



USAID
FROM THE AMERICAN PEOPLE



FINAL REPORT END LINE BENEFICIARY-BASED SURVEY (EBBS) OF USAID|GHANA'S RESILIENCY IN NORTHERN GHANA (RING) PROJECT

AUGUST 2019

This publication was produced at the request of the United States Agency for International Development (USAID). It was prepared independently by Saha Consulting and Services. It was authored by Lutuf Abdul-Rahman (MSc), Abubakari Abdulai (PhD), Nashiru Sulemana (PHD) and David Yao Mensah (PhD).

ENDLINE BENEFICIARY- BASED SURVEY (EBBS) OF USAID|GHANA'S RESILIENCY IN NORTHERN GHANA (RING) PROJECT

FINAL DRAFT REPORT

August 27, 2019

[Agreement Number: AID-641-C-14-00002]

DISCLAIMER

The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

CONTENTS

CONTENTS	i
LIST OF FIGURES	ii
LIST OF TABLES	iii
ACRONYMS	v
EXECUTIVE SUMMARY	vii
1. PROJECT BACKGROUND	1
2. EVALUATION PURPOSE & EVALUATION QUESTIONS	3
2.1. EVALUATION PURPOSE	3
2.2. EVALUATION QUESTIONS	3
3. EVALUATION METHODS & LIMITATIONS	2
3.1. STUDY DESIGN	2
3.2. STUDY POPULATION	2
3.3. DATA COLLECTION APPROACHES	2
3.3.1. Sample size determination and sampling techniques	3
3.3.2. Data collection tools and data sources for study questions	4
3.3.3. Recruitment and training of survey teams and pre-testing of survey tools	5
3.3.4. Ethical issues and consent	6
3.3.5. Quality control in data collection	6
3.4. ANALYTICAL APPROACH	6
3.5. LIMITATIONS	7
4. FINDINGS, CONCLUSIONS & RECOMMENDATIONS	8
4.1. CHARACTERISTICS OF SAMPLED POPULATION	8
4.2. QUESTION 1	9
4.3. QUESTION 2	19
4.4. QUESTION 3	23
4.5. QUESTION 4	25
4.6. QUESTION 5	29
Annexes	36
ANNEX II: SUMMARY OF PROJECT BENEFICIARIES BY DISTRICT AND ALLOCATION OF SAMPLE SIZE	59
ANNEX III: SOURCES OF INFORMATION	59
ANNEX IV: DATA COLLECTION INSTRUMENTS	60
ANNEX V: SOURCES OF DATA BASED ON EVALUATION THEMES AND KEY EBBS QUESTIONS	61
ANNEX VI: INDICATORS AND MEASUREMENT APPROACHES FOR KEY STUDY QUESTIONS	62
ANNEX VII: DISCLOSURE OF ANY CONFLICTS OF INTEREST	65
ANNEX VIII: RESULTS OF CORE 18 INDICATORS BY DISTRICT AND TYPE OF HOUSEHOLD	69
ANNEX IX: LIVELIHOOD INTERVENTIONS RESULTS - EBBS 2019	93
ANNEX X: DECISION MAKING ACROSS ALL INTERVENTIONS (COMPARISON OF 2017 BBS	110
ANNEX XI: HOUSEHOLD INCOME SOURCES AND FINANCIAL SECURITY	111
ANNEX XII: HOUSEHOLD RESILIENCE RELATED TO FOOD SECURITY	113

LIST OF FIGURES

Figure 1: Prevalence of stunting among children under five years	9
Figure 2: Stunting prevalence by age	10
Figure 3:Prevalence of wasting among children under five years	11
Figure 4: Wasting by age	12
Figure 5: Prevalence of underweight among children under five years.....	13
Figure 6: Underweight by age	13
Figure 7: Changes in community engagement with District Assembly and its units in the last 2 years	18
Figure 8: Beneficiaries who indicated they would continue interventions after RING support has ended.....	26
Figure 9: Whether respondent was rearing small ruminants for the first time.....	95
Figure 10: Material used for small ruminant pen construction	100
Figure 11: What respondents who keep their animals in pens do with the animal dropping.....	102
Figure 12: Whether beneficiary was farming soybeans before RING	103
Figure 13: Source of land for soybeans cultivation.....	103
Figure 14: Respondents who sold part of their LGV	108
Figure 15: Places respondents sold their LGV.....	109
Figure 16: Source of water for irrigating LGVs	109

LIST OF TABLES

Table 1: Summary of project beneficiaries and sample size	3
Table 2: Performance of component 1 indicators	15
Table 3: Performance of component 2 indicators	16
Table 4: Performance of component 3 indicators	18
Table 5: Satisfaction rating of services provided to improve health,, WASH and agriculture	19
Table 6: Performance of selected indicators among HH that benefited from single intervention	30
Table 7: Number of interventions HH benefitted from and performance in key indicators	30
Table 8: Decision making on the sale and use of proceeds from soybeans and leafy green vegetables	32
Table 9: HL.9-a: Prevalence of stunted children under five years of age by sex, age group and district	69
Table 10: HL.9-c: Prevalence of underweight children under five years of age by sex, age group and district.....	70
Table 11: HL.9-b: Prevalence of wasted children under five years of age by sex, age group and district.....	71
Table 12: Financial Security by type of HH and district.....	72
Table 13: Post harvest reduction techniques by HH type and district	73
Table 14: HHs reporting shorter lean season by HH type and district.....	75
Table 15: HHs reporting a reduction food consumption last year by HH type and district.....	76
Table 16: Number of months HH adjusted food intake by district	77
Table 17: Change in household income as a result of RING by HH type and district	78
Table 18: HHs reporting shorter lean period by HH type and district.....	79
Table 19: Percentage of HHs reporting improved nutrition practices by HH type and district.....	80
Table 20: Number of nutrition practices adopted by HH type and district.....	81
Table 21: Knowledge of appropriate IYCF practices by HH type and district	82
Table 22: Number of service delivery channels reported to mainstream appropriate nutrition messages by HH type and district.....	83
Table 23: Women dietary diversity by district.....	84
Table 24: Percentage of children who met minimum acceptable diet.....	85
Table 25: Minimum dietary diversity for children 6-23 months.....	85
Table 26: Prevalence of exclusive breastfeeding of children under six months of age by HH type and district.....	85
Table 27: Percentage of households with soap and water at a handwashing station commonly used by family members by HH type and district	87
Table 28: Availability of handwashing facilities by HH type and district	88
Table 29: Percentage of HHs practicing correct use of recommended HH water treatment technologies by HH type and district.....	89
Table 30: Percentage of respondents who knows any 3 critical times of hand washing.....	90
Table 31: Number of local government nutrition and livelihood services that recoded improvement by HH type and district.....	91
Table 32: Percentage of respondents who reported seeing improvement in 6 or more services by HH type and district.....	92
Table 33: Sources of money for VSLA savings (multiple response).....	93
Table 34: Comparison of last year's and this year's income.....	93
Table 35:Uses of money from VSLA share out (multiple response)	93
Table 36: Challenges encountered as a VSLA member (multiple response).....	94
Table 37: Percentage of VSLA members who took VSLA loans, amount take as loan and what it was used for	94
Table 38: Percentage of VSLA members who will continue to be VSLA members after the current cycle ended	94
Table 39: District level results for # of small ruminants received, births and deaths # missing, sold and amount generated from sale.....	95
Table 40: Number of small ruminants currently available by district.....	96
Table 41: Small Ruminants Management - # sick and # reported.....	96
Table 42: Whether respondent households have sold animals to date by district.....	97
Table 43: Number of small ruminants sold by district.....	98
Table 44: Amount generated from small ruminant sale by district.....	99
Table 45: Reasons for selling small ruminants (multiple response).....	100
Table 46: Material used for small ruminant pen construction by district.....	101
Table 47: What respondents who keep their animals in pens do with the animal dropping by district.....	102

Table 48: District level results on access to soy beans cultivating before RING, access to land, land size and harvest	104
Table 49: Quantity of soybeans for HH consumption and sale (multiple response (MR))	104
Table 50: Post-harvest management and sales decision making	105
Table 51: Number of months respondents had soybeans for home use	105
Table 52: District level results on vines received & planted, quantity harvested, sold and amount earned	105
Table 53: Respondents who will continue OFSP cultivation after the projec.....	106
Table 54: Sources of vines for those who want to continue OFSP cultivation after the project	106
Table 55: Type of vegetables cultivated by LGV beneficiaries.....	107
Table 56: Months with access to LGVs for HH consumption and access to and running of drip irrigation system	107
Table 57: Quantity (kg) of LGVs harvested by type of HH	107
Table 58: Quantity (kg) of LGVs consumed at home by type of HH	107
Table 59: Quantity (kg) of LGV sold by type of HH	108
Table 60: Uses of income from LGV sale	108
Table 61: Person who makes decision when it comes to taking VSLA loan	110
Table 62: Person who makes decision when it comes of sale of small ruminants.....	110
Table 63: Person who makes decision when it comes of sale of soy beans.....	110
Table 64: Person who makes decision on how to use the income earned from soy bean sale	110
Table 65: Person who makes decision when it comes of sale of LGV.....	110
Table 66: Person who makes decision when it comes of sale of OFSP	111
Table 67: HH financial security and sources and changes in HH income.....	111
Table 68: HH income sources as a result of RING, availability of additional income sources to purchase food, comparison of current income and that of last year and the management of surplus food.....	112
Table 69: Percentage of HHs that adjusted food intake because they did not have enough food, changes in period food intake was adjusted and availability of extra income to purchase food	113
Table 70: Number of months HHs adjusted food intake because they did not have enough food	114

ACRONYMS

ADS	Automated Directives System
AMEP	Activity Monitoring and Evaluation Plan
CI	Confidence Interval
COO	Chief of Operations
COP	Chief of Party
CU5	Children Under Five
DAs	District Assemblies
EBBS	Endline Beneficiary-Based Survey
FGD	Focus Group Discussion
FY	Fiscal Year
G2G	Government-to-Government
GC	Global Communities
GOG	Government of Ghana
HH	Household
IYCF	Infant and Young Child Feeding
KII	Key Informant Interview
LEAP	Livelihood Empowerment Against Poverty
LGV	Leafy Green Vegetables
M&E	Monitoring and Evaluation
MAD	Minimum Acceptable Diet
METSS	Monitoring, Evaluation and Technical Support Services
MMDA	Metropolitan, Municipal and District Assemblies
MTMSG	Mother to Mother Support Group
NGO	Non-Governmental Organization
NRCC	Northern Regional Coordinating Council
OFSP	Orange Flesh Sweet Potato
PICS	Purdue Improved Crop Storage
PIL	Project Implementation Letter
RING	Resiliency in Northern Ghana
RPCU	Regional Planning and Coordination Unit
SOW	Statement of Work
SPRING	Strengthening Partnerships, Results, and Innovations in Nutrition Globally
TL	Team Leader
USAID	U.S. Agency for International Development
USG	US Government

VSLA	Village Savings and Loans Association
WASH	Water, Sanitation and Hygiene
WDD	Women's Dietary Diversity
ZOI	Zone of Influence

EXECUTIVE SUMMARY

PROJECT BACKGROUND

The RING project was a US\$60 million USAID|Ghana and Feed the Future-funded five-year integrated project that contributed to the Government of Ghana's (GOG) and the USG's Feed the Future (FTF) Initiative's efforts. The goal of the project was to improve livelihoods and nutritional status of vulnerable households (HHs) in targeted communities in 17 Metropolitan, Municipal and District Assemblies¹ (MMDAs) in the Northern Region of Ghana. The project interventions were developed around five technical areas namely; nutrition, governance, water, sanitation and hygiene (WASH), agriculture and livelihoods.

The Project was implemented through these 17 MMDAs and the Northern Regional Coordinating Council (NRCC) and its decentralize units and departments respectively, along with technical assistance from Global Communities Inc., a U.S. based non-governmental organization (NGO). Implementation was funded either through direct awards from USAID or through subcontract from Global Communities to the MMDAs and the NRCC.

EVALUATION PURPOSE AND EVALUATION QUESTIONS

The purpose of the end line beneficiary-based survey (EBBS) was to satisfy the monitoring and reporting requirements of the RING Project. To achieve its purpose, the EBBS answered the under listed questions.

- To what extent has the RING Project achieved its intended goal and objectives as defined by the results framework?
- What unintended outcomes has the RING Project's Livelihood approach and activities achieved relative to improving farmer incomes and reducing vulnerability at the household level?
- What can be identified as lessons learned and best practices and from which stakeholders or beneficiaries? (Effectiveness)? To what extent are the RING interventions likely to continue after USG support? Is stakeholder buy-in likely to continue or be increased after the current project expires? (Sustainability)
- Which RING interventions are the most effective and least effective at improving livelihoods, nutritional status, and hygiene practices? (Efficiency and effectiveness)

EVALUATION DESIGN, METHODS AND LIMITATIONS

The survey was designed as a cross-sectional mixed method, to allow for the comparison of survey findings with the baseline and midline. Secondary data was obtained through the review of project documents and Feed the Future research methods and instruments. The primary quantitative data was collected through a HH survey and the qualitative through Focus Group Discussions (FGDs) and Key Informant Interviews (KII).

Multi-stage sampling was employed in selecting the beneficiaries for the HH survey. All selections were done using the random sampling function of SPSS. The HHs were selected from 16 out of the 17 MMDAs since one of them (Chereponi) had some security challenges at the time of data collection. This however did not affect the sample size since it was distributed among the remaining 16. The qualitative data was collected from selected staff of the NRCC and the MMDAs and its departments and units respectively and Global Communities.

The qualitative data was analyzed using NVivo (version 12) and the quantitative using SPSS version 20. The anthropometric data was analyzed using the World Health Organization's (WHO) Anthro 3.2.2 Survey Analyzer. Project performance was assessed by comparing the EBBS findings with that of the baseline and

¹ This is the same as District Assemblies as used in parts of this report

the project targets. The main limitation of the study was the conflict in Chereponi District which made it impossible to collect data from beneficiaries in that district at the time.

FINDINGS AND CONCLUSIONS

Question 1: To what extent has the RING project achieved its intended goal and objectives as defined by the results framework?

Question 1a: Progress towards the achievement of the project goal

The findings of the EBBS show that stunting prevalence (28.4%) had reduced by almost 2 percentage points among children under five (CU5). The reduction in severe stunting which reduced from 12.73% to 6.60% contributed to the marginal reduction in overall stunting. The reduction in stunting among girls (3.28%) was higher than in boys (0.79%). A 7.73 percentage point reduction of stunting among 0-23 months was recorded between the baseline (17.73%) and end line (10.0%).

The EBBS found that 23.1% of all the children under five were wasted. This reflects 8.14 percentage points increase in overall wasting with that of the boys increasing by 11.16% and girls 5.39%. Like in the baseline, more boys (23.6%) were wasted than girls (19.6%). Wasting levels increased between 0-5 months and 6-11 months and then decreased with increasing age.

Like wasting, underweight recorded a 9.81 percentage points increase between the baseline (25.59%) and endline (31.4%). The increase in underweight at the endline was due to an increase in moderate underweight [baseline 13.55% and endline 24.5%]. Severe underweight however recorded a reduction from 8.04% at baseline to 6.5% at endline. The underweight prevalence among boys (34.1%) was found to be higher than girls (28.5%), the girls recorded a relatively lesser percentage increase as compared to the boys; that is 8.91% and 10.60%, respectively. The findings also showed the levels of underweight increased gradually from birth to when children were 12–23 months old before it started to decline.

Question 1b: Have the combined efforts in WASH, Nutrition and Livelihood activities resulted in improved nutrition and hygiene behaviors for households in the target districts? (Indicators of interest here are MAD, WDD)

The project contributed to increasing the knowledge of the beneficiaries on key infant and young child feeding (IYCF) practices from 35% at baseline to 100% at endline. The number of service delivery channels that mainstreamed appropriate nutrition messages were 8 at the endline as compared to the project target of 5. The increased knowledge contributed to the adoption of some improved nutrition practices. These included women's dietary diversity (WDD) (Mean of 3.7 at baseline compared to 4.3 at endline); children receiving minimum acceptable diet (MAD) (from 10% to 64.4%) and exclusive breastfeeding (from 60% to 74.3%).

Question 1c: How has Global Communities RING activities strengthened local support networks to address the nutrition and livelihood needs of vulnerable communities? (For target MMDAs, and communities).

Decentralized units of the MMDAs indicated that the implementation of project activities has helped them visit the communities regularly and they are better able to interact with communities and get feedback on activities which are then used to inform planning for future ones.

About 6 out of 10 beneficiaries (60.3%) interviewed indicated that in the last year, staff from the decentralized units engaged members of their communities to plan on addressing their community's challenges in health, agriculture, and WASH.

The percentage of HHs reporting improvement in nutrition and livelihood services from local government increased from 11.5% in 2017 (midline) to 100% at endline, exceeding the project target by 25%. Despite the improvement, the majority (average of 77.2%) of the beneficiaries indicated that these efforts were not enough to address the nutrition, WASH, agriculture and livelihood challenges of their communities.

Conclusions question 1

Overall, it was observed that there was a remarkable improvement in IYCF knowledge and practices and hygiene practices among beneficiary HHs. The improvement in infant and young child feeding and hygiene practices could be attributed to the capacity empowerment of service providers and the increase in channels for receiving IYCF and hygiene information.

However, all these improvements in the area of practice and service provision had only modest gains in improving the nutritional status of children under five years in the beneficiary communities as there was only a slight reduction in severe stunting. They are however promising, and it is expected that in the medium term these improvements will translate into improved nutritional status.

Recommendations question 1

Sustained effort is required to get the improved IYCF and WASH knowledge coupled with the increased financial security of vulnerable HHs to translate into a reduction in malnutrition rates. These efforts will need to address HH food shortage and the use of extra income at the HH level.

Question 2: What unintended outcomes has the RING project's livelihood approach and activities achieved relative to improving farmer incomes and reducing vulnerability at the household level?

Only a few positive unintended outcomes were identified. No negative unintended outcomes were identified although some challenges were observed which could have limited the project performance. The FGDs with the project beneficiaries revealed that the project had improved upon their social capital as the regular meetings of the VSLA brought about more social capital and social cohesion in their societies. Most of the members mentioned that VSLA activity has brought unity and togetherness among the women of the community. As one of the participants in a FGD stated,

“...now we have the confidence to speak in public and now we know and care more about each other”
(Beneficiary FGD-Participant, Sagnarigu).

The cohesion among stakeholders was also reported at the MMDAs and the NRCC level. This was mainly attributed to the joint planning which enables the different units and departments to understand the activities of each other and to learn to work together in activity implementation.

Some challenges that were not anticipated in the design might have affected the project performance. Delay in the release of funds from the USAID to the Assemblies and from Assemblies to decentralized units was seen as one factor which could have limited project performance. Findings indicated that some of the activities were unduly delayed due to this late release of funds. The delay in the release of funds by USAID in some situations was due to the delays on the part of the MMDAs to retire funds already released to them.

It was also indicated that although the project design was very good as it focused on government agencies to carry out implementation, making Global Communities responsible for results when funds were sent directly to the District Assemblies was problematic and it led to conflict in roles where the Assemblies sometimes did not know whether to go to Global Communities or NRCC when they need support. Some MMDA staff, however, indicated that the staff from some of the Regional Departments were not very

responsive when they reached out for support hence, they had to resort to technical specialists at Global Communities.

Conclusions question 2

Unintended results such as the promotion of cohesion and understanding of each other's work among departments of the NRCC and decentralized units of the MMDAs might have helped in improving project activities implementation. Similarly, the cohesion and improved social capital coupled among VSLA beneficiaries may have contributed to improving the achievement of project results.

The challenges might have limited the achievement of project results. The inability of some stakeholder to understand the roles of NRCC and Global Communities limited the benefits such stakeholders could have derived from complementary roles of the two organizations.

Recommendations question 2

- On the side of the District Assemblies, future projects should include measures on funds release to units as a key performance indicator.
- Sending funds to District Assemblies directly helps to strengthen the decentralization system and should be continued. However, future projects should make MMDAs responsible for their results or give contractors some authority to hold MMDAs accountable for results.

Question 3: What can be identified as lessons learned and best practices and from which stakeholders or beneficiaries? (effectiveness)?

The key lessons learned, and best practices are discussed below.

- *Not allowing communities and beneficiaries to select interventions may have limited benefits:* Stakeholders at the regional, district and community levels were of the view that the effectiveness of the interventions was reduced by not allowing communities to select the interventions they were interested in. For example, in the case of the small ruminants, they were of the view that beneficiaries should have had options of different animals to choose from depending on the prevailing conditions in their communities.
- *Effective community engagement is key to project success:* Community engagement contributed to enhancing the project's effectiveness. Stakeholders at District Assembly and community level noted that community engagement is so valuable in driving home change in the community.
- *Use of multiple channels to provide behavior change communication information ensured beneficiaries increased access to information:* The use of several channels such as health facilities, VSLA meetings, radio, schools, meetings with Agric Extension Agents etc to provide IYCF and WASH information ensured that beneficiaries had constant access to information, and this contributed in increasing their knowledge.
- *VSLA remains an effective avenue for delivering information to community members:* It was so easy to deliver key information on critical health, nutrition, and WASH to community members using the VSLA platform and no extra resources were needed to mobilize the women.
- *Joint planning and review promote collaboration among departments and units:* The joint planning and review was seen to promote cohesion and collaboration among units and departments at the District Assembly and NRCC levels respectively. This also promoted experience sharing and learning.

Conclusions question 3

Lessons such as the use of multiple channels to enhance information provision and VSLA as an opportunity to deliver critical IYCF and WASH information were identified and used to enhance project results.

The effect of not allowing communities and beneficiaries to select interventions of interest on project performance was not identified during the project implementation, therefore no steps were taken to allow it to happen or to mitigate any limiting effect it might have on project results.

Recommendations question 3

- Future interventions should consider developing a menu of activities for communities to select from.
- The use of multiple communication channels should be continued by future interventions.
- The use of VSLA as a platform for the delivery of key messages should be promoted in future projects. However, care should be taken to limit the number of add on activities in order not to prolong the meeting times.

