agricultural productivity growth and improved agribusinesses market integration as summarized below:

- The most significant transformative impact was reduction in household poverty. Progress in household poverty reduction was strongly reflected in improvement in various dimensions of welfare including increased assets (household and land assets) and income, improved housing and general improvement in quality of life. However, fluctuations in commodity prices affected household agricultural incomes.
- Increased resilience and reduced vulnerability to food insecurity with more households realising basic needs especially access to adequate quality food all the time. Nonetheless, farmer households still faced some production constraints including; limited access to improved technologies, drought, pests, diseases and the lack of full land ownership especially women.
- Microfinance institutions and group savings and loans associations (VSLAs and SACCOs) greatly improved household access to affordable credit across the project areas and allowed for a larger pool of savings to finance expansion in investment. This helped households to acquire land, pay medical bills and school fees and expand businesses contributing to improved household welfare. The only concerns related to low liquidity levels among VSLAs, and non-repayment of loans by a few households.
- Visible was the paradigm shift on who should make household financial decisions. There was noticeable increase in women’s involvement in making household decisions regarding asset purchases, borrowing and saving. Also notable was an increase in women advocating for their needs and taking up leadership positions.

Recommendations
Following the above conclusions, the following recommendations can be forwarded to ARUWE and other stakeholders for ensuring the sustainability of project outcomes and future programming:

i. Training in best agronomic practices, organic farming techniques, environmental conservations and climate change resilience and adaptation practices were important components of project implementation given the current worsening global warming crisis and climate change. The farmers and local government officials appreciated these practices especially climate adaptation practices for example the tree seedlings which were distributed to the beneficiaries. The evaluation recommends selection of model farmers to be trained in nursery bed management and support them to distribute to fellow farmers as a business. This would promote employment as well as providing sustainable sources of tree seedlings to the communities. Kyankwanzi District lies within a dry cattle corridor, whose vegetation is overwhelmed by cattle and massive land opening for crop fields. Therefore, ARUWE (or other actors including government) needs to rethink of promoting community-based tree nurseries to promote re-afforestation in this dry corridor.
ii. CATs are a vibrant community structure which trained farmers and fostered adoption best agronomic practice. It is very important, therefore, that even when the project ended, ARUWE continues support and/or follow-up the CATs to replicate and scale the best agronomic practices among other community members, for sustainability; or handover this structure to be managed by local government.

iii. Supplying farmers with planting materials of beans and maize was highly commended by the farmers and local government officers as having been a key intervention during the project which contributed to production. However, each farmer received these seeds once depending on the year of recruitment. Farmers recruited during Y1&2 expected more seeds in the subsequent year, which may not have been feasible. Hence, in order to break the dependence syndrome of farmers always waiting to receive seed donations every season, farmers should be supplied with parent seed stock at the beginning of the project and further trained to propagate and stock their seed for the subsequent seasons.

iv. According to information gathered during the evaluation, one of ARUWE’s priorities was to promote organic farming for environmental sustainability. For the farmers who adopted these practices, they reported the process was time consuming and tiresome to make the organic fertilizers and inputs compared to using inorganic inputs, which are readily available on the market. ARUWE should (individually or in partnership with other actors including government) venture into research and production of organic inputs and fertilizers to curb the proliferation of inorganic inputs.

v. ARUWE received 120,000,000UGX for community agriculture revolving loans, which was administered through Community Fund MFI. This fund supported farmers to hire labor for opening up fields, planting, weeding, harvesting and buying inputs that were not provided by the project. Due to COVID 19 effects, a number of farmers were not in position to pay back their loans promptly. We recommend that ARUWE continues to follow up Community Fund MFI to ensure that these loans are recovered and re-disbursed among the farmers to enable them further increase production. ARUWE and Community Fund need to further grow this fund in order to continue supporting progressive and outstanding farmers with bigger loans.

vi. VSLAs and cooperatives were important structures through which farmers were organized to promote collective pool of finances through saving and bulking of produce for collective marketing. There were many advantages attached to these models such as collective responsibility, unity, mutual support and economies of scale. We recommend that ARUWE upholds this approach in subsequent program designing, but also ultimately work to ensure these VSLAs and cooperatives already formed are sustainable.