Question 4: To what extent are the RING interventions likely to continue after USG support? Is stakeholder buy-in likely to continue or be increased after the current project expires? (sustainability)

It was generally observed that beneficiaries would be able to continue the livelihood activities after the RING support has ended. The most promising ones according to the stakeholders included the VSLA and OFSP as it may require less effort to keep it running. Almost all the VSLA beneficiaries (99.3%) and 91.8% of OFSP beneficiaries indicated they will continue their activities after the RING project has ended. Some Regional and district level stakeholders held a contrary view in the case of OFSP. They were of the view that it could not be stored for a long time and beneficiaries might not be able to purchase the vines after the project is ended. The results from the HH survey however indicate most beneficiaries will not purchase vines because they preserve their vines and can also obtain it from friends.

Whilst soybeans did not feature in the FGDs and KII interviews as one of the activities which can be sustained, most of the beneficiaries (89.3%) indicated they will continue to farm soybeans after the RING support has ended. The small ruminant intervention was also seen as one that the beneficiaries can continue beyond the project. WASH activities in the area of constructing latrines and handwashing stations also have some chance of being sustained because the focus was on the use of local material and beneficiaries were given the skills to construct it on their own.

The MMDAs can continue to support beneficiaries to continue their activities after the project has ended by providing basic support like fuel because the project had laid a good foundation for that through capacity building and logistics support. The activities that can be continued through this approach are VSLA, mother to mother support groups (MTMSGs), community lead total sanitation and the community livestock worker approach because they require limited investment. The MMDAs will however not have the resources to continue to implement the soybeans and small ruminants' intervention by adding new beneficiaries because they are very expensive. Community livestock workers can however provide support to beneficiaries to maintain their small ruminants.

Conclusions question 4

The findings show a clear buy-in from the beneficiaries, hence their willingness to continue activities after the project has ended. It was generally observed that some of the interventions like VSLA, OFSP, MTMSGs and community-led total sanitation had the highest chance of being continued by the beneficiaries after the RING support had ended with little or no support from the MMDAs.

The rearing of small ruminants has potential although not like the others. Its sustainability will require the provision of critical services such as para vet.

The MMDAs would not be able to have new beneficiaries in small ruminants and soybeans. However, for VSLA and OFSP they could easily do that through providing fuel for field activities.

Recommendations question 4

- MMDAs should focus on providing fuel support to decentralized agencies to continue to provide regular support to beneficiaries especially the VSLA and MTMSGs and explore how they could use it to sustain other interventions.
- In future projects, the MMDAs should be tasked to take over and fund some project activities during the life of the project. This can be factored in as a performance measure and tied to continued funding under the project.

Question 5: Which RING interventions are the most effective and least effective at improving livelihoods, nutritional status, and hygiene practices? (efficiency and effectiveness)

The nutrition interventions focused on improving IYCF knowledge and practices among the beneficiaries was quite effective since the target of most of the IYCF knowledge and practice indicators were met.

For the WASH interventions, the distribution of the ceramic filters and aqua tabs and the construction of water harvesting facilities for HHs were seen to be the least effective. These interventions were quite expensive and delivered little value, as a result, they were discontinued. The most effective WASH intervention was the Community-Led Total Sanitation.

The results of the key indicators by the number of interventions a HH received did not show any clear trend that increasing the number of interventions a HH benefited from would shorten the period it experienced lean season, increased the practice of exclusive breastfeeding or enhance HH financial security. However, for HHs reporting they now have increased/ diversified income sources as a result of RING intervention and the availability of handwashing facility with soap, there was a clear trend. As the number of interventions per HH increased the proportion that had increased/more diversified income sources increased. Similarly, as the number of interventions increases the proportion with handwashing facility with soap/ash increases but does not increase further when more interventions are added after the third one.

Conclusions question 5

The project was quite successful in identifying and stopping ineffective and inefficient interventions which helped in improving the effectiveness and efficiency of the project.

It was not possible to tell which single interventions were more effective than the other because of the lack of baseline and midline figures to compare. However, the results suggested that supporting HHs with more than one intervention (layering) could be effective and help them to improve their resilience faster.

Recommendations question 5

- USAID should continue to allow some flexibility for future projects to be able to discontinue activities that are found to be ineffective and inefficient.
- Nutrition information and counselling interventions are effective in increasing knowledge on IYCF, however, a lot more is needed to move the increased knowledge to practices that will reflect on the nutritional status of children.
- The layering of interventions should be promoted as part of all projects targeting the poor and vulnerable.

I. PROJECT BACKGROUND

The Resiliency in Northern Ghana (RING) project was intended to demonstrate the development hypothesis that strengthening local networks (i.e. district and regional structures) to develop, implement and monitor nutrition, Water, Sanitation and Hygiene (WASH), and livelihoods activities would improve beneficiary nutrition and hygiene behaviors, which, in turn, would improve the nutrition and health status of women of reproductive age and children under five in targeted vulnerable households. The project had three components and five technical areas (nutrition; governance; water, sanitation and hygiene; agriculture and livelihoods) that contributed to the program goal to improve livelihood and nutritional status of vulnerable households in targeted communities in the Northern Region of Ghana.

The main objectives of the program were:

Component 1: Increased access and consumption of diverse quality food among target households, especially among women & children under five (CU5);

Component 2: Improved behaviors related to nutrition & hygiene for women & CU5; and

Component 3: Strengthened local support networks addressing the ongoing (nutrition & livelihoods) needs of vulnerable households.

Through the project interventions, RING was expected to contribute to the following results between June 2014 and September 2019:

- 100% increase in income of 80% of target households (HH);
- 20% decrease in prevalence of stunting among children under five;
- 20% decrease in prevalence of anemia among children under five;
- 20% decrease in prevalence of underweight among children under five; and
- 20% decrease in prevalence of wasting among children under five.

The goal of the RING Project was to improve livelihoods and nutritional status of populations in Northern Region², Ghana, which experiences the highest and most persistent rates of poverty and food insecurity in the country.

The project was a US\$60 million USAID|Ghana and Feed the Future-funded five-year integrated project that contributed to the Government of Ghana's (GOG) and the United States Government's (USG's) Feed the Future (FTF) Initiative's efforts, which was implemented to sustainably reduce poverty and malnutrition. The project aimed to improve the livelihoods and nutritional status of vulnerable households in partnering districts in the most food-insecure parts of the Northern Region. The RING Project's interventions were implemented through 17 Metropolitan, Municipal and District Assemblies³ (MMDAs) and the Northern Regional Coordinating Council (NRCC), along with technical assistance from Global Communities Inc., a U.S. based non-governmental organization (NGO). Using a data- and criteria-based approach to select communities and the target households, approximately two thousand five hundred

² For most of the life of the project, the 17 MMDAs partnering with RING were found in the Northern Region. However, in early 2019, the Northern Region split into three different regions, including North East and Savannah Regions. RING partner MMDAs are now found in all three regions, but this report will refer to Northern Region for consistency.

³ This is the same as District Assemblies as used in parts of this report

(2,500) vulnerable households were selected from each of the 17 partnering MMDAs in the Northern Region as beneficiaries. The project was implemented in collaboration with seven departments within the NRCC, including the Regional Planning and Coordination Unit (RPCU) and other technical regional directorates/departments such as the Regional Environmental Health and Sanitation Unit (REHSU), Regional Agriculture Department (RAD), Regional Department of Gender (RDOG), Regional Department of Community Development (RDCCD), Regional Department of Social Welfare (RDSW), and the Northern Regional Health Directorate (NRHD). Implementation was funded either through direct awards (i.e. Project Implementation Letters or PILs) from USAID or through subcontract from Global Communities.

2. EVALUATION PURPOSE & EVALUATION QUESTIONS

2.1. EVALUATION PURPOSE

The purpose of the end line beneficiary-based survey (EBBS) was to satisfy the monitoring and reporting needs of the RING Project by providing data to gauge the performance of 18 survey-related indicators in the RING Project's Activity Monitoring and Evaluation Plan (AMEP). Specifically, the EBBS sought to provide data:

- (1) To estimate changes in outcomes and outputs since baseline
- (2) To determine the project's interventions that are more effective at improving livelihoods.; and
- (3) To determine the effectiveness of activity management strategies for key interventions within the agriculture, livelihoods, nutrition, good governance, and WASH components of the RING Project.

The findings of the EBBS would also inform the project partners (USAID/Ghana, Global Communities RING and the target MMDAs and the NRCC) about which of the project interventions have worked well and why, which perhaps have not and why. USAID and its partners would use the information provided to inform post-project scale-up of the most promising RING activities and to inform future design of similar projects.

2.2. EVALUATION QUESTIONS

The following questions guided the evaluation process:

- I. To what extent has the RING Project achieved its intended goal and objectives as defined by the results framework?
 - a. Has the RING Project's government to government (G2G) interventions at the district level resulted in sustainable reduction in hunger and malnutrition for households, especially among children under five? (Malnutrition is measured by the nutritional indices of children under-five and hunger is measured by length of months without available food);
 - b. Have the combined efforts in WASH, Nutrition and Livelihood activities resulted in improved nutrition and hygiene behaviors for households in the target districts? (Indicators of interest here are the Minimum Acceptable Diet (MAD) and Women's Dietary Diversity (WDD) scores);
 - c. How has Global Communities RING activities strengthened local support networks to address the nutrition and livelihood needs of vulnerable communities? (For target MMDAs, and communities).

2. What unintended outcomes has the RING Project's livelihood approach⁴ and activities achieved relative to improving farmer incomes and reducing vulnerability at the household level?
3. What can be identified as lessons learned and best practices and from which stakeholders or beneficiaries? (Effectiveness)? To what extent are the RING interventions likely to continue after the United States Government (USG) support? Is stakeholder buy-in likely to continue or be increased after the current project expires? (Sustainability)
4. Which RING interventions are the most effective and least effective at improving livelihoods, nutritional status, and hygiene practices? (Efficiency and effectiveness)

The detailed statement of work is shown in [Annex I](#).

⁴ The approach is to engage with targeted households on several activities designed to diversify income streams. Initial support includes intensive training on asset management, followed by asset transfer (such as sheep or poultry), then supportive monitoring over time, typically 2-3 years to monitor growth of the herd/flock and to address periodic health and asset management issues as they arise. It also includes input support to targeted farmers (i.e. seeds, land preparation services), coupled with training and monitoring over the course of the first year. The second year, the farmers receive only inputs and monitoring, and by the third year, farmers only receive monitoring support/extension services from district agriculture staff.

3. EVALUATION METHODS & LIMITATIONS

This section presents the methods that were used to collect and analyze the data required for the evaluation. The section outlines the survey design, survey population and sampling, data collection methods and data analysis. Strategies to ensure data quality are also described.

3.1. STUDY DESIGN

The survey was designed as cross-sectional mixed methods, to allow the team gain rich insights and comprehensive understanding of the project performance and results and to allow for the comparison of survey findings with previous surveys such as the baseline and midline. The SPRING and RING baseline study served as the source of baseline data, whilst the 2017 Beneficiary-Based Survey (BBS) complimented with the RING midterm evaluation, provided the midline values. The data collected by the EBBS was therefore compared with these in addition to the project targets to determine the extent to which the project's goal, objectives, and key results were met. The quantitative data which served as the basis of assessing the extent to which project results were achieved was complemented with qualitative data which, among others, provided the lessons learned in project implementation and a deeper understanding of the findings. The study design also made provision for the review of secondary data.

3.2. STUDY POPULATION

The survey population was individual beneficiaries of the RING project interventions in 16 out of the 17 project MMDAs of Northern region. Chereponi was not included because there was an ongoing ethnic conflict at the time of the data collection. Staff of 6 selected MMDAs and their Decentralized units and that of the NRCC and its Departments were also part of the study population. Selected staff of Global Communities were also interviewed. The unit of analysis was therefore the individual beneficiaries or HHs, dependent on the indicator and staff of the MMDAs and the NRCC.

3.3. DATA COLLECTION APPROACHES

The study made use of both secondary and primary data. The secondary data was obtained through the review of project documents and Feed the Future research methods and instruments as listed below.

- Activity Monitoring and Evaluation Plan (AMEP) with indicator reference sheets
- BBS 2017 data collections tools and report
- RING Midterm performance evaluation report
- SPRING and RING baseline report with data collection tools
- Master list of RING Communities by district
- Master lists of household and beneficiaries by intervention and community
- Draft evaluation questionnaires
- Feed the Future Zone of Influence survey methods questionnaire 2018

The document review enabled the survey team to get a deeper understanding of the project and its interventions. It also helped in ensuring that the EBBS methodology was aligned to that of the 2017

BBS and the baseline to ensure that the results were comparable. The result of the review was also useful in the review and adaptation of the draft evaluation HH questionnaire.

The primary quantitative data was collected through a (HH survey and the qualitative through Focus Group Discussions (FGDs) and Key Informant Interviews (KII).

3.3.1. Sample size determination and sampling techniques

The EBBS adopted the 2017 BBS survey approach to determine sample size. With this approach, the sample size was calculated to be representative at the project intervention level. The sample size per intervention for the whole project was therefore calculated and distributed to the districts using proportional to size sampling.

The sample size for each intervention was determined using a 95% confidence interval, 5% margin of error, response distribution at 50% and the Raosoft sample size calculator (<http://www.raosoft.com/samplesize.html>). The calculated sample size for each intervention was adjusted for a 10% non-response rate and all of them added together to give a sample size of 2,063 (Table I).

Table I: Summary of project beneficiaries and sample size

Project intervention	# of beneficiaries*	EBBS sample size	10% non-response rate	effective sample size
Village Savings and Loans Associations	75547	383	38	421
Soybeans	22500	378	38	416
Small Ruminants	15485	375	38	413
Leafy Green Vegetables with Drip Irrigation System	5030	357	36	393
Orange Flesh Sweet Potatoes	51133	382	38	420
Total	169,695	1,875	188	2,063

*These are not unique beneficiaries because some beneficiaries received multiple interventions

The total sample size was allocated to 16 out of 17 beneficiary MMDAs⁵ based on the proportion of the total RING beneficiaries in each MMDA. The number of beneficiary communities from which the HH with beneficiaries were selected for interview in each district was determined by dividing the sample size allocated to that district by 18. The number 18 was based on a comparison of the sample size for the SPRING/RING baseline and the 2017 BBS with the number of communities visited in each case, which showed that an average of 20 and 17 respondents were interviewed in each community respectively. [Annex II](#) shows the summary of the total project beneficiaries by district and the sample size allocated to each district.

Multi-stage sampling was employed in selecting the beneficiaries. The first stage involved the selection of communities within the districts and the second stage, the selection of beneficiaries within the sampled communities. The random sampling function of SPSS was used to sample the number of communities required in each district, controlling for the different interventions. This ensured that communities that benefited from different interventions were covered appropriately to meet the total

⁵ Chereponi District was not part of the EBBS because of tribal conflict in the district at the time of data collection.

sample size needed for each of the interventions. In each sampled community, the same SPSS function was used to sample the beneficiaries, ensuring that beneficiaries of different intentions were covered. In each sampled community, 18 beneficiaries with 5 replacements were randomly selected. The list of beneficiaries for each community was shared with the survey team.

Since some of the beneficiaries benefited from multiple interventions, they responded to all sections of the questionnaire related to the interventions they benefited from.

Twelve (12) communities (approximately 10%) of the 116 sampled communities were selected for the beneficiary focus group discussions. These communities were purposively selected focusing on communities that benefited from multiple interventions. Two communities each were selected from 6 (West Gonja, East Mamprusi, Nanumba South, Saboba, Karaga, Kumbungu, Savelugu-Nanton) of the 16 districts covered by the EBBS. The district selection was carried out purposively to ensure that districts with different dominant ethnic groups were covered. More districts with Dagombas as the dominants ethnic group was however selected to enable us also to see if there were any difference in the pre-urban districts and the more rural districts. The number of participants for each FGD ranged from 8 to 12 beneficiaries. As in the selection of communities, FGD participants were selected based on their level of involvement in beneficiary group activities. FGDs were also held with staff of 6 MMDAs selected for the beneficiary FGDs. This involved RING project focal persons from all the decentralized units. Key informant interviews were however held with one District Coordinating Director (Kpandai district) and RING Component Leads for Nutrition, WASH, Agriculture, and Livelihoods. At the regional level, FGDs were held with key NRCC staff⁶ involved in the project implementation. Regional level key informants were the Regional Nutrition Officer, RING Focal Person from Regional Agriculture Department, Regional Environmental Health Officer and the Regional Director of the Department of Gender.

3.3.2. Data collection tools and data sources for study questions

HH questionnaire: The HH questionnaire (attached as Annex IV) was used to interview project beneficiaries. It provided information on 18 RING survey-based indicators. The HH questionnaire was discussed with RING and USAID Monitoring and Evaluation Technical Support Services project (METSS) and based on their input, the final questionnaire was produced. The questionnaire was piloted and field-tested during the training of Data Collectors. The final questionnaire was programmed into survey CTO to enable the use of tablets to collect data. Paper versions of the questionnaire were also taken to the field in case the tablets failed for any reason the paper version could be used and later entered into the application.

FGD and Key-informant interviews (KII): The KIIs and FGDs (qualitative data collection) among others focused on unintended outcomes; lessons learned; drivers of change; sustainability; perceptions on the most effective and least effective interventions and factors promoting and limiting the achievement of project results. The questions for each group of stakeholders focused on the role they played in the project implementation.

The qualitative data collection tools are shown in annex IV. [Annex V](#) shows the EBBS questions and the data collection tools used to collect data to address them.

⁶ Planning Officer; Planning Officer; Senior Planning Officer and, Planning Officer

Development and Finalization of Survey Tools: The consulting team referred to the RING AMEP for the definition of indicators. The under-listed documents and questionnaires were also used to guide the process of drafting and finalizing the survey tools.

- FTF Ghana Population-based Survey in Northern Ghana: Baseline Protocol
- RING and SPRING baseline questionnaire
- 2017 BBS questionnaire
- Nutrition and poverty in Northern Ghana questionnaire
- 2014 Ghana Demographic and Health Survey questionnaire
- Feed the Future ZOI Survey Methods - Questionnaire – 2018/201
- Feed the Future Indicator Handbook – March 2018

The draft survey tools were submitted to RING and METSS for review. After the review, there was a joint session with Saha Consulting and Services team to look at the comments from RING and METSS and to jointly address such comments in consultation with the RING Components Teams. Saha Consulting finalized the tools based on the feedback. The finalized tools were pre-tested in one of the beneficiary communities and the process used to further improve on the tools before the training and final pilot by the survey teams.

3.3.3. Recruitment and training of survey teams and pre-testing of survey tools

Fifty-six (56) Data Collectors and 14 Team Leaders (TL) were recruited and invited for training. The minimum requirements for TLs were a bachelor's degree, at least 4 previous experience as a TL in a HH survey and an ability to speak at least one of the local languages in the RING supported MMDAs. For the Data Collectors, the minimum requirement was a Higher National Diploma, an ability to speak one of the local languages in the project MMDA and experience working as a Data Collector in at least 2 previous HH surveys. To ensure that enough Data Collectors for each of the languages was recruited, the number of Data Collectors for each language was determined and used as the basis of the recruitment. For each language group, the number of Data Collectors recruited was more than what was needed. In the recruitment, consideration was also given to TLs and Data Collectors who have experience carrying out anthropometric measurement and ladies.

The 14 Team Leaders (TL) and 56 Data Collectors recruited were taken through a 5-day training. The training focused on getting them to understand the purpose of the survey; the data collection tools; the sampling procedure for the quantitative aspect of the survey; data collection techniques and ethics. A session of the training also allowed the Data Collectors to familiarized themselves with the tablets and the questionnaire in survey CTO collect. Data collectors also role-played interviewing each other and with the support of the consultants translated the data collection tools and the consent forms into the various local languages of the survey area. The role-plays helped the interviewers identify and resolve the complexities of collecting data from respondents. The Team Leaders participated in the Data Collectors training. They were however given extra training on team dynamics, how to monitor and review data collected and how to randomly selected and crosscheck interviews conducted by the Data collectors.

The Data Collectors and TLs were also trained in anthropometry with a focus on those with nutrition qualification and anthropometric measurement experience so they could take responsibility for the anthropometric measurement during the field survey.

As part of the training, the Data Collectors and TLs also got the opportunity to practice how to identify sampled beneficiaries in the field and to pilot the questionnaire on the Survey CTO platform. The questionnaires were amended, where necessary, based on the results of the pilot.

RING provided support to the training with selected Project Component staff taking turns to participate in the training on days questions related to their components were discussed. They each made brief presentations of their components for Data collectors to have a better understanding of the project's components and how each contribute to achieving the project's goal. They also provided technical explanations to questions and supported in responding to other technical inquiries. Out of the 70 people who participated in the training, the best 48 Data Collectors (34 male; 14 females) and 12 TLs (10 males; 3 female) were selected to form 12 teams of 5 each for the data collection. Qualitative interviews were conducted by the consultants.

3.3.4. Ethical issues and consent

Data collectors informed sampled HH heads of their mission and went through a consent process as part of the questionnaire administration. Only HHs that gave their consent to the process were interviewed. A copy of the consent form was given to the HH.

3.3.5. Quality control in data collection

Several steps were taken to ensure that quality data was collected. The first step was the training of the data collectors to ensure that everybody had the right and common understanding of the questions and that the translations were done correctly. The presence of TLs to support Data Collectors in identifying the sampled HHs, helping them to resolve challenges; review of collected data and re-checking interviews was another set of ensuring the collection of quality data. As part of the quality control, the TLs were required to re-check some key questions among 10% of respondents interviewed by each Data Collector. The teams also met every evening to review the day's work and to discuss any challenges. The TLs would bring such challenges to the attention of the Consultants, if they could not resolve them at their level.

Another level of quality control was unannounced visits by the consultants, METSS and RING staff to the teams to observe how the process was going and to provide feedback to them. For the first 3 days of data collection, the Lead Consultant reviewed all the data submitted for logic and inconsistencies and provided feedback to teams.

To enhance information sharing and quick resolution of challenges, a WhatsApp group made up of the TLs, the consultants and selected RING staff was formed. This also ensured that the responses given were seen by all TLs.

3.4. ANALYTICAL APPROACH

The analysis of the 18 core indicators was guided by the indicator definition and measurement defined in the AMEP. Reference was made to the 2017 BBS and the Feed the Future indicator handbook of March 2018. [Annex VI](#) presents the outline of the indicators that guided the consultants in answering the study questions.

Analysis of Qualitative Data: The qualitative data was analyzed using computer-assisted qualitative data analysis software NVivo (version 12) (QSR International Pty Ltd, Doncaster, Victoria, Australia). The field notes and audio recordings that were obtained during the data collection were transcribed verbatim and a thematic analysis performed. The analysis begun by reading, coding, and then categorizing the qualitative transcripts. Coding nodes were created based on the study objectives, the main themes of the interview and the focus group discussion guide. Specifically, the coding was done by finding references to different ideas, concepts or categories in the form of sentences, phrases and paragraphs within the sources (transcript), which represent them. When a meaningful segment of the text was found, a code was assigned, or category name to signify that segment. This continued until all the text was segmented. To ensure accuracy, the process was repeated several times to identify and code all the relevant segments to the study objectives.

Analysis of Quantitative Data: The quantitative data (HH questionnaire) was analyzed using SPSS version 20. The indicators were calculated using percentages and the results compared with that of the 2017 BBS and the SPRING and RING baseline. The assessment focused on the project effect and not impact since there was no control groups at both baseline and end line. Community-level weights were calculated and used for the data analysis.

The anthropometric data was analyzed using the World Health Organization's (WHO) Anthro 3.2.2 Survey Analyzer⁷ to generate sex-specific z-scores. Biologically implausible z-scores (scores below -6 and above +6) were removed from the endline analysis.

3.5. LIMITATIONS

The conflict in Chereponi District affected the collection of data from that district. As a result, beneficiaries from the district were not included in the study. However, this did not affect the sample size, since it was distributed among the rest of the 16 districts.

⁷ <https://whonutrition.shinyapps.io/anthro/>

4. FINDINGS, CONCLUSIONS & RECOMMENDATIONS

This section of the report presents the main findings, synthesis, and analysis of the results of the EBBS. The findings are presented by the evaluation questions, with that of each question followed by conclusions and recommendations for that question.

4.1. CHARACTERISTICS OF SAMPLED POPULATION

Respondents were categorized under the five intervention groups that they each benefitted from, namely Village Savings and Loans Association (VSLA), Small Ruminants, Leafy Green Vegetables (LGV), Soybeans and Orange Fleshed Sweet Potato (OFSP). The majority (45.5%) of them benefitted from two interventions; 18.7% benefitted from three interventions; 8.1% and 3.5% benefitted from four and five interventions respectively. The HHs that benefitted from only one intervention made up the remaining 24.2%. Besides being beneficiaries of the RING interventions, 18.5% of the respondents interviewed were also beneficiaries of the government's Livelihood Empowerment Against Poverty (LEAP) program.

The HH classification results showed that the majority were male headed (92.7%). Female headed HHs were 7.2% and child headed⁸ 0.1%. Islam was the most common religion (61.7%) of the respondents, followed by Christianity (26.3%) and Traditional Religion (9.9%). Those without any religion made up 1.9% with 0.3% belonging to other religions. The majority (43.8%) of the survey respondents belonged to the Mole-Dagbani ethnic group, 36.2% were Konkomba; 16% Guan; with Ewe and Anufu making up 2.3% and 0.4%, respectively. Other ethnic groups such as Akan, Grusi etc made up the remaining 1.3%. Eighty-nine percent (89%) of the respondents were married with 7.3% being widowed and 1.9% single or never married. Those who were either in informal consensual union or living together and those separated or divorced were 1.3%. About 0.5% did not respond to the question of marital status.

On English literacy, as much as 89.3% of the respondents could not read and write in English language. Only 9.5% could read and write in English language. The remaining 1.2% could only sign. The ability to read and write another language was equally very low with 89.5% not being able to do this. Only 5.4% could read and write in a local language and 3.9% in Arabic. The rest (1.2%) were able to read and write in Arabic and another local language.

⁸ HH headed by people less than 18 years of age

4.2. QUESTION I

TO WHAT EXTENT HAS THE RING PROJECT ACHIEVED ITS INTENDED GOAL AND OBJECTIVES AS DEFINED BY THE RESULTS FRAMEWORK?

- Has the RING Project's G2G interventions at the district level resulted in a sustainable reduction in hunger and malnutrition for households, especially among children under five? (Malnutrition is measured by the nutritional indices of children under-five and hunger is measured by length of months without available food);*
- Have the combined efforts in WASH, Nutrition and Livelihood activities resulted in improved nutrition and hygiene behaviors for households in the target districts? (Indicators of interest here are MAD, WDD);*
- How has Global Communities RING activities strengthened local support networks to address the nutrition and livelihood needs of vulnerable communities? (For target MMDAs, and communities).*

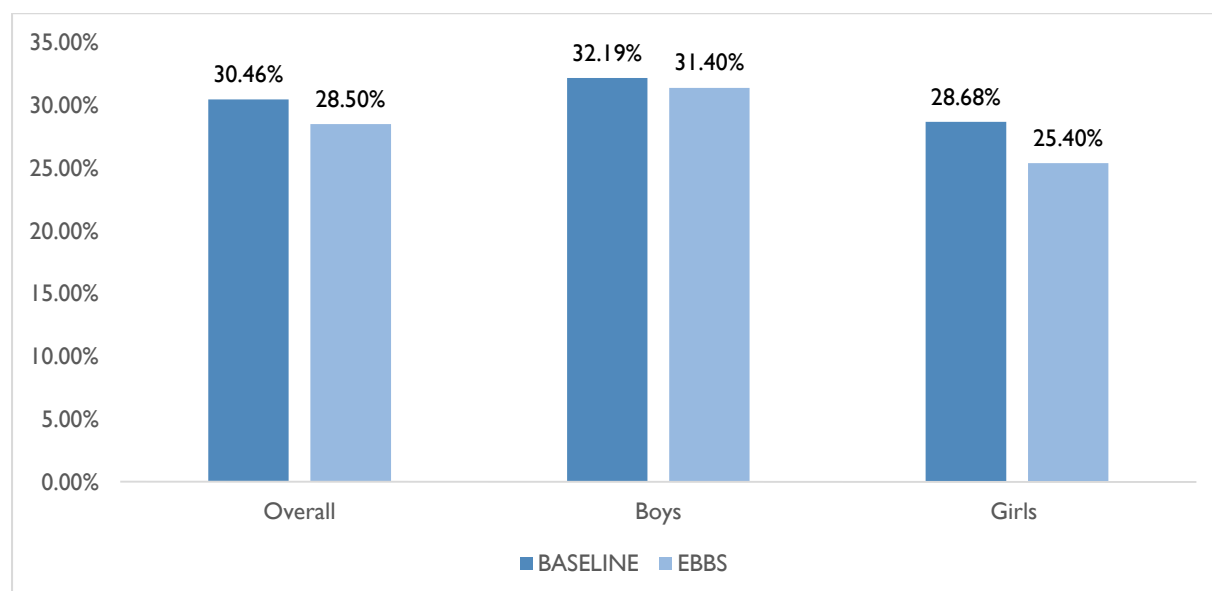
Question 1a: Progress towards the achievement of the project goal

Prevalence of stunting (height-for-age) among children under five years

Nutritional status of children 0-59 months is an important determinant of child survival⁹. The period from pregnancy to age 5 is especially important for physical, mental and cognitive growth and health and development of the child. However, this period is also when issues with poor nutrition and repeated infections may interfere with the child's optimal growth¹⁰.

Stunting reflects a failure to achieve expected height relative to a healthy well-nourished child of the same age. Being stunted or low height-for-age is (height for age < -2 SD of the WHO Child Growth Standards median) is associated with poor food intake during pregnancy, inappropriate child feeding practices, infection and insufficient nutrient intake¹⁰. Stunting reflects chronic malnutrition.

Figure 1: Prevalence of stunting among children under five years

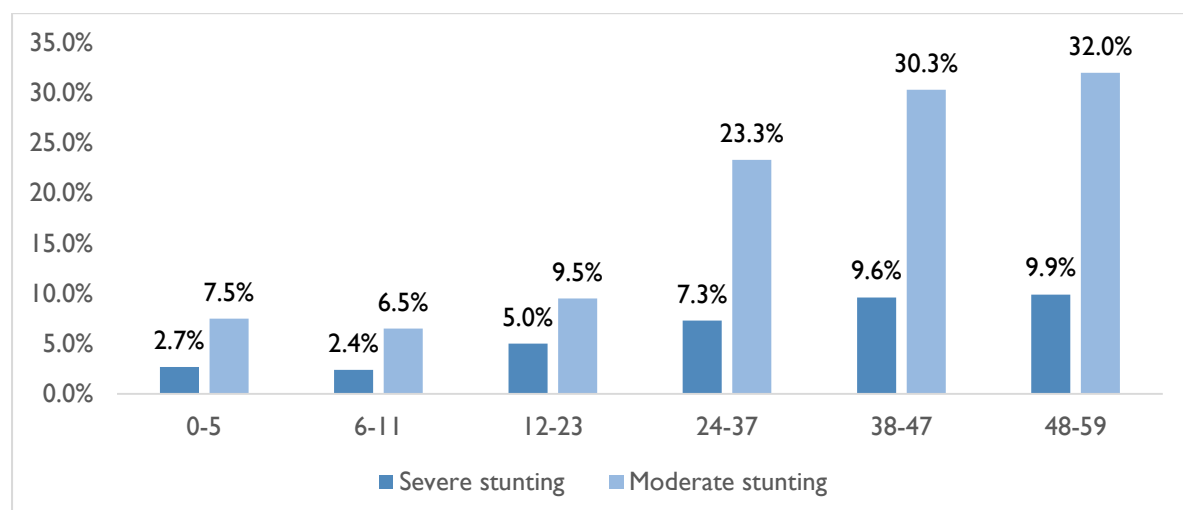


⁹ Chataut J, Khanal K. (2016) Assessment of Nutritional Status of Children under 5 Years of Age in Rural Nepal. Kathmandu University Medical Journal (KUMJ). 14(53):73–7.

¹⁰ Chirande L, Charwe D, Mbwana H, Victor R, Kimboka S, Issaka AI, Agho KE (2015) Determinants of stunting and severe stunting among under-fives in Tanzania: evidence from the 2010 cross-sectional household survey. BMC Pediatr. 2015;15(1):1–13 <https://doi.org/10.1186/s12887-015-0482-9>.

The findings of the EBBS (figure 1) shows that stunting prevalence (28.4%) had reduced by almost 2 percentage points among the CU5s in the project districts. The prevalence was found to be lower than the prevalence (29%) reported by the 2017/2018 Ghana Multiple Cluster Survey in Northern Region¹¹ and that of the baseline (30.4%). The prevalence found in the EBBS was also slightly lower than the 31.4% reported by 2018 USAID/Ghana Evaluate for Health Project in the Nutrition and Poverty in Northern Ghana Study¹². Further analysis of the results shows that a reduction in severe stunting contributed to the marginal reduction in overall stunting. It reduced by almost half, from a baseline of 12.73% to end line value of 6.60%. Analysis also showed that, stunting was very low among children 0- 5 (10.2%), 6-11 (8.9%) and 12-23 months (10.9%) compared to older children: 24-35 (30.6%), 36-47 (39.9%) and 48-59 months (41.9%) (Figure 2). Similar observations were also made by USAID/Ghana Evaluate for Health Project¹¹ when stunting and a child's age in months were examined, it showed that stunting was lower among children 0-23 months and increased with age until 30 months. The average prevalence of stunting among children 0-23 months is 10%. This implies there was a 7.73 percentage point reduction of stunting between baseline (17.73%) and end line (10.0%) among children 0-23 months. The improved knowledge of households in appropriate infants and young child feeding practices (100%) as found in the EBBS, contributed in increasing the proportion of children meeting minimum acceptable diet (64.5%) and increased prevalence of exclusive breastfeeding from 60% at baseline to 74.3% at end line (Table 3) which could have contributed to the reduction in stunting. The mean women dietary diversity scores also increased from 3.7 at baseline to 4.3 at end line, which suggest beneficiaries who conceived three years ago may have had optimal preconception and pregnancy nutrition leading to optimal fetal growth contributing to reduction of stunting prevalence among younger children (0-23 months) as stunting may start as early as from pregnancy¹³.

Figure 2: Stunting prevalence by age



There was an increase in moderate stunting between the baseline (17.73%) and endline (21.9%). The results as shown in figure 1 further shows that the reduction in stunting among girls (3.28%) was higher than in boys (0.79%). This is contrary to the findings of the USAID Evaluate for Health Study¹², in which the reduction of stunting was higher in boys than girls although very marginal and similar to its

¹¹ Ghana Multiple Indicator Cluster Survey 2017/18. Snapshot of findings.

¹² USAID/GHANA Evaluate for Health (2019) Nutrition and Poverty Reduction in Northern Ghana

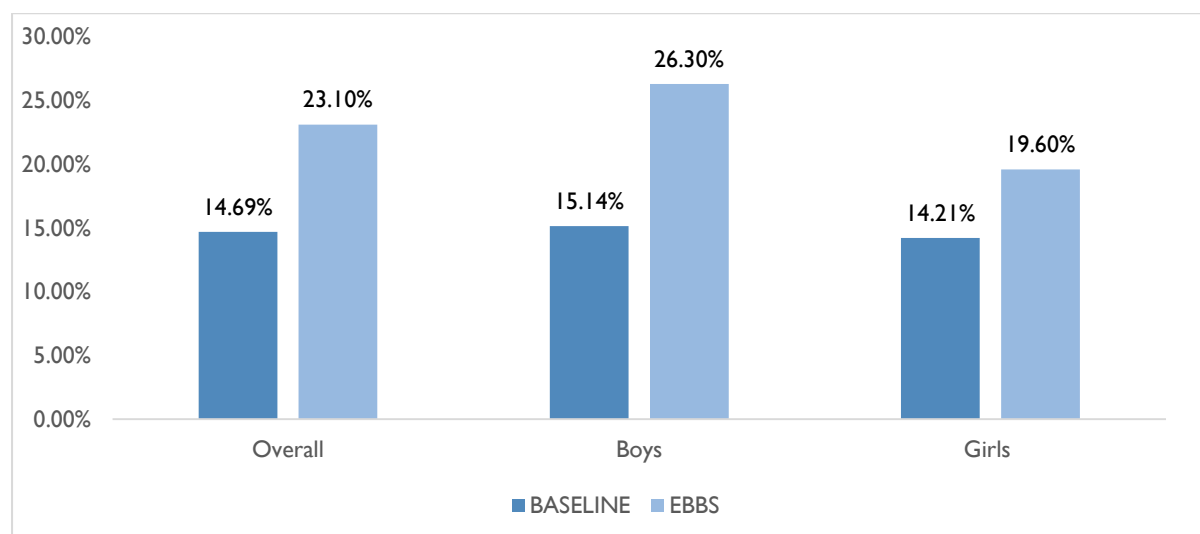
¹³ Chirande L, Charwe D, Mbwana H, Victor R, Kimboka S, Issaka A.I., Agho K.E. (2015) Determinants of stunting and severe stunting among under-fives in Tanzania: evidence from the 2010 cross-sectional household survey. BMC Pediatr. 2015;15(1):1–13 <https://doi.org/10.1186/s12887-015-0482-9>.

findings that overall stunting rate was lower among girls than boys. In an analysis of 16 Demographic and Health Survey data from Sub-Saharan Africa, Wamani et al¹⁴ attribute the lower prevalence of stunting among girls as compared to boys like that to the EBBS to preferences in feeding practices or other types of exposures.

Prevalence of wasting (weight-for-height) among children under five years

Figure 3 shows the prevalence of wasting. Wasting or thinness (below -2 standard deviations from median weight for height of WHO Child Growth Standards) is a measure of current nutritional status. It reflects a recent weight loss which is usually due to acute food shortage or disease. The measurement of wasting therefore tends to be affected more by seasonal availability of food.

Figure 3:Prevalence of wasting among children under five years



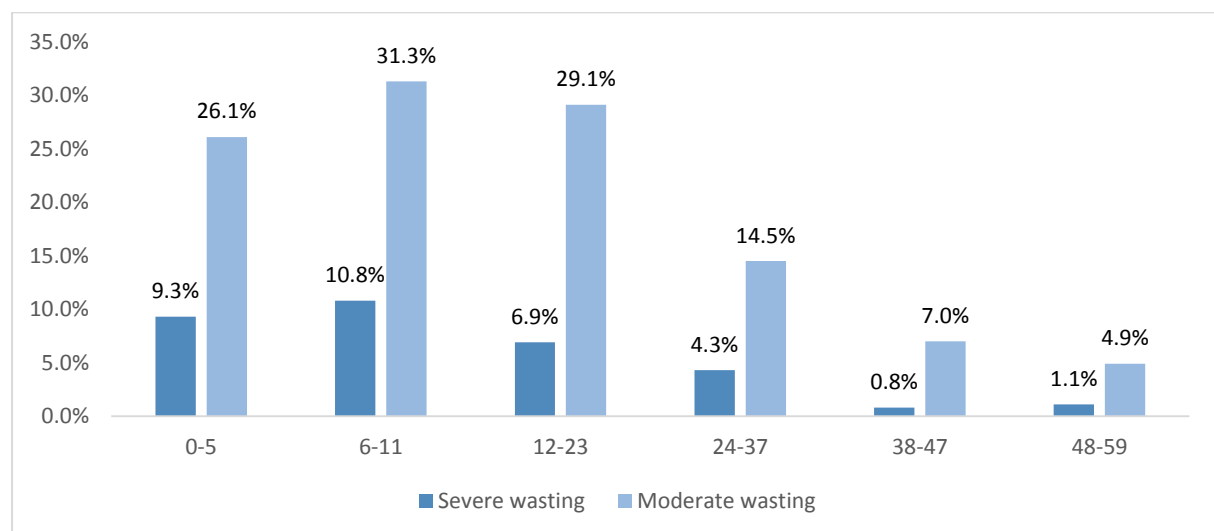
The EBBS found that 23.1% of all the children under five were wasted. Like the baseline, more boys (23.6%) were wasted than girls (19.6%). It was observed that the levels of moderate wasting were higher than severe wasting, same as in the baseline. These findings show that overall wasting had increased by 8.14 percentage points with that of the boys increasing by 11.16% and girls 5.39%. As an indicator of current nutritional status, high rates show that the beneficiaries might not have had enough food to eat during the immediate period before the survey. The study took place at the peak of shea nuts harvesting, and it was observed that a lot of the mothers were involved in shea nut picking which could have limited the mother's ability to provide optimal care, during the immediate period before the data collection. The fall armyworm invasion of farms in some areas in Ghana including the Northern Region in the last two years could have worsened the food security situation compelling households to adapt more drastic coping strategies, which might have resulted in the increased prevalence of wasting at endline. In a similar study among RING and SPRING beneficiaries in the Northern Region, they indicated the fall armyworm inversion and poor rain fall patterns contributed to reduction in HH food consumption¹⁵.

¹⁴ Wamani H, Åström AN, Peterson S, Tumwine JK, Tylleskär T (2007). Boys are more stunted than girls in sub-Saharan Africa: a meta-analysis of 16 demographic and health surveys. *BMC Pediatr.* 2007;7(1):17

¹⁵ USAID/GHANA Evaluate for Health (2019) Nutrition and Poverty Reduction in Northern Ghana

Variation of wasting according to age was also observed. There were increasing levels of wasting from 0-11 (Figure 4) months which is similar to the observation by previous studies in Northern Region^{16,17}. The highest level of wasting was observed in children 6-11 months (Figure 4). This observation is like previous studies conducted in Northern Region^{16,17}. The 6 -11 months period is the time children begin to receive complementary foods to complement breast milk and age at which breastfed infants are introduced to complementary foods is associated with increased risk of diarrheal diseases from contaminated weaning foods and gastric disturbances due to limited ability of the infant digestion system to handle complex carbohydrate and protein from plant sources¹⁸. This limits the ability of the infant to absorb nutrients hence the high prevalence observed in children 6-11 months in the EBBS.

Figure 4: Wasting by age



Prevalence of underweight (weight-for-age) among children under five years

Underweight status reflects both chronic and acute malnutrition. A child is considered underweight if his/her weight is < -2 standard deviations from that of WHO Child Growth Standard median for well-nourished children reflect both chronic and acute malnutrition.

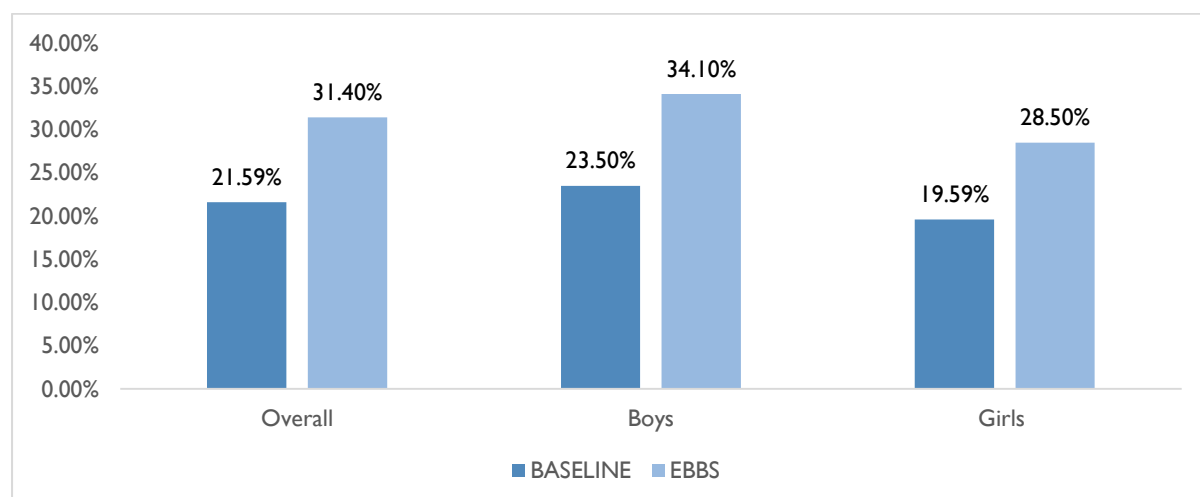
The level of underweight among the project beneficiaries recorded an increase of 9.81 percentage points (figure 5). The decrease in stunting prevalence as discussed earlier might reflect reduction in chronic malnutrition and the increase in wasting prevalence could reflect increase in acute malnutrition. Therefore, the increase in underweight which is affected by both chronic and acute malnutrition may be due more to the increase in acute malnutrition since chronic malnutrition might have recorded a decrease. Factors such as acute food shortage and disease which affect current acute malnutrition may be responsible for the increase in underweight.