vii. We acknowledge that ARUWE’s niche was to support women empowerment; and appreciate that while empowering women, ARUWE was deliberately proactive to include some men. This helped to remove any fears, mistrust and uncertainties that men could develop if they were not brought on board to understand what the organization was doing with the women. The men involved in the project were very positive and supportive of women empowerment, and worked hard to sensitize other community members. Hence, involving men was fundamental in promoting buy-in on the part of men and promoting men’s appreciation of women’s empowerment and men’s support of the women. We, therefore recommend that ARUWE upholds this inclusion in subsequent programming, but also gradually scale up this inclusion beyond 10% involvement of men as the case has been in this project.
viii. ARUWE should strengthen household income, food and nutrition security by ensuring equitable access to land and protecting land rights of vulnerable farmers especially the women.

ix. As VSLA savings grow the risks associated with safety also increase, and the old strategy of keeping keys with different members cannot reduce money theft. Hence, the need to rethink of appropriate VSLA approach linked to mobile banking services.

Lessons learned

• Relying solely on rain-fed agriculture is not a sustainable production strategy for farming households due to climate changes. The organization should reflect on other innovative affordable production approaches that can support communities to produce crops throughout the year, regardless whether it rains or not.

• Inclusion of men and local leaders during project delivery nurtures their buy-in. Men and local leaders who participated in this project have appreciated the importance of women empowerment, and have become great allies and ambassadors in sensitizing communities to further promote women’s rights and economic empowerment.

• Communities recognize and appreciate women that have income to bridge gaps and relieve men of some household financial requirements. Household standard of living and marital relationships improve when both the spouses participate economic activities.

• The quality of financial decisions improves when both spouses are members of the same VSLA
REFERENCES


ARUWE, 2017, Project startup form-Baseline filled form for “transform and empower the lives of 900 subsistence farming families in rural Uganda project, Kyankwanzi District”.

ARUWE, 2017, Baseline report “transform and empower the lives of 900 subsistence farming families in rural Uganda project, Kyankwanzi District”.

ARUWE, 2019, Mid-term review report “transform and empower the lives of 900 subsistence farming families in rural Uganda project, Kyankwanzi District”.

ARUWE- CR six Month and annual reports “transform and empower the lives of 900 subsistence farming families in rural Uganda project, Kyankwanzi District”.


World Bank, 2018: ACDP survey tool
INDDDEX project, 2018: Data4diets: Building Blocks for Diet-related Food Security Analysis. Tufts University, Boston, MA.

Terri Ballard etal, 2011: Household Hunger Scale Indicator definition and measurement guide

IFPRI, Oxford Poverty and Human Development Initiative (OPHI) and USAID’s feed the future, 2012: Women Empowerment in Agriculture Index (WEAI)
ANNEXES

ANNEX 1: LIST OF KEY INFORMANTS

1. Mr. Wekhanya Alex  Agriculture Development Officer, ARUWE, Gayaza
2. Mr. Peter Bitembero  Agriculture Development Officer, ARUWE, Nkandwa
3. Mr. Musasizi Meshach  Agriculture Development Officer, ARUWE, Kitabona
4. Mr. Kinene Leopold  LCV Chairman
5. Mr. Teefe Rogers  CDO,
6. Dr. Achong Moses  District Production and Marketing Officer,
7. Mr. Orom Emmanuel  LC3 Gayaza,
8. Ms. Hadija Birungi  VSLA Group leader,
9. Mr. Magoba Hamid  District Agriculture Officer,
10. Mr. Sekamate Brian  Commercial Officer,
11. Ms. Juliet Ganyana  Chairperson Land Board,
12. Mr. Kamoga Jimmy  Subcounty Agriculture Officer,
13. Ms. Sumayiyah  Subcounty chief,
14. Mr. Matovu John  District Staff Surveyor,
15. Mr. Kasumba Deogracious  Assistant CAO,
16. Ms. Norah  Manger, Community Fund),
17. Ms. Namuli Margaret  Chairperson Cooperative

Annex 2: ARUWE Data set

ARUWE data set.sav

Annex 3: ARUWE Household questionnaire

ARUWE Project HH Survey tool final.doc

Annex 4: ARUWE FGD Tool

FGD ARUWE Evaluation.doc

Annex 5: Key informant guide

ARUWE KI Evaluation Tool.doc

Annex 6: FGD attendance Lists

FGD attendance list ARUWE.pdf