¹⁶ Ghana Multiple Indicator Cluster Survey 2017/18. Snp shoot f findin.gs

¹⁷ Glover-Amengor et al. (2016). Nutritional status of children 0–59 months in selected intervention communities in Northern Ghana from the Africa RISING project in 2012 Archives of Public Health (2016) 74:12 DOI 10.1186/s13690-016-0124-1

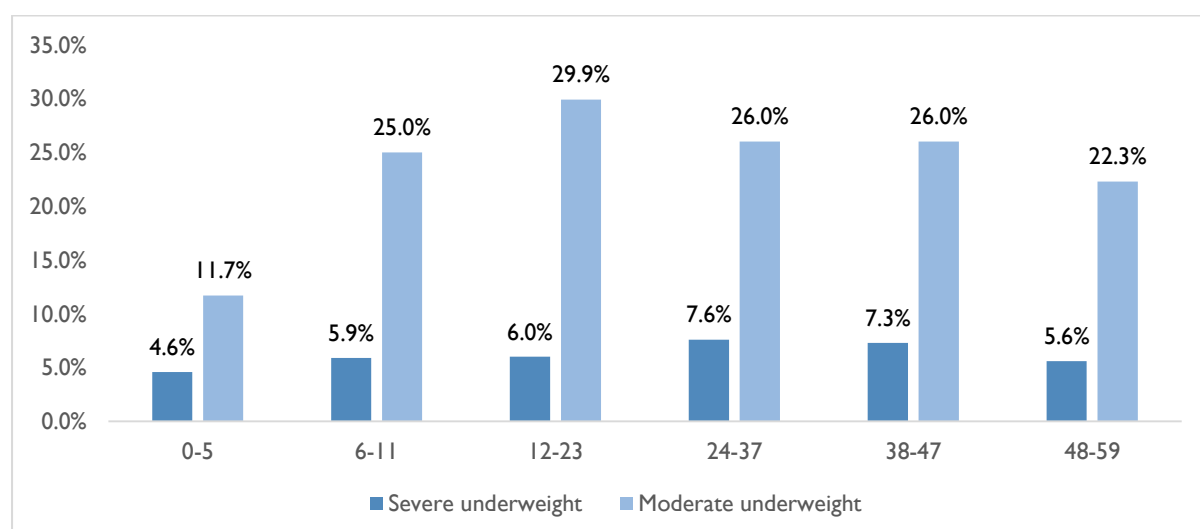
¹⁸ Cohen R, Brown K, Dewey K, Canahuati J, Landa Rivera L. (1994) Effects of age of introduction of complementary foods on infant breast milk intake, total energy intake, and growth: a randomised intervention study in Honduras. Lancet. 1994;344(8918):288–93.

Figure 5: Prevalence of underweight among children under five years



The underweight prevalence among boys (34.1%) was found to be higher than among girls (28.5%). The girls recorded a relatively lesser percentage increase as compared to the boys; that is 8.91% and 10.60%, respectively. The increase in underweight at the endline could be due to an increase in moderate underweight from a baseline figure of 13.55% to an endline figure of 24.5%. Severe underweight however recorded a reduction from 8.04% at baseline to 6.5% at endline.

Figure 6: Underweight by age



Further analysis also shows (figure 6) that levels of underweight increased gradually from birth to when children were 12–23 months old (0-5 months: 16.3%, 6-11 months: 30.9% and 12-23 months: 34.9%) and then levelled off to the third year of life (24-35 months: 33.6%) before it started to decline (48-59 months: 28.2%). This observation is like that made among children of beneficiaries of the USAID the Africa RISING Project in Northern Ghana, as the evaluation of the project¹⁹ also found that underweight levels increased from birth and then level off in the third year and declined.

¹⁹ Glover-Amengor et al. (2016). Nutritional status of children 0–59 months in selected intervention communities in northern Ghana from the Africa RISING project in 2012 Archives of Public Health (2016) 74:12 DOI 10.1186/s13690-016-0124-1

In general children from vulnerable HHs are more likely to suffer from severe forms of undernutrition. Since RING targeted vulnerable HHs, the children of the beneficiaries were likely to have poorer nutritional status and the project effect on the nutritional status of beneficiaries' children has started to show in the reduction of the severe forms stunting, wasting and underweight which is more likely to affect children from vulnerable HHs.

The relatively lower rates of stunting, underweight and wasting among girls as compared to boys may be due to "biological fragility" because growth velocity among boys is slightly more rapid compared to girls and their growth is perhaps more likely to be affected by nutritional insults or other disease or exposures²⁰.

Progress towards the achievement of objectives

The three components of the project as listed below reflect the results expected to be achieved based on the objectives. The achievement of the results related to these components is expected to contribute to the achievement of the project goal. The achievement of the objectives was assessed in relation to the achievement of the project indicators for these components.

5. **Component 1:** Increased access and consumption of diverse quality food among target households, especially among women & CU5;
6. **Component 2:** Improved behaviors related to nutrition & hygiene for women & children; and
7. **Component 3:** Strengthened local support networks addressing the ongoing (nutrition & livelihoods) needs of vulnerable households

The results for the four component indicators are shown in Table 2. The performance measurement of this component of the project was based on HH income, financial security, and adaptation of post-harvest loss management techniques. As shown in Table 2, all beneficiaries of crop interventions adopted at least one method of managing post-harvest losses. This exceeded the project target of 75% of beneficiaries adopting techniques for postharvest loss reduction. The adoption of these techniques would have contributed to a reduction in post-harvest losses for the beneficiary HHs. Reduced post-harvest losses would mean HHs would have more of their harvest for sale and consumption. The most widely used techniques were the Purdue Improved Crop Storage (PICS) bags (56.1%); improved mud silos (28%) and ground tarpaulins (12.2%).

The EBBS findings further showed that, a lot of progress was made in meeting the targets for increasing incomes and financial security of the beneficiary HHs. Seventy-six percent (76%) of the HHs reported increasing their income through RING supported activities and 69.1% reported being financially secured as a result of the project's supported activities. There was very little difference in the percentage of female headed HHs and the two types of male headed HHs who reported being financially secured. A similar observation was made in the case of the proportion of HHs who have increased their income through RING supported activities.

²⁰ García Cruz LM, González Azpeitia G, Reyes Suárez D, Santana Rodríguez A, Loro Ferrer (2017). Factors associated with stunting among children aged 0 to 59 months from the central region of Mozambique. *Nutrients*. 2017;9(491):1-16. <https://doi.org/10.3390/nu9050491>

Table 2: Performance of component 1 indicators

Performance Indicator	LoP targets	BBS 2017	EBBS 2019	% of target achieved
Component 1 Result: Increased access to and consumption of diverse quality food among target households, especially among women and children under five				
Intermediate Result 1c: Increased availability of affordable, diverse plant and animal foods throughout the year among target households				
I.1.2.1: % of households who state they are more financially secure	70.0%	33.0%	69.1%	98.7
I.1.3.1: % of target households benefiting from crop intervention reporting use of techniques to reduce post-harvest losses	75.0%	87.0%	100.0%	133.3
I.1.3.2: % of target households reporting shorter lean season as compared to the previous year	70.0%	N/A	41.9%	59.9
I.1.3.6: % of targeted households who have increased their income through RING supported activities	80.0%	N/A	76.0%	95.0

The use of the post-harvest loss reduction techniques was expected to lead to improved access and availability of food. The increased financial security could be as a result of the HHs selling the food produced since they will now have more because postharvest losses have been reduced by adopting the right techniques. This is particularly the case because the measurement of post-harvest loss reduction techniques was based on soybean, which is generally a cash crop. As a result of the increased and diversified income the HHs obtained through the project interventions, the HHs had more money they could spend on food. About 7 out of every 10 HHs (70.2%) reported having additional income which could be used to purchase food when the need arises. The results however show that this money might not have been spent on food.

Only about 42% of the beneficiary HHs reported having a shorter lean season as compared to the year preceding the EBBS data collection. The project's target of 70% at the end was missed. More male headed HHs (44.6% both adult male and female reported a shorter lean season as compared to the female headed with only adult male (28.4%) and female headed HHs (36.6%). The findings of the EBBS also show that 76.7% of the beneficiary HHs reduced their food intake or consume foods they would normally not consume at some point in the last 12 months preceding the survey. This reflects food insecurity and might have contributed to the missing of targets on malnutrition rates.

Question 1b: Have the combined efforts in WASH, Nutrition and Livelihood activities resulted in improved nutrition and hygiene behaviors for households in the target districts? (Indicators of interest here are MAD, WDD)

The component 2 of the project focused on the adoption of positive nutrition, hygiene, and sanitation behaviors. As shown in Table 3, all HHs interviewed reported having adopted an improved nutrition behavior²¹. This was 17.6% more than the projects' target of 85%. The targets of the other four nutrition-related performance indicators were exceeded (Table 3). The EBBS found that the project contributed in increasing the knowledge of the beneficiaries on key infant and young child feeding practices from 35% at baseline to 100% at endline. This was achieved by using multiple channels at community and health facility levels to provide information and education on these practices. As shown

²¹ This was measured based on the AMEP definition of HHs reporting the practice of at least one of the nutrition behaviors promoted by the project.

in Table 3, the number of service delivery channels that mainstreamed appropriate nutrition messages were 8²² at endline as compared to the project target of 5. The increased knowledge contributed to the adoption of some improved nutrition practices as already explained above. Other nutrition practices the increased knowledge contributed to its adoption were women dietary diversity (WDD) which increased from a mean of 3.7 at baseline to 4.3 at endline although the project target of 5 was missed; children receiving minimum acceptable diet (MAD) which also increased from 10% to 64.4%, 36.4 percentage points more than the target and exclusive breastfeeding which increased from 60% to 74.3%.

Table 3: Performance of component 2 indicators

Performance Indicator	Baseline	LoP targets	BBS 2017	EBBS 2019	% of target achieved
Component 2 Result: Improved behaviors related to nutrition and hygiene for women and children					
I.2.1: % of households adopting improved nutrition practices	N/A	85.0%	87.0%	100.0%	117.6
Intermediate Result 2a: Increased adoption of positive nutrition behaviors among target households					
I.2.1.1: % of respondents in target communities knowledgeable of appropriate infant and young child feeding practice ²³	35.0%	60.0%	67.0%	100.0%	166.7
I.2.1.2: Number of service delivery channels that mainstream appropriate nutrition messages throughout the community	0	5	5	8	160.0
HL.9.1-c: Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age	3.7	5.0	N/A	4.3	86.0
HL.9.1-a Prevalence of children 6-23 months receiving a minimum acceptable diet	10.0%	28%	N/A	64.4%	230.0
HL.9.1-b: Prevalence of exclusive breastfeeding of children under six months of age	60.0%	70.0%	N/A	74.3%	106.1
Intermediate Result 2b: Increased adoption of hygiene and sanitation behaviors in target households and their communities					
HL.8.2-5: Percentage of households with soap and water at a handwashing station commonly used by family members	N/A	30.0%	90.0%	81.7%	272.3
HL.8.2-6: Percentage of households in target areas practicing correct use of recommended household water treatment technologies	N/A	40.0%	96.0%	98.8%	247.0
3.1.8.1-2: % of respondents who know any 3 critical times of hand washing	91.0%	95.0%	70.0%	82.5%	86.8

Further analysis of the MAD showed that 95.5% of the children met the minimum dietary diversity score; the proportion of children aged 6 to 23 months receiving food from four or more of the recommended seven food groups. However, the percentage of children meeting minimum meal frequency (66.3%) was lower than those who met the minimum dietary diversity score.

²² Channels: Mother-to-mother support group facilitator, Community Health Volunteers (CHVs), health workers/health facility, Agriculture Extension Agents, School Health Education Program Coordinators, Environmental Health Officers, Community Development Officers/social welfare officer and Radio presenter/ advert

²³The Question for the measurement of this indicator was set as multiple response question which allowed respondents to select all options that apply. The options selected were used to calculate the indicator based on the AMEP definitions that any respondent who knew at least one IYCF practice was classified as being knowledgeable.

The performance related to improved hygiene and sanitation behaviors was also very good with the target of 2 of the indicators being exceeded by over 100% (Table 4). Nearly all HHs (98.8%) that use unimproved water sources used the project recommended HH water treatment technologies to make their water safer for drinking and other uses. This could contribute to reducing-water related diseases and overall morbidity of HH members. The EBBS found that the project had contributed to increasing the proportion of HHs with handwashing facilities near latrines from 4% at baseline to 34.5%. Out of the 34.5% with handwashing facilities, 81.7% had water and soap/ash at the handwashing station usually used by HH members. This was more than two times the project target of 30% although slightly lower than the 2017 BBS value of 90%. It is important to indicate that there was a slight difference in the 2017 BBS and EBBS methodology for measuring this indicator. *While the 2017 BBS asked the question directly to the respondent, the EBBS was based on observation by data collectors.* In terms of performance by the different types of HHs, 81.5% of female headed HHs had soap and water/ash at the handwashing station as compared to 75.8% for the male headed without adult female and 82.5% for the male headed with both adult male and female.

The EBBS further found that 82.5% of the beneficiaries knew at least 3 critical times of hand washing. This figure however fell short of the project target of 95% and was also slightly lower than the baseline figure of 91%. Once again, male headed HHs without adult female (74.4%) performed relatively lower for this indicator as compared to other HH types that is 81.8% for female headed HHs and 83.9% for male headed with both adult male and female and 100% for child headed. Based on the above-reported sanitation knowledge and behavior results, it seems that women have a very important role to play in HH level sanitation activities and their presence in a HH is very important when it comes to handling HH sanitation issues. This could account for the trend observed in the hygiene and sanitation indicators among the different types of HHs.

Question 1c: How has Global Communities RING activities strengthened local support networks to address the nutrition and livelihood needs of vulnerable communities? (For target MMDAs, and communities).

The indicators for component three of the project focused on measuring the participation of beneficiaries in project, the use of feedback from them in programming during the project implementation and the improvement in nutrition and livelihood services provided by local government institutions. All the implementing partners at the district level interviewed as part of the EBBS indicated they used feedback from beneficiaries in the planning and preparation of RING annual work plans (Table 4). The consultation and engagement at the area and zonal council level was one activity that was mentioned in all the districts as an opportunity to engage communities to get their needs and priorities for inclusion in the RING annual work plans. Decentralized units such as Community Development, the District Agriculture Development Unit and the District Health Directorate indicated that the implementation of project activities has helped them visit the communities regularly and they were better able to interact with communities and get feedback on activities which are then used to inform planning for future ones. As a key informant puts it,

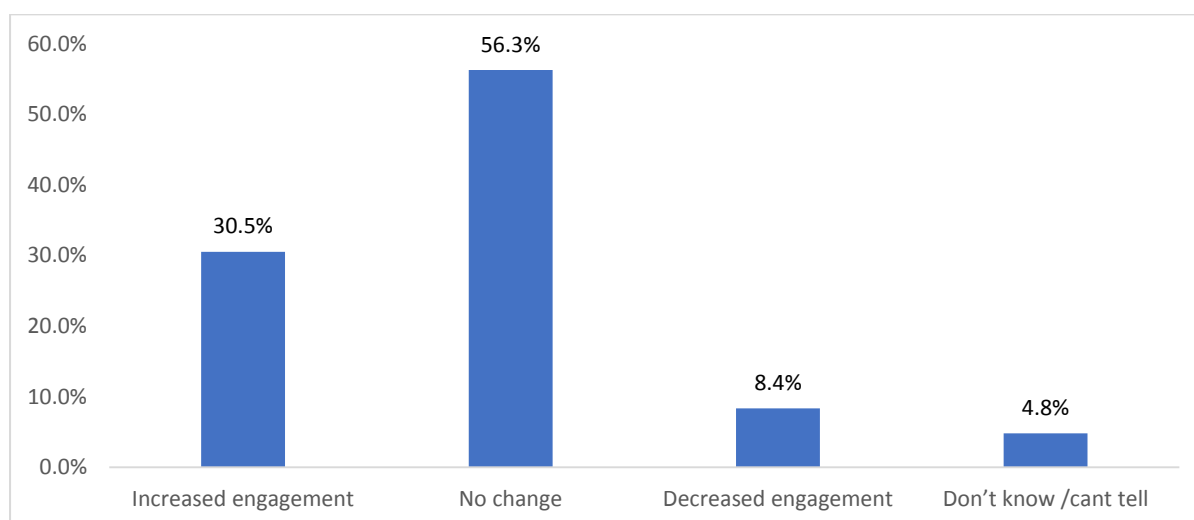
“Funds were available for outreach programs, there were also funds for office management and means of transport which enable us to increase coverage for services and visited the communities more often”
(KII-DA West Gonja).

Table 4: Performance of component 3 indicators

Performance Indicator	Baseline	LoP targets	BBS 2017	EBBS 2019	% of target achieved
Component 3 Result: Strengthened local support networks addressing the ongoing (nutrition and livelihoods) needs of vulnerable households					
I.3.1: % of households reporting improvements in nutrition and livelihood services from local government ²⁴	N/A	80.0%	11.5%	100.0%	125.0
Intermediate Result 3a: Strengthened capacity of target DAs and the NRCC to respond to community priorities for improved nutrition and livelihoods					
I.3.3.1: Percentage of core RING implementing departments that use community feedback to inform planning processes for their RING Annual Work Plans and Budgets and/or District Annual Action Plans	N/A	80.0%	N/A	100.0%	125.0

About 6 out of every 10 beneficiaries (60.3%) interviewed indicated that in the previous year a staff from District Assembly or one of the decentralized units engaged members of their community to plan on addressing their community's challenges in health, agriculture, and WASH. Among those whose communities were engaged by the District Assembly and its units, 69.3% participated in the meeting.

Figure 7: Changes in community engagement with District Assembly and its units in the last 2 years



The beneficiaries who reported that there had been some engagement between their community and their District Assembly were asked to rate the changes in the engagement in the last 1 to 2 years. The majority (56.3%) indicated that there has not been any change, 30.5% indicated the engagement has increased; 8.4% decreased in engagement and 4.8% could not tell (figure 7).

The use of community feedback is expected to help improve the services provided to beneficiaries. The EBBS found that the percentage of HHs reporting improvement in nutrition and livelihood services

²⁴ This was measured using a multiple response for all HHs to select services that had recorded improvement. Any HH that report improvement in at least one services was added to the numerator as indicated in the AMEP definition of the indicator

from local government increased from 11.5% in 2017 (midline) to 10.0% at the endline. This improvement exceeded the project target by 25% (Table 4). Despite the improvement in engagement, most of the beneficiaries were not satisfied with the services provided to improve health and nutrition; agriculture and WASH (Table 5).

Table 5: Satisfaction rating of services provided to improve health,, WASH and agriculture

Rating	Health and Nutrition Services		WASH services		Agriculture Services	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Very satisfied	10	1.2%	30	3.4%	23	2.5%
Satisfied	25	2.8%	85	9.6%	56	6.3%
Neutral	110	12.4%	132	14.9%	133	15.1%
Dissatisfied	495	56.0%	449	50.8%	505	57.2%
Very dissatisfied	243	27.6%	188	21.2%	167	18.9%
Total	884	100.0%	884	100.0%	884	100.0%

CONCLUSIONS QUESTION I

Overall, it was observed that, there was a remarkable improvement in infant and young child feeding knowledge and practices among beneficiary households. There was also a dramatic improvement in hygiene-related practices among beneficiary households. The improvement in infant and young child feeding and hygiene practices could be attributed to the capacity empowerment of service providers and the increase in channels for receiving IYCF information.

However, all these improvements in the area of practice and service provision contributed modestly to the gains in improving the nutritional status of children under five years in the beneficiary communities as there was only a slight reduction in severe stunting. They are however promising, and it is expected that in the medium term these improvements will translate into improved nutritional status. One factor contributing to the limited translation of the improved practices into improved nutritional status of CU5 the persistent food insecurity.

RECOMMENDATIONS QUESTION I

- Sustained effort is required to get the improved IYCF and WASH knowledge coupled with the increased financial security of vulnerable HHs to translate into a reduction in malnutrition rates. These efforts will need to address HH food shortage and the use of extra income at the HH level.

4.3. QUESTION 2

WHAT UNINTENDED OUTCOMES HAS THE RING PROJECT'S LIVELIHOOD APPROACH AND ACTIVITIES ACHIEVED RELATIVE TO IMPROVING FARMER INCOMES AND REDUCING VULNERABILITY AT THE HOUSEHOLD LEVEL?

Results from KII and FGDs revealed that there were a few positive unintended outcomes and no negative unintended outcome was identified. However, a few unintended results which might have limited project performance were identified. The positive unintended outcomes identified related to the promotion of cohesion among project stakeholders at different levels and increased social capital whilst the unintended results were related to delay in the release of funds and conflict in roles. These are discussed below.

The FGDs with the project beneficiaries revealed that the project had improved upon their social capital as the regular meetings of the VSLA brought about more social capital and social cohesion in their societies. Most of the members mentioned that the VSLA activity has brought unity and togetherness among the women of the community. It had also improved their confidence in speaking in public due to nutrition and health discussions sessions. The social capital and social cohesion are important in reducing vulnerabilities since the less privileged are catered for within the networks. As one of the participants in a FGD stated,

“...now we have the confidence to speak in public and now we know and care more about each other” (Beneficiary FGD-Participant, Sagnarigu).

The project implemented the VSLA component to increase access to financial services for beneficiaries through pooling of group resources and mobilizing savings. However, the cohesion among the VSLA groups and their ability to meet regularly, created an opportunity for other project interventions to be implemented through them. As a result, nutrition, health, and agriculture education were provided to communities through the VSLA groups. As FGD participants indicated,

“...the groups that we formed at the VSLA service,...we form them purposely for savings ... but those groups later on were used as the basis for other activities, because they are organized, Agric depended on them to carry out activities, health also came on board and use those groups ...most of the activities were then hinged on, the VSLA that was formed. But here, the major purpose was to just for the savings activities, but they used them to implement other activities within the components...” (FGD-DA, West Gonja)

Like the cohesion reported among the beneficiaries, the project was also reported to promote cohesion among the units of the MMDAs and the departments of the NRCC. This was mainly attributed to the joint planning which enables the different units and departments to understand the activities of each other and to learn to work together in activity implementation. Some respondents in the KII and FGD put it as,

“...my relationship with the departmental accountants and focal persons has improved as a result of the project. I now understand their roles and jobs better” (KII, A Deputy District Finance Officer)

“Work planning session was very useful in getting all the stakeholders to understand what other departments were doing and experience sharing” (FGD, A Development Planning Officer, NRCC)

"The District Gender Desk Officers are now close and working with the Department of Gender. They now share their reports with the Department, and I have a strong relationship with them. They call for resource materials" (KII, Regional Director, Department of Gender)

The unintended results which could have affected project performance are discussed below.

Delay in the release of funds from the USAID to the Assemblies and from Assemblies to decentralized units was seen to have limited project performance. Respondents indicated that some of their activities were unduly delayed due to the late release of funds to them by their MMDAs, which sometimes affected their effectiveness and efficiency. Some FGD participants put it as,

“Delay in release of funds from the USAID affected the implementation of project activities. Some activities like the agricultural ones are seasonal and when you miss the time and you proceed to implement, you are set to fail. Monitoring conduct by NRCC is on quarterly basis, if a quarter is passed it is passed; funds cannot be sent later and we will be asked to implement, are we going to conduct two visits in a quarter?” (FGD participant, NRCC)

“I think one of the things I will say is the timely release of funds from RING to the Assembly. Sometimes ... you plan maybe by this time you have finished implementing the activity, so because of the release of funds to implement intervention is always a challenge your plan will not work. When it comes to borehole repairs for now, we have prepared a plan to repair our boreholes, up till now we have not received items. The procurement person said he has prepared the documents, but is waiting for funds to be released to procure the borehole parts to enable us to repair the borehole that we are supposed to repair for this financial year but the monies are not coming....so we have to even wait, and as to when that money will be coming hhhmmm. Now, we are supposed to train pump caretakers, we submitted memos four months back, but there was no money; up till now no money. So it is a challenge that sometimes we must look at” (FGD-DA Staff, West Gonja)

The delay in the release of funds in some situations was due to the delays on the part of the MMDA to retire funds already released to them by USAID.

It was also indicated that although the project design was very good as it focused on government agencies to carry out implementation, making Global Communities responsible for results when funds were sent directly to the MMDAs was problematic and it led to some challenges. There was a strong push from Global Communities for results from the MMDAs which then led them to virtually taking over the role of the NRCC to monitor and supervise the assemblies. This created a conflict in the roles where the MMDAs sometimes did not know whether to go to Global Communities or NRCC when they need support. As noted by FGD participants,

“Global Communities was responsible for results, but the assemblies were spending the money. The Assembly must be responsible for results so that they can be held accountable. Global Communities did not want to allow activities that will not provide immediate results for this reason.” (FGD, A Development Planning Officer, NRCC)

“Global Communities had a lot of specialists and they ended up doing all the things the Regional Departments had to do to support the districts.” (FGD, A Development Planning Officer, NRCC)

“By the design of the project, funds are given to the Districts directly and Global Communities is accountable for results. Global Communities cannot control the districts, it is difficult to ensure that the right things are done. For example, the quality of some of the training in some districts were questionable. Three days of training conducted in one day. We could not stop them, so we asked them to always share training schedules [in advance].” (KII, Global Communities Project Staff)

The views on the role of Global Communities was however mixed, as discussed in the lessons learned section. Some district officers indicated that the staff from some of the Regional Departments were not very responsive when they reached out for support hence, they had to resort to technical specialists at Global Communities. One reason that could have accounted for this is that Global

Communities had more resources and staff and were able to move within short notice to support districts as compared to the NRCC departments. Access to resources from NRCC was slow.

At the district assembly level, it was found that some decentralized units had to rely on Global Communities Governance Advisors to engage District Coordinating Directors, Planning Officers and Chief Executives to facilitate the early release of funds for the implementation of project activities. The government structure does not provide opportunities for the decentralized units to get this type of support. In those districts, the role of the Advisors was seen to be central to the timely implementation of project activities and achievement of results. As indicated in a FGD,

"Sometimes we send request for funds and it takes a very long time to get approval. We must do a lot of follow-up. Once we inform the Governance Advisor, she can follow-up for us. Anytime she gets involved the money is released immediately" (FGD, DA Staff, Kumbungu).

One challenge of the livelihood approach was the perception among some stakeholders that giving the beneficiaries inputs, animals and other support free made some of them less responsible as they did not show any commitment to the interventions. As was reported by some key informants,

"The project design did not allow any sense of ownership from the beneficiaries because everything was free, free and free. No commitment from them." (KII, Regional Agriculture Directorate)

"When you visit some of the beneficiaries, they tell you that your animals are missing, we could not control the weeds on our farm...." (KII, Global Communities Project Staff)

CONCLUSIONS QUESTION 2

Unintended results such as the promotion of cohesion and understanding of each other's work among departments of the NRCC and decentralized units of the MMDAs might have helped in improving project's activity implementation. Similarly, the cohesion and improvement of social capital coupled with improved savings and access to credit through VSLA contributed to improving the achievement of project results.

The challenges might have limited the achievement of project results. The inability of some stakeholder to understand the roles of NRCC and Global Communities limited the benefits such stakeholders could have derived from complementary roles of the two organizations. Delays in the release of funds at whatever level and for whatever reason limited the effectiveness of activity implementation and hence affect project results.

RECOMMENDATIONS QUESTION 2

- Future projects should continue to create avenues for joint planning and review among units of the District Assemblies and Departments of the NRCC. It should also explore other opportunities to promote cohesion and to get units and departments to move from joint planning to joint implementation.

- Mechanisms should be put in place as part of future projects to have buffer funds for use to implement activities that are very time-dependent, whilst working at addressing delayed funds release at the different stages.
- On the side of the MMDAs, future projects should include measures on funds release to units as a key performance indicator.
- Sending funds to MMDAs directly helps to strengthen the decentralization system and should be continued. However, future projects should make MMDAs responsible for their results or give contractors some authority to hold MMDAs accountable for results.

4.4. QUESTION 3

WHAT CAN BE IDENTIFIED AS LESSONS LEARNED AND BEST PRACTICES AND FROM WHICH STAKEHOLDERS OR BENEFICIARIES? (EFFECTIVENESS)?

So many lessons worthy of sharing were observed in the field from the perspectives of the different project stakeholders.

Not allowing communities and beneficiaries to select interventions may have limited benefits: Stakeholders at the regional, district and community levels were of the view that the effectiveness of the interventions was reduced by not allowing communities to select the interventions they were interested in. For example, in the case of the small ruminants, they were of the view that beneficiaries should have had options of different animals to choose from depending on the prevailing conditions in their communities.

“The small ruminant intervention should have had options for the beneficiary to choose. That is both sheep and goats so that beneficiary depending on the conditions prevailing in their communities could choose to rear sheep or goats” (FGD, Development Planning Officer, NRCC)

"we would have liked goat because they multiply fast, but we were given sheep. They did not ask which one we like" (FGD, Beneficiary, East Mamprusi)

Beneficiaries in one community were given OFSP vines and they had no land to cultivate it because none of them was a farmer. In a beneficiary FGD, a participant stated,

“...if they can let us choose the intervention we want, it will help us. They brought us orange flesh sweet potato vines, but we are not farmers, and we don't also have land. The vines also came late, and we could not do anything with it. So, if they can let us choose the support, we want it will be good” (FGD, beneficiary, Savelugu Nanton).

By the project design, the districts could select the interventions to implement in their areas from the activity menu²⁵, however, the districts did not allow communities to select interventions as discussed above and this might have limited the benefits of the interventions.

²⁵ The Activity menu was a list of activities/interventions agreed between USAID, Global Communities, the MMDAs and the NRCC. The MMDAs were to select only activities from this menu for inclusion in their annual work plans. The menu was adjusted from time to time based on experience implementing the activities and consultations among the stakeholders. For example, activities seen not to be effective were removed based on agreement among all stakeholders.

Politicians may manipulate the beneficiary and intervention allocation process: District and community level stakeholders complained about the allocation of interventions to beneficiaries being influenced by community-level politicians and the District Chief Executives. This complaint was mostly related to the small ruminants' intervention, where beneficiaries complained of preference being given to people perceived to be members of the ruling government when it comes to giving the animals. This might have led to beneficiaries not qualified for some interventions receiving it, hence reducing the project effectiveness.

Some best practices identified are discussed below

Effective community engagement is key to project success: Community engagement contributed in enhancing the project effectiveness. Stakeholders at District Assembly and community level noted that community engagement is so valuable in driving home change in the community. This was evident in the excerpt of the qualitative transcript below

“The more you engage communities the more you are likely to succeed so we learned that to bring about positive change in the communities, community involvement and participation are key” (FGD-DA, West Gonja).

Use of multiple channels to provide behavior change communication information ensured beneficiaries increased access to information: The use of several channels such as health facilities, VSLA meetings, radio, schools, meetings with Agric Extension Agents etc to provide infant and young child feeding and WASH information ensured that beneficiaries had constant access to information, and this contributed in increasing their knowledge.

VSLA remains an effective avenue for delivering information to community members: It was so easy to deliver key information on critical health, nutrition, and WASH to community members using the VSLA platform and no extra resources were needed to mobilize the women.

Joint planning and review promote collaboration among departments and units: The joint planning and review was seen to promote cohesion and collaboration among units and departments at the District Assembly and NRCC levels respectively. This also promoted experience sharing and learning.

Competition among districts promote performance: The rollout of the District open defecation league table where districts were ranked based on their sanitation and hygiene improvements in their communities, got districts to be very serious about dealing with open defecation. It was central in getting district-level leadership to develop an interest in dealing with open defecation.

CONCLUSIONS QUESTION 3

Lessons such as the use of multiple channels to enhance information provision and VSLA as an opportunity to deliver critical health, nutrition and WASH information were identified and used during the project implementation to enhance project results. The role of competition in enhancing performance was also identified and used by the project.

The potential of politicians to influence the allocation of interventions to selected beneficiaries was not identified and addressed by the project so it might have limited project results to a very little

extent. Similarly, the effect of not allowing communities and beneficiaries to select interventions of interest on project performance was not identified during the project implementation, therefore no steps were taken to allow it to happen or to mitigate any limiting effect it might have on project results.

Future projects of this nature can consider these lessons in terms of design and implementation to enhance its effectiveness.

RECOMMENDATIONS QUESTION 3

- Future interventions should consider developing a menu of activities for communities to select from. The lessons from that will then be useful in deciding whether to allow beneficiaries to select their interventions of interest.
- The use of multiple communication channels should be continued by future interventions.
- Lessons learned from the implementation of this project should be shared with managers and staff of future projects
- The use of VSLA as a platform for the delivery of key messages should be promoted in future projects. However, care should be taken to limit how these groups are used in promoting key message so the fundamentals of establishing the groups are maintained.

4.5. QUESTION 4

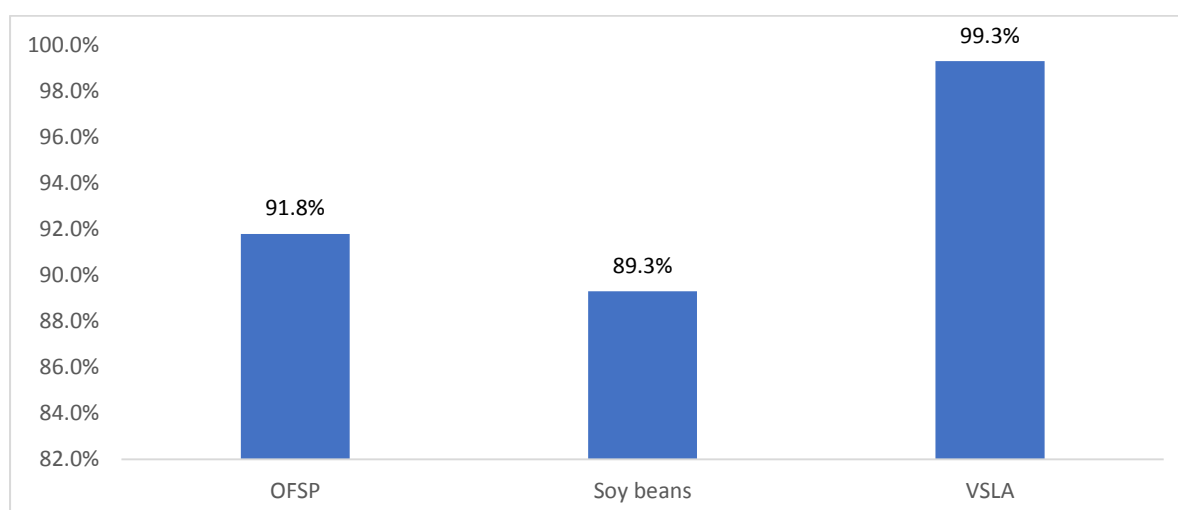
TO WHAT EXTENT ARE THE RING INTERVENTIONS LIKELY TO CONTINUE AFTER USG SUPPORT? IS STAKEHOLDER BUY-IN LIKELY TO CONTINUE OR BE INCREASED AFTER THE CURRENT PROJECT EXPIRES? (SUSTAINABILITY)

The sustainability of the project activities was examined from the perspective of beneficiaries being able to continue interventions, such as cultivating soybeans, OFSP, VSLA and small ruminants and the ability of MMDAs and its decentralized units to continue to provide support to existing beneficiaries and/or get more vulnerable HHs to benefit from interventions.

It was generally observed that beneficiaries would be able to continue the livelihood activities after the RING support has ended. The most promising ones according to the stakeholders included the VSLA as it may require less effort to keep it running. Almost all the beneficiaries (99.3%) indicated they will continue their VSLA activities after the RING project has ended (figure 8). The excerpts from the qualitative transcript below supported the above observation.

“The VSLA has the higher potential to be sustainable. The reason is that the women are willing and already attempted in the past to do some form of saving. It is evident in the community that even those who are not beneficiary of VSLA emulate the members of VSLA by having regular meetings to also do some form of savings.” (FGD-DA West Gonja)

Figure 8: Beneficiaries who indicated they would continue interventions after RING support has ended



As shown in figure 8, the findings from the HH survey shows that 91.8% of beneficiaries reported they would continue to grow OFSP after the RING support has ended (figure 8). In terms of sources of vines after the project has ended 26.2% indicated they would preserve their vines; 19.3% would obtain vines from vine seller; 17.6% from their friends; 37% from extension officers and the remaining 21.8% from other sources. Whilst the results from the beneficiaries shows a clear interest in continuing to grow OFSP, the stakeholders at the Regional level and in some districts thought there was little chance of the beneficiaries continuing the activity. They were of the view that it could not be stored for a long time and beneficiaries might not obtain the vines after the project is finished. To them, the prices of the vines from the vine multipliers could not be controlled beyond the project and this might limit the beneficiary's ability to purchase the vines. Discussion with Global Communities however indicates that the beneficiaries were engaged on how to preserve their vine. However, the HH level vine preservation had challenges because of the need for water. To address this, the project supported the establishment of vine multiplication centers in all the districts. The explanation from Global Communities reflects in the sources of vines as indicated by the beneficiaries and discussed earlier.

Whilst soybeans did not feature in the FGDs and KII interviews as one of the activities which can be sustained, a large majority of the beneficiaries (89.3%) indicated they will continue to farm soybeans after the RING support has ended.

The small ruminant intervention was also seen as one that the beneficiaries can continue beyond the project. Their main reason was that animal rearing was part and parcel of almost all communities in Northern Ghana, although new to the majority of the beneficiaries (88.8% had their first small ruminant rearing experience through RING). The unique thing about the small ruminant intervention was that it targeted women who in some settings were not allowed to rear animals and placed emphasis on housing and the use of veterinary services. Vegetable cultivation according to the stakeholders is not also new in the beneficiary communities. Therefore, beneficiaries require less effort to sustain these interventions as observed during the discussions with the stakeholders as shown below

“High potential for sustainability Leafy green vegetable cultivation, rearing of small ruminant and VSLA are that I believe have the high potential of been effective. There is no household in the communities that do not rear small ruminant and so it is something that they do. The only thing they may need to continue rearing is technical support especially when the animals are sick which the Agric

department can continue to provide even after the project Through rearing of small ruminant, the beneficiaries can get extra income which they can save in the VSLA or even invest and save the profit in the VSLA, and from the VSLA savings they can get new stock of animals and continue to rear. So, these two programs can support each other and be sustained in the communities” (KII-DA Savelugu Nanton)

The nutrition activities especially those related to the provision of nutrition information and counseling are also intervention that can continue albeit on a low scale and at health facility level since the government is unable to provide fuel for outreach. Activities such as food demonstration also has a chance of continuing if the health workers let the community members provide the foodstuff need for the activity. Findings of the FGD with MMDA staff indicated that some districts had already started the process of letting the beneficiaries provide food items for food demonstration sessions. The mother to mother support groups (MTMSGs) had a similar potential as the VSLA since the two were even integrated in several communities.

WASH activities in the area of constructing latrines and handwashing stations also have some chance of being sustained because the focus was on the use of local material and beneficiaries were given the skills to construct it on their own. The beneficiaries would therefore be able to maintain and replace latrines and handwashing stations that develop problems.

On the ability of MMDAs to continue to provide support to beneficiaries for these activities after the project has ended, it was observed that the project had laid a good foundation for that through capacity building and logistics such as motorbikes. This means human resources and logistics exist in all the decentralized units of the MMDAs to continue activities if the MMDAs can provide consumables and fuel.

The MMDAs will however not have the resources to continue to implement the small ruminants' intervention by providing other vulnerable HHs with animals, because the intervention was very expensive. Sub-components such as veterinary extension services and some of the community livestock workers do have the potential to continue since it requires minimal funding and beneficiaries may gradually be able to pay some meagre amount of money for their services.

The WASH interventions²⁶ that had the least chance of being sustained after RING support were already identified during the project implementation and stopped. These are the provision of aqua tabs for water purification and filter pots and the construction of rainwater harvesting facilities. The community lead total sanitation (CLTS) component can, however, continue because it requires limited investment and there were community members empowered to lead the process. So, they can still do most of the work with minimal support.

The MMDAs can continue to expand VSLA and OFSP activities because they require very low capital investment in the form of fuel for the MMDA staff whose capacity has been built by the project to visit communities and mobilize them for the activity to take off. In the case of OFSP some vines will be required. Capacity building for new beneficiaries can be carried out at the community level.

²⁶ Aqua tabs for water purification, filter pots and the construction of rainwater harvesting facilities.

The joint planning and development of annual report session was one RING activity the MMDAs and the NRCC staff indicated can be easily adjusted and adopted as part of the annual budgeting process of the government.

CONCLUSIONS QUESTION 4

The findings show a clear buy-in from the beneficiaries, hence their willingness to continue activities after the project has ended.

It was generally observed that some of the interventions had a natural tendency of being continued by the beneficiaries after the RING support with little or no support from the MMDAs. The VSLA is a star intervention which could be sustained with little effort from community members. It can also serve as support to enhance the sustainability of other activities and make the mobilization of beneficiaries easy. The OFSP is the other activity with great potential because beneficiaries can get the vines in their communities. The other is MTMSGs because it is integrated with VSLA. The nutrition-related activities and interventions had a high chance of being continued because they were less capital intensive and are part of the core interventions of the Regional and District Health Directorates.

The rearing of small ruminants has potential although not like the others. Its sustainability will require the provision of critical services such as para vet.

The MMDAs would not be able to have new beneficiaries in small ruminants and soybeans. However, for VSLA, OFSP and nutrition outreach they could easily do that through providing fuel for field activities.

RECOMMENDATIONS QUESTION 4

- MMDAs should focus on providing fuel support to decentralized agencies to continue to provide regular support to beneficiaries especially the VSLA and MTMSGs and explore how they could use it to sustain other interventions.
- The MMDAs and the NRCC should adopt the joint planning session and use it for the annual government planning and budgeting process. This will ensure that the units and departments continue to have an opportunity to engage and share lessons.
- Community members should be made to provide food items for the food demonstration activities.
- In future projects, the MMDAs should be tasked to take over and fund some project activities during the life of the project. This can be factored in as a performance measure and tied to continued funding under the project.

4.6. QUESTION 5

WHICH RING INTERVENTIONS ARE THE MOST EFFECTIVE AND LEAST EFFECTIVE AT IMPROVING LIVELIHOODS, NUTRITIONAL STATUS, AND HYGIENE PRACTICES? (EFFICIENCY AND EFFECTIVENESS)

It was observed from the KII and FGDs discussions that several interventions were considered effective by both project beneficiaries and stakeholders. This was supported by the data from the HH survey. The VSLA program was seen by many as the 'star intervention' as it was considered effective in improving livelihood, nutrition, and even a platform to promote hygienic practices in the beneficiary communities. This observation is supported by the excerpts of the qualitative transcript below;

“We used to belong to a credit union in this group, it was very difficult to pay for loans because of the interest but when we joined the VSLA it has improved upon our lives and HH income. I take a loan to assist in my farm. It has also improved upon our family’s nutritional status and hygiene because I sell the farm produce to buy things like fish to add to soup” (FGD Beneficiary-Karaga).

“VSLA in beneficiary communities has created a lot of businesses, as people borrow money and start petty trading and farming. Saving capacity of the beneficiaries has increased. Some beneficiaries have also acquired lands through their saving with VSLA” (KII-DA Savelegu Nanton)

The nutrition interventions focused on improving infant and young child feeding knowledge and practices among the beneficiaries was also quite effective since the target of most of the infant and young child feeding knowledge and practice indicators were met.

For the WASH interventions, the distribution of the ceramic filters and aqua tabs and the construction of water harvesting facilities for HHs were seen to be the least effective. These interventions were quite expensive and delivered little value, as a result, they were even removed from the menu of activities. The most effective WASH intervention was the CLTS.

To look at the potential of the interventions to improve nutrition and hygiene and other indicators, an analysis was carried out for HHs that benefited from only single interventions. This analysis first looked at only HHs that benefited from single interventions and then looked at the effect of getting multiple interventions. The ability to conclude on this is however limited because there was no baseline about these HHs or even any data from the 2017 BBSs to compare. The results as shown in table 6 indicated that the proportion of LGV only beneficiaries who reported increase/more diversified (86.4%) was the highest followed by OFSP only (74.3%); small ruminants only (73.2%) and VSLA (63.9%). For HH financial security, LGV only beneficiaries had the highest proportion and OFSP only the lowest. All LGV only and OFSP only beneficiaries had a handwashing facility with soap in their HHs with that of VSLA being 83.8%, soybean 80.4%, and 62.5%. Overall there seem not to have been much difference in the performance of the indicators among the different beneficiary groups.

Table 6: Performance of selected indicators among HH that benefited from single intervention

Intervention	Handwashing facility with soap/ash	Financially secured HHs	% with increased/ more diversified income as a result of RING	% reporting shorter lean season
VSLA only	83.8%	60.8%	63.9	77.9
Small ruminants only	62.5%	69.0%	73.2	76.1
LGV only	100.0%*	68.2%	86.4	63.6
Soya beans only	80.4%	68.2%	63.6	66.7
OFSP only	100.0%*	51.4%	74.3	88.6

*Very small sample size

The results of the key indicators by the number of interventions a HH received are shown in table 7. The results did not show any clear trend that increasing the number of interventions a HH benefited from would shorten the period it experiences lean season or increased the practice of exclusive breastfeeding. Similarly, HH financial security did not show any trend with an increasing number of interventions.

However, for HHs reporting they now have increased/diversified income sources as a result of RING intervention and the availability of handwashing facility with soap, there was a clear trend. As the number of interventions per HH increased the proportion that had increased/more diversified income sources increase. Similarly, as the number of interventions increases the proportion with handwashing facility with soap/ash increases but does not increase further when more interventions are added after the third one.

Table 7: Number of interventions HH benefitted from and performance in key indicators

# of interventions HH received from	Exclusive breastfeeding rate	Financially secured HHs	% with increased/ more diversified income as a result of RING	% reporting shorter lean season	HHs with handwashing facility with soap/ash
1	61.7%	62.0%	67.1	77.3	80.4%
2	77.5%	65.6%	74.6	78.3	81.4%
3	74.7%	78.8%	74.6	72.9	90.2%
4	72.2%	77.2%	84.9	75.0	90.2%
5	86.8%	77.2%	90.7	75.0	90.2%

CONCLUSIONS QUESTION 5

The project was quite successful in identifying and stopping ineffective and inefficient interventions which helped in improving the effectiveness and efficiency of the project.

It was not possible to tell which single interventions were effective than the other. However, the results suggested that supporting HHs with more than one intervention (layering of interventions) could be effective and help them to improve their resilience faster.

RECOMMENDATIONS QUESTION 5

- USAID should continue to allow some flexibility for future projects to be able to discontinue activities that are found to be ineffective and inefficient during project implementation
- Nutrition information and counselling interventions are effective in increasing knowledge on infant and young child feeding, however, a lot more is needed to move the increased knowledge to practices that will reflect on the nutritional status of children.
- The layering of interventions should be promoted as part of all projects targeting the poor and vulnerable

4.7. DECISION MAKING ON SALE AND USE OF INCOME FROM LIVELIHOOD INTERVENTIONS

The EBBS also looked at decision making with respect to key RING interventions as it related to the sale and use of money from the sale of items from livelihood interventions (Table 8).

In response to who makes decisions when it comes to taking VSLA loans, 78.9% of the beneficiaries as compared to 73% in 2017 BBS said they do the decision making all by themselves. This was followed by those who take the decision together with their husbands (15.0% compared to 22% in 2017) and those who take decisions with others such as children (1.9% compared to 0.1% in 2017). Whilst there was no baseline to compare with, the results of the 2017 BBS and the endline findings show an improvement in the autonomy of women when it comes to decision making to access a loan from the VSLA.

Results from the decision making concerning the sale of small ruminants, however, had an interesting trend. The percentage of beneficiaries who decided to sell by themselves decreased slightly from 44% in 2017 BBS to 41.2% in 2019. Interestingly the beneficiaries whose husbands decided on the sell reduced from 18% to 15.9% a positive trend over the same period. The findings seem to suggest that more women were involving their husbands in decision making on the sale of small ruminants (37.5% in 2017; 39.7% in 2019) hence the reduction in those who decided on their own. Half a percentage of the beneficiaries made the decision to sell with other family members in 2017 as compared to 3.3% in 2019. The husbands might have had a bigger role in the decision to sell small ruminants as compared to taking a VSLA loan because they are more likely to support the women in the rearing of small ruminants.

It was further observed that the project had contributed to addressing myths in relation to women rearing small ruminants in several of the project communities. Women were hitherto not allowed to rear animals (small ruminants) but the small ruminant component of the project changed this perception and a lot more women in the communities are now venturing into animal rearing. In the focus group discussions, participants indicated that,

“RING has helped to change the perception that women can't own livestock. Which is a good thing for women empowerment; the intervention has broken the culture of women not being allowed to own animals” (FGD-DA Staff, Kumbungu);

“The women are now highly sensitized. The traditional roles of women have been modified as they could not rear animals but with the implementation of the intervention particularly the small ruminant women now realize they can also rear animals. Through the sensitization given, women could tell the signs of a sick animal” (FGD-DA Staff, Savelugu Nanton)

Table 8: Decision making on the sale and use of proceeds from soybeans and leafy green vegetables

Decision maker	Who makes decisions when it comes to taking a VSLA loan?		Who makes decisions when it comes to the sales of your small ruminants?	
	% of respondents (2017BBS)	% of respondents (2019EBBS)	% of respondents (2017BBS)	% of respondents (2019EBBS)
Self	73%	78.90%	44%	41.20%
Husband	5%	4.20%	18%	15.90%
Husband and I	22%	15.00%	37.50%	39.70%
Others	0.10%	1.90%	0.50%	3.30%
	Who makes decisions when it comes to the sales of your soybeans?		Who decided on how to spend the income earned from soybeans?	
Self	45%	55.40%	41%	50.90%
Husband	6.50%	6.70%	7.70%	7.50%
Husband and I	47.60%	36.10%	51%	40.30%
Others	0.90%	1.70%	0.30%	1.30%
	Who makes decisions when it comes to the sales of your LGV?		Who decided on how to spend the income earned from OFSP?	
Self	75.40%	72.90%	58%	75.60%
Husband	3.40%	3.10%	1.80%	4.50%
Husband and I	16.00%	17.80%	38.40%	7.70%
Others	5.10%	6.30%	1.80%	12.20%

Table 8 shows the results for decision making on the sale and use of proceeds from soybeans and LVGs for 2017 BBS and the EBBS. Like the small ruminants' intervention, women autonomy in terms of deciding to sell soybeans (45% to 55.4%) and on the use of the income from the sales (41% to 50.9%) increased between the 2017 BBS and the 2019 EBBS. This increase was due largely to a reduction in the proportion of women who makes decisions with their husbands. In the case of LGV, women's autonomy in deciding to sell recorded a marginal reduction from 75.4% to 72.9%.

For OFSP beneficiaries, the focus was on the decision making concerning how the income from the sale was spent (Table 8). The results once again showed an increasing autonomy of women. In 2019, 75.6% of the beneficiaries made the decisions on the use of the income from the sale of OFSP by themselves as compared to 58% in 2017. The percentage who decided with their husband increased from 1.8% in 2017 to 4.5% whilst joint decision making with husband dropped from 38.4% to 7.7% and husband only decision making increased from 1.8% to 4.5%.

CONCLUSIONS ON DECISION MAKING

The findings show that the project contributed to improve the women's autonomy in decision making on the sale and use of income from livelihood interventions for all interventions. This is quite some good outcome and justifies the decision to target women with these interventions.

RECOMMENDATION ON DECISION MAKING

Future projects should continue to target vulnerable women with interventions in order to improve their autonomy not only in the control of the benefits coming directly from the intervention but also to get increase their participation in HH decision making especially as it relates to the control and use of HH resources.

4.8. INTERVENTION SPECIFIC RESULTS

This sub-section describes the EBBS report for the results for the livelihood interventions. The tables are shown in Annex IX.

Village Savings and Loans Association (VSLA)

Beneficiaries most commonly got money from petty trading, i.e. income from their small businesses (47.1%), to invest in the VSLA. Some others also got money from crop production (34.5%) as well as processing (23.8%) to invest in the VSLA. The majority of beneficiaries indicated that their income was better (53.3%) than that of the previous year. Beneficiaries most commonly used the moneys they derived from the VSLA investment to buy food for their family (43.1%), pay school fees for their children (20.9%), pay health-related costs (20.2%), among other domestic expenditures. On challenges encountered as VSLA beneficiaries, while almost half of them said they had not encountered any challenges, some 44.7% indicated a lack of income to save (44.7%) to be their challenge. Others mentioned group dynamics (9.2%) and lack of time to attend meetings (7.2%), among others.

Majority of the beneficiaries (55.8%) took loans ranging from GHS 70 to GHS200 to pay health-related costs (29.3%), pay school fees for their children (22.7%) and buy food for their respective families (20.5%), among others, while some others also used the loans, they took to start income-generating activities (19.0%). Indeed, beneficiaries unanimously responded in the affirmative (99.3%) when asked whether they would continue to be VSLA members after this cycle of savings.

Small Ruminants'

In all, 1,900 small ruminants were given out to the 631 beneficiaries interviewed. Over the period, 1,959 live births were recorded with 1,351 deaths, and 321 sick animals. Furthermore, a total of 447 small ruminants were sold by the beneficiaries, yielding a total amount of GHs 52,957.35 (at an average price of GHs 120.71). A total of 97 ruminants were either stolen or got missing and could not be retrieved, while 23 in total were slaughtered for sacrifice and currently, 1 905 ruminants were available.

An indication of how much benefit has been derived from the RING intervention, by the beneficiaries, is seen in the fact that about 81% of beneficiaries reared ruminants for the first time through this intervention while an average of two ruminants was sold by the beneficiaries, yielding an average of GHs 249.52. The most common reason cited for selling the animals was sickness (23.1%) followed by

paying of school fees (22.0%), buy food for family (20.8%), pay health-related cost (12.1%), buying farm inputs (7.5%), in that order, among many other reasons.

The commonest housing for the ruminants was pen constructed with mud (66.9%) followed by pen constructed with straw (13.3%) and some 12.7% of them were kept in abandoned rooms. Almost 47% of respondent households used animal droppings as manure for further agricultural activities.

Soybean

About 24.1% of the total beneficiaries were into soybean farming. Of that proportion, 40.9% were already into soybean farming before the inception of RING. However, 77.7% of the soybean farming beneficiaries got their land for the soybean farming from their respective husbands while some 9% had theirs from other household members. The total land area under soybean cultivation by the respondents was 315.7 acres with an average of an acre per beneficiary, while the quantity of soybean harvested in total was 71,009.5 kg (average of 224.9kg per acre) with an average of 221.9 kg per beneficiary. A little over 65% of soybean beneficiaries sold part of their produce while all of them set some aside for home consumption. Beneficiaries had soybeans in their homes for use for a period ranging from one month (6.0%) to 7 months and above (30.9%).

Orange Fleshed Sweet Potatoes (OFSP)

A total of 1,365 (making 64.5%) respondents benefitted from the OFSP intervention. Every district benefitted from the OFSP intervention, though the number of beneficiaries varied per district, ranging from 16 beneficiaries (West Gonja) to 124 beneficiaries among the respondents (Karaga District). A total of 8,602,010 vines were planted (ranging from 44,406 in Karaga to 2,143,526 in Saboba District) yielding a total of 1,991,285.40kg of OFSP, an average of 2,278.1kg per district. The quantity of OFSP sold by the beneficiary was 14,203.2kg amounting to GHs 5,564.43. Almost all (91.8%) the beneficiaries interviewed responded in the affirmative when asked whether they would continue to grow OFSP. When asked where they would get the vines to plant the next time, they wanted to grow the OFSP, some of the responses given were that they would source vines from agriculture extension officer (37.0%), preserve vines from own farm for next season (26.2%), buy from a vine seller in the community (19.3%).

Leafy Green Vegetable (LGV)

A total of 320 (15.1%) respondents benefitted from the growing of Leafy Green Vegetables (LGVs) and the types of LGVs grown were Biraa (91.5%), Ayoyo (88.6%) and Aleefu (49.1%) among others. Most respondents (32.8%) reported they had access to LGVs for between six to twelve months in a year while less than ten percent (8.9%) reported to have access to LGVs for only a month. A little over ten percent (10.3%) of the respondents reported they had access to LGVs for up to five months in a year.

Almost half of the LGV beneficiaries (47.7%) have ever had their drip irrigation equipment broken down before, over the period while most of those who had that experience (63.5%) were able to fix their irrigation equipment. The commonest places they obtained water for the irrigation of the LGV farms were streams (46.8%), rivers (21.8%), dams (12.2%) and boreholes (7.9%) in that order, among other sources. About 37% of the LGV respondents indicated that water does run out during the dry season.

On volume of LGVs harvested, 278 out of the 320 households that were interviewed who happened to be male-headed, with both male and female adults, harvested a total of 21,318.84 kg of LGVs, a mean of 76.8kg per household in the just-ended season. The majority of what was harvested (18,098.18 kg) was used for home consumption at an average of 65.22 kg per male headed household. They sold a total of 13,432.15 kg of LGV among others. The beneficiaries commonly sold the LGVs to start an income-generating activity (48.9%), followed by paying school fees for their children (27.4%) and pay health-related costs (16.0%) in that order, among other uses.

The commonest place they sold their LGVs is neighboring community markets (42.2%), in their village markets (40.3%) and at home (33.6%) in that order, among other places.

4.9. OVERALL CONCLUSIONS

Empirical evidence from the survey supports the development hypothesis that strengthening local networks (i.e. district and regional structures) to develop, implement and monitor nutrition, WASH, and livelihoods activities would improve beneficiary nutrition and hygiene behaviors, which, in turn, would improve the nutrition and health status of women of reproductive age and children under five in targeted vulnerable households. Project interventions (small ruminants, OFSP, LGV, VLSA, WASH, Soybean) improved access to, and consumption of diverse quality food among target households, especially among women and children under 5 years. However, the results are yet to translate into significant improvement in the nutrition status of CU5 as stunting, underweight and wasting rates remains unacceptably high.

The project has improved behaviors of beneficiary households related to nutrition & hygiene for women & children through the interventions implemented. The use of multiple channels and provided a platform (e.g. VSLAs and VSLAs converted into Mother to Mother Support Groups) for beneficiaries to be educated on proper nutrition and hygiene for women and children as well as enhanced the financial capacity to make the necessary changes through the income-generating activities.

The project has also strengthened local support networks (MMDA structures) addressing nutrition and livelihoods needs of vulnerable households. Direct support to district assemblies have enhanced their capacities to deliver on their mandates in the areas of nutrition, WASH and livelihoods. This was seen both in the technical capacity of decentralized units of the assembly to deliver and in enhanced logistical support.

Whilst the outcomes of the RING interventions were positive, there is a challenge to the ability of MMDAs to sustain the interventions after the exit of RING due to the funding gap in the operations. They do have the potential to manage and continue to provide support to interventions such as the VSLA, OFSP, and CLTS because those require very little cost.

The potential for sustainability is however higher at the beneficiary level for VSLA, OFSP, and small ruminant interventions because of the commitment of the beneficiaries and support available at the community level.

ANNEXES

ANNEX I: EBBS STATEMENT OF WORK

I. PURPOSE OF THE END LINE BENEFICIARY-BASED SURVEY

The purpose of the end line beneficiary-based survey (EBBS) is to satisfy the monitoring and reporting needs of the RING Project by providing data to gauge the performance **of 18 survey-related indicators in the RING Project's Activity Monitoring and Evaluation Plan (AMEP)**. Specifically, the EBBS will provide data for:

- (1) reporting on performance of the 18 survey-based indicators;
- (2) estimate changes in outcomes and outputs since baseline; and
- (3) determine the effectiveness of activity management strategies for key interventions within the agriculture, livelihoods, nutrition, good governance, and water access, sanitation and hygiene (WASH) components of the RING Project.

The findings of the EBBS will inform the project partners (USAID/Ghana, Global Communities RING and the target District Assemblies and the Regional Coordinating Council – RCC) about which of the project interventions have worked well and why, which perhaps have not and why. The information provided will be used to inform post-project scale up of most promising RING activities and to inform future design of similar projects by USAID and its partners.

I. Audience and Intended Uses

The results of the EBBS will be useful for a variety of actors in the USAID/Ghana Mission and its partners because of the interest in the RING Project implementation approach of G2G programming. The results will directly be used by the following key actors:

- USAID/Ghana Mission Program Office to inform broad strategy during the development of the new Country Development Cooperation Strategy (CDCS);
- The Health, Nutrition and Population Office (HPNO) and the Economic Growth Office (EGO) to inform the development of the Project Appraisal Document (PAD) for the health and nutrition aspect of the Feed the Future Phase II programming in Ghana;
- Global Communities RING to inform performance measurement of the 18 survey-related indicators, as well as meet the end of project reporting requirements of the RING project;
- The RING Project Metropolitan, Municipal and District Assemblies (MMDA) and Northern Regional Coordinating Council (NRCC) partners to inform changes in outcomes of the RING interventions and to guide future livelihood enhancing interventions.

II. SUMMARY INFORMATION

The Resiliency in Northern Ghana (RING) project is a US\$60 million USAID/Ghana-funded five-year integrated project that contributes to the Government of Ghana's (GOG) and the U.S. Government Feed the Future Initiative's efforts to sustainably reduce poverty and malnutrition. The project aims to improve the livelihoods and nutritional status of vulnerable households in partnering districts in the most food-insecure parts of the Northern Region. The RING Project's interventions are implemented through 17 MMDAs and the NRCC, along with technical assistance from Global Communities Inc., a U.S. based non-governmental organization (NGO).

Table I Project Identification Data

Strategy/Project/Activity Name	Resiliency in Northern Ghana (RING) Project
Technical Assistance Contractor	Global Communities (GC)
Contract #	AID-641-C-14-00002
Total Estimated Ceiling of the Evaluated Project/Activity(TEC)	\$60 million
Life of Strategy, Project, or Activity	June 14, 2014 – September 30, 2019
Active Geographic Regions	17 Metropolitan, Municipal and Districts Assemblies within Northern Region
Development Objective(s) (DOs)	Development Objective: USAID/Ghana's Development Objective 2 (DO.2): Broadly Shared Economic Growth, Intermediate Result (IR) 2.3: Improved Resiliency of Vulnerable Households and Reduced Under-Nutrition (Ref. FTF IR 2)

iii. **BACKGROUND**

• **Description of the Problem, Context and History**

Despite the fact that Ghana's economy grew roughly 7% on average between 2005 and 2015²⁷, inequality has been increasing in the country and poverty remains prevalent in many areas. The Resiliency in Northern Ghana (RING) Project was developed to improve livelihoods and nutritional status of populations in Northern Region, Ghana, which experiences the highest and most persistent rates of poverty and food insecurity in the country.

Today, the Northern Region comprises the largest number of poor people of any of Ghana's ten regions (i.e. 1.3 million people).²⁸ Of particular concern is persistent food insecurity and malnutrition, of which 453,000 people are considered food insecure. The Northern Region also has the highest rates of stunting in the country: roughly 33% of children under 5-years-old are stunted or chronically malnourished and 17% are severely stunted.²⁹

Poor availability, affordability and utilization of food have been identified as the primary reasons for malnutrition in the Northern Region. The vast majority of farm holdings in Ghana are subsistence farms and in the Northern Region the smaller the farm holding, the less diverse is the variety of crops cultivated -- usually staple crops. In addition, natural hazards in the Northern Region, such as floods and droughts, disproportionately impact on poor households. Floods have destroyed large areas of cultivated land at crucial times during past cropping seasons, leaving the farming population with reduced harvests to sustain them throughout the year and a damaged asset base that takes a long time to replenish, if at all.

With roughly half of the farming households in Northern Region falling below the poverty line, the food price increases of 2008 disproportionately affected these households since only about 30% of households obtain all their food from their own production. In this context, limited household purchasing power is a clear barrier to food access and improved food security.

The goal of the RING Project is improved livelihood and nutritional statuses of vulnerable households in targeted communities in the Northern Region of Ghana. The project is funded by USAID/Ghana's Feed the Future (FTF) and Global Health portfolios. The RING Project is the USAID/Ghana's principle mechanism for achieving its FTF

²⁷ World Development Indicators, The World Bank. Accessed 04/19/2017 at <http://databank.worldbank.org/data/reports.aspx?source=2&country=GHA>

²⁸ Cooke, E., Hague, S. and McKay, A. (2016). *The Ghana Poverty and Inequality Report: Using the 6th Ghana Living Standards Survey 2016*. Accra, Ghana.

²⁹ Ghana Statistical Service (GSS), Ghana Health Service (GHS), and ICF International. (2015). *Ghana Demographic and Health Survey 2014*. Rockville, Maryland, USA.

Intermediate Result 2: *Improved Resilience of Vulnerable Communities*. The RING Project also contributes to achieving USAID/Ghana's CDCS Development Objective 3: *Equitable Improvements in Health Status*.

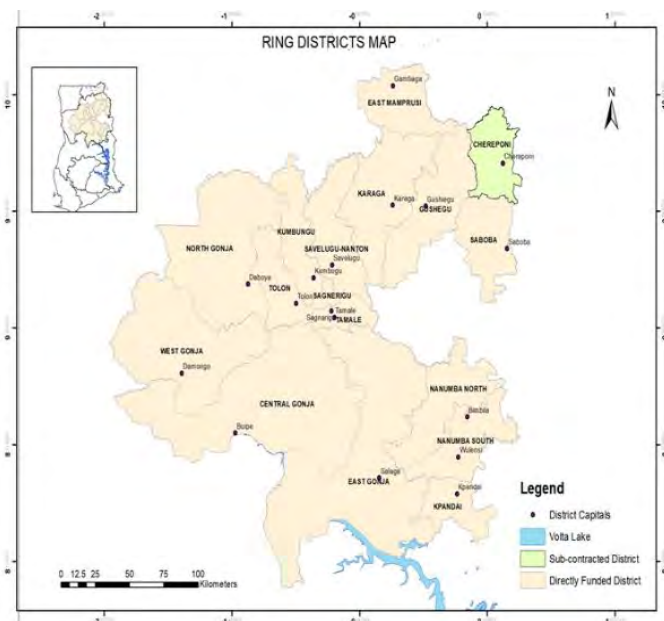
2. Project Description

As defined by USAID, “Resilience is the ability of people, households, communities, countries and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth.” Numerous approaches are commonly used to increase resilience in low-income countries. The goal of RING is to improve livelihood and nutritional status of the most vulnerable households in targeted communities, with an emphasis on women of reproductive age and children under-five (CU5).

For the purposes of the project, the most vulnerable communities were selected by analyzing existing district-level data on at least four of the following areas: access to potable water, latrine coverage per household, distances to markets, distances to the nearest health facility, prevalence of infectious diseases in children under five (malaria, acute respiratory infection, and diarrhea). Once those criteria had been assessed for each community, those communities scoring the highest were prioritized for RING inclusion. From there, each community was allocated according to population a number of households that could benefit directly from RING interventions, with the goal of identifying approximately 2,500 households in each of the 17 MMDAs. To undertake selection of households, each district utilized their own staff, community members, or a combination of the two to carry out the field work. To be selected, each household needed to have at least one woman of reproductive age (15-49) and one child under five, and the household had to be classified as ‘vulnerable’ based on the demographics of that particular community. Those undertaking selection of households were trained on how to identify a more vulnerable households using subjective criteria, such as the status of the physical structure of the home (presence of zinc roofing, cement floors, rooms that have fallen down), assets within the family (radio, bicycle, motorcycle, livestock), farming capacity (number of acres under cultivation), and other information such as the presence of additional financial strains (caring for an elderly or chronically ill family member) and the ability of a family to provide 3 square meals a day. Within the particular community, households were assessed against one another and the final proposed list was ultimately validated by community leadership before the households were officially selected for RING direct support³⁰.

Project Objectives

The Project Results Framework (see. Annex D) is intended to demonstrate the development hypothesis that strengthening local networks (i.e. district and regional structures) to develop, implement and monitor nutrition, WASH, and livelihoods activities will improve beneficiary nutrition and hygiene behaviors, which, in turn, will improve the nutrition and health status of women of reproductive age and children under five in targeted vulnerable households. The Results Framework contains three Component Results that contribute to the program goal to improve livelihood and nutritional status of vulnerable households in targeted communities in the Northern Region of Ghana. The larger objectives of the program are:



Map of implementation districts in the Northern Region

³⁰ In the case of RING, there are multiple interventions that benefit everyone at the ‘community level’, such as borehole repairs, Community Led Total Sanitation, Community Action Planning, and health outreach services, among others.

Component 1: Increased access and consumption of diverse quality food among target households, especially among women & CU5;

Component 2: Improved behaviors related to nutrition & hygiene for women & children; and

Component 3: Strengthened local support networks addressing the ongoing (nutrition & livelihoods) needs of vulnerable households.

Through the project interventions, RING expects to contribute to the following results between June 2014 and September 2019:

- 100% increase in income of 80% of target households;
- 20% decrease in prevalence of stunting among children under five;
- 20% decrease in prevalence of anemia among children under five;
- 20% decrease in prevalence of underweight among children under five; and
- 20% decrease in prevalence of wasting among children under five.

RING Operational Approach

To achieve the goal and component results, and in line with USAID Local Solutions Framework principles of direct support to host governments, RING works with and through the NRCC and 17 MMDAs in Northern Region to select and implement livelihood and nutrition interventions from an evidence-based menu of activities; implementation is funded either through direct awards (i.e. Project Implementation letters or PILs) from USAID or through subcontract from Global Communities. These efforts are carried out via support from several regional partners, including the Regional Planning and Coordination Unit (RPCU) and other allied regional directorates/departments such as the Regional Environmental Health and Sanitation Unit, Regional Agriculture Department, Department of Gender, Department of Community Development, Department of Social Welfare, and the Regional Health Directorate.

The RING Project Menu of Activities has been updated numerous times throughout the life of the project based on interventions that are relevant to the partnering MMDAs and GOG priority areas. As of 2017, the menu included the following interventions:

Component 1 (Livelihoods): Facilitation of village savings and loans associations (VSLA), cultivation of orange-fleshed sweet potatoes (OFSP), soybean, and groundnut, and cultivation of leafy green vegetable through drip irrigation systems, shea nut collection and market linkages, soil improvement activities, fowl rearing, post-harvest loss reduction through multiple techniques, and management of small ruminants.

Component 2 (Nutrition and WASH):

- Nutrition: Mother-to-mother support groups; community-based nutrition education (durbars, video screenings, cooking demonstrations); training of health workers and community health volunteers; activities to promote community-based management of acute malnutrition; anemia prevention and treatment; essential nutrition actions for non-health staff; quality improvement for health facilities; data utilization and outreach planning support; and
- Water and Sanitation: Community-led total sanitation (CLTS); institutional latrine rehabilitation; repair and maintenance of community borehole and livestock watering areas; development of hand washing facilities in public institutions; rainwater harvesting; building the capacities of water sanitation and management committees (WSMTs); and water quality assessments and treatment.

Component 3 (Governance): Facilitation of community scorecard activities; case management of social protection beneficiaries; advancing decentralization at the lower levels; and strengthening of public financial management practices; Gender model family, gender and social protection networks at community and district level, Enhancement of GoG partners M&E capabilities

These interventions, when combined, seek to ensure that the most vulnerable households have consistent sources of diverse, high quality food throughout the year and access to related interventions that will improve

their livelihoods and nutritional status. Staff members from the 17 MMDAs carry out the activities, while Global Communities provides technical assistance, training, monitoring and support to this cadre. In addition, Global Communities hires consultants to provide intensive support in key areas such as village savings and loans and CLTS.

At the conception of the project, USAID/Ghana envisioned directing project funding through government-to-government agreements to advance Government of Ghana decentralization and USAID Forward principles; as well as strengthen the potential to sustain activities at the end of the project. Although decentralization from national to sub-national structures (i.e. regional, district, sub-district) has been a priority in Ghana for decades, like many countries, decentralization faces many challenges, including weak public financial management at all levels and resource mobilization at the lower levels.

After facing several challenges in directing funding from national down to the MMDAs level, USAID/Ghana initially awarded project implementation letters directly to ten districts and the Northern Regional Coordinating Council, each of which had already met the necessary financial and management capacity criteria. The districts met these criteria after undergoing an assessment, which included an analysis of the GoG Functional Organizational Assessment scores, along with an assessment based on USAID's Public Financial Management (PFM) Risk Assessment Framework. The remaining seven districts were funded through subcontracts through Global Communities, which simultaneously worked to build the districts' financial management capacity with the intention that they would graduate to direct agreements with USAID. As of today, the number of districts receiving funding from USAID/Ghana through direct agreements increased to 16 of the 17 target districts, with the remaining one district operating under subcontracts to Global Communities. This transition is as a result of those districts making the necessary progress in addressing identified PFM risks, as well as the improving quality of their implementation and management of interventions from a technical standpoint.

The RING operational approach entails working with and through the MMDAs and seven departments within the NRCC³¹, providing capacity building to these partners to strengthen existing GOG systems and subsequent ability to deliver quality services to vulnerable households on a sustainable basis. The GOG partners are responsible for work planning and budgeting, along with service delivery, monitoring, evaluation, and reporting, with technical support on each aspect provided by Global Communities RING. Through RING funding, examples of the GOG services include, but are not limited to: provision of agricultural inputs; training households in good agronomic practices; distribution of small ruminants; formation and support for VSLA; building health worker capacity in nutrition service delivery; social and behavior change communication for improved nutrition, and sanitation and hygiene; potable water access expansion; promotion of subsidy-free sanitation infrastructure; improved PFM; and district sub-structure strengthening, among other things. These interventions, when combined, seek to ensure that the most vulnerable households have consistent sources of diverse, high quality food throughout the year, and access to related interventions that will improve their livelihoods and nutritional status.

3. Strategic Document Sharing

To enhance the work of survey team, the following strategy, project, or activity documents will be made available to the team. Other documents not part of the list can also share with the survey team upon a formal request to the Chief of Party of GC RING and Chief of Operation of METSS II and their approval.

- Activity Monitoring and Evaluation Plan (AMEP)
- Performance monitoring indicators
- BBS 2017 data collections tools and report
- RING (FY18 annual and FY19Q1 Reports)
- Master list of RING Communities
Master lists of household and beneficiaries
- Draft evaluation questionnaires

³¹ RPCU, Regional Health Directorate, Regional Agriculture Department, Regional Environmental Health and Sanitation Unit, Regional Department for Community Development, Regional Department of Gender, and Regional Department of Social Welfare.

- Interventions briefers; and
- Other on requested.

iv. **ILLUSTRATIVE SURVEY QUESTIONS**

The purpose of this end line beneficiary-based survey (EBBS) is to assess the performance of the GC RING Project. Specifically, the EBBS will estimate the changes in outcomes and outputs of the GC RING 18 survey-based indicators since baseline. In order to guide the process, the following questions will be answered:

8. To what extent has the RING Project achieved its intended goal and objectives as defined by the results framework?
 - a. Has the RING Project's G2G interventions at the district level resulted in sustainable reduction in hunger and malnutrition for households, especially among children under five? (malnutrition is measured by the nutritional indices of children under-five and hunger is measured by length of months without available food);
 - b. Have the combined efforts in WASH, Nutrition and Livelihood activities resulted in improved nutrition and hygiene behaviors for households in the target districts? (Indicators of interest here are MAD, WDD);
 - c. How has GC RING activities strengthened local support networks to address the nutrition and livelihood needs of vulnerable communities? (For target MMDAs, and communities).
9. What unintended outcomes has the RING Project's Livelihood approach and activities achieved relative to improving farmer incomes and reducing vulnerability at the household level?
10. What can be identified as lessons learned and best practices and from which stakeholders or beneficiaries? (Effectiveness)? To what extent are the RING interventions likely to continue after USG support? Is stakeholder buy-in likely to continue or be increased after the current project expires? (Sustainability)
11. Which RING interventions are the most effective and least effective at improving livelihoods, nutritional status and hygiene practices? (Efficiency and effectiveness)

Apart from providing answers for the above listed questions, the successful survey team will conduct a quantitative survey to provide annual results for the indicators listed in Annex B, as well as provide answers for survey questions in Annex C, which are based on the indicators in Annex B. The successful survey team will be responsible for finalizing the draft data collection tools, sample size and method of collecting data which should be based on the methodology adopted in a previous beneficiary-based survey conducted in 2017. The Survey team will be responsible for implementing the entire survey processes, including collecting quality and quantitative data for responding to the bouquet of questions listed above and in Annex C.

v. **SURVEY DESIGN AND METHODOLOGY**

The focus of this EBBS is first, on results of the 18 survey-based indicators of the RING Project and secondly, on the immediate outcomes of the RING Project menu of interventions at the household level within the target districts. It is anticipated that a cross-sectional, before-and-after approach will be adopted for this survey. To enable decision making at the district level, it is expected that statistically representative data should be collected in all the 17 target districts in the RING Zone of Influence. Within each district, adequate sample need to be estimated to ensure that representative data is obtained for each project intervention. The offeror is therefore expected to take the following consideration in its proposal for a sampling methodology and the estimation of a sample size for the survey:

- There are four key intervention areas under which activities are implemented by the RING project. Further disaggregated district data analysis will be conducted for project management purposes and is also expected to be statistically significant at the intervention levels within each district.

- About 94,933³² unique households within the 17 MMDAs have benefited from at least one of the RING supported activities and constitute the universe of households to be surveyed. The effective sample size should be based on this universe.
- The list of districts and all communities within that RING ZOI benefiting from key interventions over the life of the project will be provided to the successful survey firm.
- To ensure that the baseline and end line results are comparable, the same methodology used at baseline is expected to be used at the end line. The firm is expected to advise and provide inputs on the most appropriate sample and estimation for conducting quantitative data collection to adhere to the following general sampling methodology requirements:
 - o Stratified random sample of MMDA to yield a 95% confidence level at the MMDA, considering population size and heterogeneity;
 - o Sample stratified by sex, age, ethnicity; quota sampling for target groups (e.g. women of reproductive age and Children under five);
- The constraining indicators to be used for estimating the sample size for the entire survey, and for the district level sample size estimation are: Prevalence of stunted children under five years of age (HL.9-a); Prevalence of children 6-23 months receiving a minimum acceptable diet (HL.9.1-a); and Prevalence of exclusive breastfeeding of children under six months of age (HL.9.1-b).
- The full list of 18 indicators for this survey is attached to this SOW as Annex B. Data required for the indicators and the definitions of all the performance indicators are specified in the performance indicator reference sheets (PIRS), which shall be provided upon request.

It is generally anticipated that the firm will employ appropriate scientific data collection and analysis methods to arrive at the survey findings that fully respond to the survey questions and make recommendation thereof.

The performance evaluation will cover the RING Project operations since inception, with the key respondents being the project staff, staff of the donor (USAID/Ghana), the project target beneficiaries and staff of RCC, Community members and MMDA staff involved with the implementation of the project. Data collection for the key outcome/output indicators will focus on all project beneficiaries who have received interventions since the inception of the project.

The firm is required to share all data collection tools with the RING Project and METSS II Project for review and feedback and or discussion, with sufficient time, before they are applied in the field. They should utilize, to the extent possible various data collection methods including but not limited to the following:

- vi. **Review of Existing Data Documentation:** Project documents that should be reviewed may include but not limited to the Project baseline report, the 2017 Beneficiary-Based Survey Report, and relevant annual progress reports, the RING AMEP, and any other assessment reports related to the RING project.
- vii. **Key Informant Interviews:** The team is expected to hold interviews with key partners of the project particularly the staff of the MMDAs, and the Regional Directorates involved with implementing the RING Project. Focus groups? Could just do high level interviews
- viii. **Quantitative data collection tools:** as a follow up to the BBS 2017, the firm will be expected to update the BBS 2017 household questionnaire based on the purpose of the survey and with inputs from METSS II and GC RING technical team.

IX. DELIVERABLES AND REPORTING REQUIREMENTS

Survey Work Plan: The firm (otherwise also called Survey Team) will prepare a detailed work plan and activity schedule to be submitted to the Chief of Operations (COO) of the METSS II and Chief of Party of GC RING for approval no later than five (10) working days after the award. The work plan should describe all activities, including timeframes and sequencing, research design and methodology, sample size estimation and the selection of sampled respondents, draft data collection tools and an analysis plan, and a timeline for

³² New households by year: 2019 (719); 2018 (26,609); 2017 (31,605); 2016 (22,169); 2015 (10,169); and 2014 (3,662).

training enumerators and conducting data collection. The METSS II Project's Research, Monitoring and Evaluation (RM&E) Unit, RING Project's M&E Unit and USAID/Ghana's Economic Growth Office's M&E Specialist and the USAID/Ghana Contracting Officer Representative (COR) for the RING Project will review the submitted work plan and provide written comments no later than five (5) working days after receipt of the detailed work plan. The firm must receive approval of the work plan before beginning the field work.

In-briefing: The consulting team is required to organize and conduct an in-briefing with the METSS II Project, USAID/Ghana staff, and key members of the RING project team (e.g., Chief of Party, M&E Specialist, and other Technical Team Leads) for introductions and to discuss the survey team's understanding of the assignment, initial assumptions, survey questions, methodology, and work plan, and/or to adjust the Statement of Work, if necessary.

Mid-term Briefing and Interim Meetings: The consulting team is expected to hold a midterm briefing with METSS II Project, USAID staff and key members of the RING project team on the status of the survey, including potential challenges and emerging opportunities. The team will also provide the METSS II Chief of Operations and RING Project Chief of Party with periodic briefings and feedback on the team's findings, as agreed upon during the in-briefing. If desired or necessary, weekly briefings by phone can be arranged.

End of Data Collection Reporting: The firm is expected to submit a brief report immediately after data collection has ended to provide the status of data collection, stating completion and non-response rates. The data should be disaggregated by District and by the intervention cohorts. Where possible, the firm will present preliminary findings of the survey, which could be frequency distributions of the important variables for each of the 18 target indicators. The firm will share the preliminary findings with Global Communities during an in-person meeting. At which time, Global Communities' will have the opportunity to discuss the findings and provide comments in oral and written form. The firm will consider the preliminary comments of the key partners and incorporate the comments into the drafting of the survey report.

Draft Survey Report: The draft survey report should be consistent with the guidance provided in the reporting requirement sub-section. The report will address each of the questions identified in Annex C of this SOW and any other issues the team considers to have a bearing on the objectives of the survey. Any such issues can be included in the report only after consultation with METSS II and the RING Project. Once the initial draft report is submitted to the METSS II Project COO and the RING COP, the METSS II RM&E team, the USAID staff and the RING project staff will take nine (9) business days to review and submit comments on the initial draft. The firm will integrate the comments into the draft report and submit the final draft report within five (5) business days to METSS II and RING Projects. Each reviewing team (METSS II Project RM&E, RING M&E and USAID) will take five (5) business days to review and submit final comments on the final draft.

Final Survey Report: The firm will be asked to take no more than three (3) business days to respond/incorporate the final comments from the contributors (METSS II, RING and USAID). The survey team leader will then submit the final report to the METSS II Project COO and RING COP. All project data and records will be submitted in full and should be in electronic form in an easily readable format, organized and documented for use by those not fully familiar with the project or survey, and owned by USAID/Ghana.

The final report will be edited/formatted and presented to USAID and RING Project approximately one month after it has reviewed the content and approved the final revised version of the report.

Report Delivery

The firm shall submit the final report to METSS II COO and RING COP in electronic format (Microsoft Word) as well as printed and bound copies (Three copies in English) no later than three (3) working days of the receipt of the comments.

x. **SURVEY TEAM COMPOSITION**

The contractor must provide information about survey team members, including their curricula vitae, and explain how they meet the requirements in the survey SOW. Submissions of writing samples or links to past survey or evaluation reports and related deliverables composed by proposed team members are highly desirable. Per ADS 201.3.5.14, all team members must provide to USAID a signed statement (i.e., a conflict of interest form) attesting to a lack of conflict of interest or describing an existing conflict of interest relative to the project being evaluated (or surveyed, in this case).

Required qualifications and skills:

- Experience in survey or evaluation design, methods, management, and implementation;
- Technical subject matter expertise in Health and Nutrition, Water, Sanitation and Hygiene, Agriculture, and Governance, particularly knowledge of Ghana's local assembly system and its implementation mechanisms.;
- Background in USAID's cross-cutting program priorities, such as gender equality and women's empowerment, youth, etc.;
- Experience working in Northern Ghana; and
- Ability to communicate in the local languages of the Zone of Influence (ZOI) would be an added advantage.

Proposed key personnel are expected to be the people who execute the work of this contract. Any substitutes to the proposed key personnel must be vetted and approved before they begin work. The Project may request an interview with any of the proposed evaluation team members via conference call, Skype, or other means.

The survey team will consist of a team leader and three technical experts. A representative from METSS II Project, RING and USAID may be asked to join the survey and participate in the survey processes. It is anticipated that the firm should have the following experience:

Team Leader/Expert in Health and Nutrition or Agricultural Economics/Applicable Social Science: Qualification and Experience

- Specialist should have a postgraduate degree in health, nutrition or agricultural economics, or an applicable social science field. S/he should have at least 10 years' senior level experience working in the agricultural, nutrition, WASH and Governance sectors in a developing country context.
- S/he should have extensive experience in project management, conducting both qualitative and quantitative evaluations/ assessments and strong familiarity with the health and nutrition, WASH or agriculture sector in Ghana.
- Excellent oral and written skills in English are required.
- The Team Leader should also have experience in leading survey teams and preparing high quality documents. The Team Leader will take specific responsibility for estimating the results of the 18 target indicators and for assessing and analyzing the project's progress towards achieving its goal and objectives, factors for such performance and benefits/impact of the interventions implemented by the project.
- Good interpersonal and diplomatic skills.
- S/he will should have experience in providing leaderships for team in finalizing survey design, coordinating activities, arranging periodic meetings, consolidating individual input from team members, and coordinating the process of assembling the final findings and recommendations into a high quality document.
- S/he will write the final survey report.
- S/he will also lead the preparation and presentation of the key survey findings and recommendations to METSS II Project, RING Project and USAID.

Senior Survey Specialist: Qualification and Experience

4. Master's Degree or equivalent in a health and nutrition or an agricultural field (Agricultural economics, agribusiness, agricultural extension and rural sociology, or any other relevant health field), social sciences or related relevant fields.

5. Must have a minimum of 8 years conducting both qualitative and quantitative surveys/evaluations around health and nutrition, WASH, agriculture productivity, value chain enhancement, improving capacity for service delivery and decentralized governance in developing countries.
6. Good interpersonal and diplomatic skills.
7. Excellent oral and written communication skills in English.

Two Other Team Members: Qualifications and Experience

- A proven record of leadership in research, sound technical knowledge and relevant experience in the health and nutrition, WASH, agricultural and local governance sectors, social sciences or related relevant fields are required. Experience in program design and implementation, analysis and report writing are an advantage;
- Experience in conducting both qualitative and quantitative surveys/evaluations around health and nutrition, WASH and agriculture; and
- Excellent spoken and written skills in English.

In addition to the above listed key personnel, within the first few weeks of implementation, the survey team will also be required to recruit and train enumerators to assist with collecting data from the sampled households. METSS II will share a set of criteria for selecting enumerators with the Firm to provide a level of quality assurance to the process and ensure all enumerators hired are in compliance with GOG and USG guidelines. At a minimum, enumerators should possess at least a Bachelors' degree in a field related to health, nutrition, agriculture or related social science field. The enumerators should also have experience collecting data in rural areas in Ghana, particularly, in Northern Ghana. Enumerators who have undertaken surveys planned and implemented with USG resources, or managed by the GSS would be an advantage.

All team members will be required to provide a signed statement attesting to a lack of conflict of interest or describing any existing conflict of interest.

xi. SURVEY SCHEDULE

Survey Period of Performance

Work is to be carried out over a period of approximately 12 weeks, beginning o/a April 15, 2019 with field work and draft report completed by July 1, 2019 and final report and close out concluding July 18, 2019.

Illustrative Schedule

Timing (Anticipated submission date)	Anticipated Duration (Days)³³	Proposed Activities
15 th April 2019		Survey contract awarded to firm
22 nd April 2019	5	Firm prepares and submits a detailed survey work plan to METSS II and RING Projects
26 th April 2019	3	Survey team (firm) conducts in-brief with METSS II Project, RING Project and USAID/Ghana on survey work plan
6 th May 2019	4	METSS II, RING and USAID/Ghana review survey work plan and submit feedback to survey team
9 th May 2019	3	Survey team integrates comments into work plan and submits final document to METSS II and RING Projects
16 th May 2019	5	Survey team completes pre-testing of survey questionnaire/instruments/tools
23 rd May 2019	5	Survey team trains survey enumerators and supervisors

³³ This is only for weekdays

Timing (Anticipated submission date)	Anticipated Duration (Days)³³	Proposed Activities
10 th June 2019	12	Collect data from survey respondents in the project target areas
21 st June 2019	9	Data Analysis
24 th June 2019	Half day	Survey validation meeting for presentation of preliminary findings
1 st July 2019	5	Write draft report and submit preliminary findings
8 th July 2019	5	METSS II, RING and USAID/Ghana review survey draft report and submit feedback to survey team
15 th July 2019	5	Survey team incorporates comments and prepare final survey report
18 th July 2019	3	Survey Team Leader submits formatted Final Survey Report
Est. Total # of Days	64.5	

Payment Schedule

Payment under the prospective survey contract shall be as follows:

- 45% upon submission of Survey Work Plan to METSS II Chief of Operations.
- 30% upon submission of Draft Survey Report to METSS II Chief of Operations.
- 25% upon submission of Final Survey Report to METSS II Chief of Operations.

Schedule for preparing the work plans and survey design

The firm should plan to receive all key documents, and prepare a detailed work plan for the survey and submit to the METSS II Project COO and RING COP for review prior to the commencement of field work. It is expected, within the period of preparing the detailed work plan that the team members will begin to make key contacts and plan the recruitment of enumerators for the data collection phase of the assignment. Key contacts should also be obtained for interviews and discussions with project staff, and other key stakeholders. Most of this work should be done through meetings and site visits. The team will work through the METSS II COO and the RING COP or their designees to support setting up of as many meetings and interviews as possible.

Schedule for collecting data

The survey has qualitative elements, which will complement the quantitative data to enable the survey team to measure progress towards meeting the project goal and objectives. The focus at the beginning of the data collection period should be on meeting with USAID, RING Project and METSS II Project staff, and gathering and reviewing data not already available. The survey team should also solidify plans for meetings and visits to beneficiaries and stakeholders to gather qualitative data. The team should strategically finalize their recruitment and plans for training data collectors, which should take place immediately after finalizing the detailed work plan and survey questionnaires. Data collection for the outcome indicators will be done using tablets (these should not be included in the budget; they will be provided by METSS II or the GC RING team). The electronic data capture tool, simulating the data collection tools for the quantitative element of the survey should also be developed during this period. The training of enumerators will be based on both the paper questionnaire and electronic version of the questionnaire.

It is expected that the survey team will randomly sample beneficiaries to collect adequate data for the survey report. As time allows, the team will begin analyzing data and preparing the first few sections of the final report during this period.

Data Analysis

The survey team are expected to immediately start data analysis using appropriate methods as indicated in the detailed survey work plan. The analysis will serve as basis for the completion of the survey reports.

xii. FINAL REPORT FORMAT

The survey final report should include an executive summary; introduction; background of the project context; the survey purpose and questions; the methodology; the limitations to the survey; key findings, conclusions, and recommendations; and lessons learned (if applicable).

The survey report should be easily understood and should identify key points clearly, distinctly, and succinctly. The findings should be presented as analyzed facts, evidence, and data and not based on anecdotes, hearsay, or simply the compilation of people's opinions.

The **Executive Summary** should be 2-5 pages in length and present a concise and accurate statement of the most critical elements of the report. It should summarize key points (purpose and background, survey questions, methods, findings, and conclusions).

The report should provide a brief **Background** information, which should include country and/or sector context; specific problem or opportunity the intervention addresses; and the development hypothesis, theory of change, or simply how the intervention addresses the problem. Describe the specific strategy, project, activity, or intervention implemented including (if available) award numbers, award dates, funding levels, and implementing partners

The **Survey Purpose and Questions** should state the purpose of, audience for, and anticipated use(s) of the survey. Clearly state the survey questions in this section.

Explain the survey **Methodology** in detail and clearly state sources of information. Disclose limitations to the survey, especially, those associated with the methodology (e.g. selection bias, recall bias, unobservable differences between comparator groups, etc.).

NOTE: A summary of methodology can be included in the body of the report, with the full description provided as an annex.

Findings, Conclusions, and Recommendations: Address all survey questions in this Statement of Work (SOW) or document why some survey questions and/or comments from METSS II Project or the RING Project have not been addressed for approval.

If survey findings assess person-level outcomes, they should also be separately assessed for both males and females.

Findings and conclusions should be specific, concise, and supported by strong quantitative or qualitative evidence. If recommendations are included, separate them from findings and conclusions. Recommendations should be supported with specific findings and should be action-oriented, practical and specific.

The **Annexes** to the report shall include:

- The Survey SOW;
- Any statements of difference regarding significant unresolved differences of opinion by USAID/Ghana, METSS II Project, RING Project, and/or members of the consulting team;
- Indicator data result tables with accompanying statistics (such as the indicator result, the sample size, the confidence interval, standard error and significant tests, where applicable)
- All data collection and analysis tools used in conducting the survey and/or survey, such as questionnaires, checklists, and discussion guides;
- All sources of information, properly identified and listed;
- Signed disclosure of conflict of interest forms for all survey team members, either attesting to a lack of conflict of interest or describing existing conflicts of interest; and

- Summary information about survey team members, including qualifications, experience, and role on the team.

The final version of the survey report will be submitted to METSS II Project and RING Project in hard copy as well as electronically. The report format should be restricted to Microsoft products and 12- point font type should be used throughout the body of the report, with page margins 1" top/bottom and left/right. The report should not exceed 35 pages, excluding references and annexes.

The survey team leader shall incorporate METSS II Project, RING Project, and USAID's comments and submit the final report to METSS II Project and RING Project in electronic format (Microsoft Word) as well as printed and bound copies (Three copies in English) no later than three working days of the receipt of the comments.

xiii. CRITERIA TO ENSURE THE QUALITY OF THE SURVEY REPORT

Per this SOW, an independent report shall be prepared for the survey in accordance with USAID evaluation reporting guidelines. The draft and final survey reports will be evaluated against the following criteria to ensure the quality meets the minimum standards of a USAID-sponsored survey:

- The survey reports should represent a thoughtful, well-researched, and well-organized effort to objectively evaluate the project.
- The report should be easily understood and should identify key points clearly, distinctly, and succinctly.
- The executive summary of the report should present a concise and accurate statement of the most critical elements of the report.
- The report should adequately address all survey questions included in the statement of work, or the survey questions subsequently revised and documented in consultation and agreement with METSS II Project, RING Project, and USAID.
- The methodology should be explained in detail and all sources of information properly identified in the report.
- Limitations to the survey should be adequately disclosed in the report, with particular attention to the limitations associated with the methodology (selection bias, recall bias, unobservable differences between comparator groups, etc.).
- Findings should be presented as analyzed facts, evidence, and data and not based on anecdotes, hearsay, or simply the compilation of people's opinions.
- Findings and conclusions should be specific, concise, and supported by strong quantitative or qualitative evidence.
- If findings assess person-level outcomes, they should also be separately assessed for both males and females.
- Recommendations should be supported by a specific set of findings and should be action-oriented, practical and specific.

xiv. SURVEY MANAGEMENT

Logistical Support

The RING Project will support with necessary logistical arrangements. RING will collaborate with the METSS II project to help the survey team identify key documents, and arrange for meetings with stakeholders. The survey team is responsible for arranging other meetings as identified during the course of the survey and may request support from GC RING and METSS II. In all these arrangements the USAID/Ghana RING COR and EG Office M&E Specialist should be notified prior to each of these meetings.

Upon request from the contractor with reasonable notice, the RING Project will arrange for vehicles needed for site visits, and meetings, and will assist with hotel arrangements, if necessary. However, the survey team members will be required to make their own payments for lodging, meals and incidental expenses. RING will make available their conference room or another convenient location upon request of the survey team as workspace. However, the survey team are expected to use their own computers.

Technical Direction

Technical direction during the performance of the survey will be provided by the METSS II Chief of Operations, who will be the point of contact for the firm's team during performance. The METSS II Chief of Operations will manage the technical execution of survey in consultation with the USAID/Ghana RING COR and EG Office M&E Specialist. In the event that the firm believes that it is required to perform activities outside the survey SOW, it must immediately contact/inform the METSS II Chief of Operations before performing these tasks.

The RING COP will manage the administrative aspect of the survey including recruiting and signing contract with the Survey team. The RING Chief of Party is the only authorized official to make changes to the administrative terms and conditions of the survey contract. In the event that the firm believes that it is required to perform activities outside the survey contract, it must immediately contact/inform the RING COP and METSS II COO before performing these tasks. The firm will not be paid any amount in excess of the survey budget set forth in the survey contract.

ANNEX A: Evidence of Responsibility

1. Eligibility to Receive Award

Company Name certifies that it is qualified and eligible to receive an award for the provision of describe goods or services under applicable laws and regulations of the United States and Name of Host Country.

2. Authorized Negotiators

Company Name proposal for Project Name may be discussed with any of the following individuals. These individuals are authorized to represent Company Name in negotiation of this offer in response to this RFQ.

List Names of Authorized signatories

Address

Telephone/Fax

Email address

3. Adequate Financial Resources

Company Name has adequate financial resources to implement this Contract.

4. Ability to Comply

Company Name is able to comply with proposed contract terms and delivery schedule having taken into consideration all existing business commitments, commercial as well as governmental.

5. Record of Performance, Integrity and Business Ethics

Company Name certifies that Company Name and/or any of its Principals are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any donor agency; and have not, within a three-year period preceding this proposal, been convicted of or had a judgment rendered against them for commission of fraud or a criminal offense; and have not, within a three-year period preceding this proposal, had one or more contracts terminated for default by any donor agency.

6. Certification Regarding Terrorism Financing

Company Name certifies that it is not on the U.S. Department of Treasury Office of Foreign Assets Control (OFAC) Specially Designated Nationals (SDN) List and is eligible to participate in this solicitation.

7. Organization, Experience, Accounting and Operational Controls, and Technical Skills

Company Name has the necessary organization, experience, accounting and operational controls, and technical skills, or the ability to obtain them.

8. Equipment and Facilities

Company Name has the necessary production, construction, and technical equipment and facilities, or the ability to obtain them.

By signature hereon, the Bidder certifies that these statements are accurate, current, and complete.

Date:

Name:

Signature: _____

ANNEX B: List of RING Project Indicators for 2019 End Line Beneficiary-based Survey

No.	Results Area	Indicator Title	Level of Disaggregation
1	Improved livelihood and nutritional status of vulnerable households in targeted communities in the Northern Region of Ghana	HL.9-a: Prevalence of stunted children under five years of age (R)	Male Female
2	Improved livelihood and nutritional status of vulnerable households in targeted communities in the Northern Region of Ghana	HL.9-c: Prevalence of underweight children under five years of age(R)	Male Female
3	Improved livelihood and nutritional status of vulnerable households in targeted communities in the Northern Region of Ghana	HL.9-b: Prevalence of wasted children under five years of age(R)	Male Female
4	Increased diversification of income throughout the year among target households	RING 1.1.2.1: Percent (%) of households who state they are more financially secure	Gendered Household type: Adult Female no Adult Male (FNM), Adult Male no Adult Female (MNF), Male and Female Adults (M&F), Child No Adults (CNA)
5	Increased availability of affordable, diverse plant and animal foods throughout the year among target households	RING 1.1.3.1: Percent (%) of target households benefiting from crop intervention reporting use of techniques to reduce post-harvest losses	Location: District
6	Increased availability of affordable, diverse plant and animal foods throughout the year among target households	RING 1.1.3.2: Percent (%) of target households reporting shorter lean season	Location: District Gendered Household type: Adult Female no Adult Male (FNM), Adult Male no Adult Female (MNF), Male and Female Adults (M&F), Child No Adults (CNA).
7	Increased availability of affordable, diverse plant and animal foods throughout the year among target households	RING 1.1.3.6: Percent (%) of targeted households who have increased their income through RING supported activities	
8	Improved behaviors related to nutrition and hygiene for women and children	RING 1.2.1: Percent (%) of households adopting improved nutrition practices	Location: District Gendered Household type: Adult Female no Adult Male (FNM), Adult Male no Adult Female (MNF), Male and Female Adults (M&F), Child No Adults (CNA)
9	Increased adoption of positive nutrition behaviors among target households	RING 1.2.1.1: Percent (%) of respondents in target communities knowledgeable of appropriate infant and young child feeding practices	Location: District Gendered Household type: Adult Female no Adult Male (FNM), Adult Male no Adult Female (MNF), Male and Female Adults (M&F), Child No Adults (CNA)

No.	Results Area	Indicator Title	Level of Disaggregation
10	Increased adoption of positive nutrition behaviors among target households	RING 1.2.1.2: Number of service delivery channels that mainstream appropriate nutrition messages throughout the community	
11	Increased adoption of positive nutrition behaviors among target households	HL.9.1-c: Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age	
12	Increased adoption of positive nutrition behaviors among target households	HL.9.1-a: Prevalence of children 6-23 months receiving a minimum acceptable diet	Sex: Male, Female
13	Increased adoption of positive nutrition behaviors among target households	HL.9.1-b: Prevalence of exclusive breastfeeding of children under six months of age	Sex: Male, Female
14	Increased adoption of hygiene and sanitation behaviors in target households and their communities	HL.8.2-5: Percentage of households with soap and water at a handwashing station commonly used by family members	
15	Increased adoption of hygiene and sanitation behaviors in target households and their communities	HL.8.2-6: Percentage of households in target areas practicing correct use of recommended household water treatment technologies	
16	Increased adoption of hygiene and sanitation behaviors in target households and their communities	RING 3.1.8.1-2: Percent (%) of respondents who know any 3 critical times of hand washing	Location: District Gendered Household type: Adult Female no Adult Male (FNM), Adult Male no Adult Female (MNF), Male and Female Adults (M&F), Child No Adults (CNA)
17	Strengthened local support networks addressing the ongoing (nutrition and livelihoods) needs of vulnerable households	RING 1.3.1: Percent (%) of households reporting improvements in nutrition and livelihood services from local government	Type of service: Nutrition, Livelihood, and WASH Location: District
18	Strengthened capacity of target DAs and the NRCC to respond to community priorities for improved nutrition and livelihoods	RING 1.3.1.8: Percentage of core RING implementing departments that use community feedback to inform planning processes for their RING Annual Work Plans and Budgets and/or District Annual Action Plans	

ANNEX C: Suggested Additional Research Questions for the RING Project 2019 End Line Beneficiary-based Survey

Agriculture & Livelihoods Components

- Since participating in RING, have you undertaken any *new* income generating activities to diversify your income sources? If so, what are they? **Or...**
 - How many sources of income do you have now versus five years ago?
- Do you feel that the nutritional status of your family has improved, as compared to when you began participating in RING interventions?
- Do you feel that the economic status of your family has improved, as compared to when you began participating in RING interventions?

- Compared to last year, how do you compare your current food access situation - do you feel comfortable with the amount of food you have in storage from last year's harvest? Do you have additional income to purchase surplus foods? Do you have more bartering power to leverage for additional food, if needed?
 - (tied to Indicator #17 and % of households reporting a shorter lean season)
 - Perhaps optional – shorter, longer, the same
- Have your income levels improved since being engaged in RING programming?
- Suggestion on altering the question: *In the past year, how much did you receive from selling your surpluses, including grains and animals?* – can we leave it open ended instead of providing ranges to enable us to get a better average figure?

For households receiving direct input support³⁴ in 2014-2016:

- Were you able to maintain your intervention after direct input support from the Assembly halted (i.e. continued farming soybean or groundnut without seed and tractor service provision, expanded their small ruminant herd)?
 - If so, what were some of the greatest challenges?
 - If not, what were some of the challenges you were unable to overcome?

For households receiving direct input support³⁵ in 2017-2018:

- Moving forward, what are some of your greatest concerns over the management or continuation of the intervention you received from the Assembly, now that direct input support will no longer be provided?
 - What are your plans to address those concerns, if any?

Sustainable Agriculture Practices:

- Poultry and/or small ruminant beneficiaries: do you practice sustainable agricultural practices by applying poultry manure on their farms?
 - If so, have you observed any benefits? Please describe.
 - If not, can you describe some of the challenges that prevent you from doing this?
- Were you trained on intercropping and other conservation farming methodology?
 - If so, do you still practice those approaches?
 - If no, why not?

For soybean and/or groundnut beneficiaries that utilize PICS bags:

- Did you utilize the PICS bag technology after harvesting groundnut or soybeans? If so, did it make a positive impact on quality of the grains in storage? Did you feel it helped your harvest last for longer into the dry season?

Nutrition Component

- (follow up on question – for which of the following public services have you seen an improvement in in the last year?) If you have not seen an improvement, what are some of the challenges? What are some suggestions for further improvement? If it has improved, in which areas?
- In the past 12 months, have you had any health services provided to you by a CHPS/Health Center staff at the facility or at home?
 - If yes, what were they?
 - Were you satisfied with the care you received?
 - How could it have improved?
- Have you received any nutrition or health-related counseling from a non-health worker (i.e. environmental health agent, AEA, Community Development or VSLA officer) in the last six months?
 - If so, what advice did you receive?

³⁴ Interventions would include: soybeans, groundnuts, small ruminants, poultry, leafy green vegetable cultivation, OFSP cultivation, and VSLA.

³⁵ Interventions would include: soybeans, groundnuts, small ruminants, poultry, leafy green vegetable cultivation, OFSP cultivation, and VSLA.

WASH Component

- (follow up question to the hand washing at critical periods knowledge versus practice) If you are aware of critical times to wash your hands with soap and water, but do not adhere to this practice, what are some of the challenges you face in doing so?
- (follow-up to the main water source question – for those using 'unimproved sources of water') Why do you use this water source?
 - *Note: tied to availability of potable water/improved water sources in the community – perhaps only unimproved sources are available, perhaps the taste of dam water is preferred to that of the borehole, etc.*
- (follow up question to whether someone is satisfied with their current water sources) If not satisfied, why are you not satisfied? (if water source is unimproved, but the person is satisfied) Why are you satisfied with this source of drinking water?
- (follow up as to whether the household has an improved latrine – if yes) Did you utilize any income generated or earned from RING interventions to support the installation of this latrine? For instance, a VSLA loan, selling a small ruminant, sales of soybean or groundnut or OFSP harvests, etc. List those sources.

Governance Component

- (follow up to question: Have you participated in a community engagement forum with the District Assembly?) If yes, did the Assembly discuss their budgeting and planning process for development projects for the year?
- (follow up to question: Have you spoken to your Assembly Person or Unit Committee Member about a community development issue?) If yes, what issue was it about? Did they respond appropriately to your concern? Were you satisfied with that response? Why, or why not?
- Are you satisfied with the level of technical support you have received from your local government officials within the interventions you have received? **OR...**
 - How would you rate your satisfaction level with extension support services you have received from your local government officials (use a Leichardt Scale)
 - This variation may require multiple entries if satisfaction varies by sector, i.e. very high with health, but poor with agriculture.
- Have you recently paid any levies or tax rates to the Assembly and if so, are you aware of what those rates are for/will contribute to?
- In the last 12 months, has your family been supported by the Assembly to renew or register for the National Health Insurance Scheme?
 - If so, how many people benefitted? (get ages, or ranges, if possible)
- (follow-up question to Are you a LEAP Beneficiary?) If yes, how many people in your household are registered as a beneficiary?

Other areas to consider (GOG-focused questions)

General:

- Regarding the core interventions in your respective area, do you feel your overall technical capacity to implement those interventions and provide the necessary community and/or household follow-up support has improved in the last five years?
 - If so, how?
 - If not, what are some reasons why?
- Were you involved in or aware of the process in targeting the RING communities and households that eventually benefitted from the project?
 - If so, were you satisfied with the selection process?

- Do you have any recommendations to improve on this process?
- Which interventions within your technical sector (or in general) do you believe have the highest potential for sustainability and why?
- Which activities do you believe are highly effective under RING, but may face challenges in being sustained by the Assembly?
 - What are some of those challenges?
- Which (choose: agriculture, livelihoods, nutrition, WASH, good governance [including gender & social protection]) intervention did you personally feel was most effective and why? Which ones were the least effective and why?
 - Any different interventions for that sector you would have suggested? What is your rationale (when tying it back to a malnutrition and poverty reduction program)?
 - *Note: we do not necessarily need to limit the 'agric officers' to providing feedback only on agric interventions; because of the integrated nature of the project, health may have good advice on environmental health, while ag can speak to nutrition efforts as well.*
- Do you believe that community engagement mechanisms across all sectors (i.e. integrated durbars, Citizen's Forums, cooking demonstrations, video screenings, MTMSG, etc.) are an effective means of disseminating information to the public? Why or why not?
 - What are some ways this can be improved?
- Which are some interventions that you personally believe the Assembly as a whole did not capitalize on during the life of RING that could have made a lasting impact on the effectiveness of the Assembly's general operations or fulfillment of its core mandates OR on the direct benefits to the households participating in certain interventions?
 - *Note: trying to get at some missed opportunities here*
- How would you characterize your district's inter-departmental coordination and collaboration under RING? (use a Leichardt Scale)
 - If strong, do you believe this collaboration will continue after RING? Why or why not?

Governance:

- In addressing identified PFM risks, can you provide some specific examples of how implementation of the risk mitigation plans may have improved internal controls or general MMDA operations, if at all?
 - What is your personal outlook on the sustainability of the PFM efforts?
 - If you foresee any challenges, what might some of those be? And what suggestions do you have to mitigate those issues?
- In your opinion, have Governance interventions, such as Citizen's Forums, Town Hall Meetings, PFM, community action planning, and social protection, among others, contributed to achieving improved nutrition and resiliency outcomes?
 - If yes, please explain your rationale.
 - If no, what are some of the challenges?
- How would you rate the overall functionality of your district's sub-structures? (use a Leichardt Scale)
 - What is the correlation, if any, between sub-structure functionality and the Assembly's ability to fulfill some of its core mandates?
- Has the overall functionality of the Area Councils improved the internally generated funds mobilization?
 - And if yes, by what margin?
 - If no, what are some of the challenges?
- What areas do you typically expend the Internally Generated Funds on?
- What are some recommendations you have on improving the management of Internally Generated Funds? *(emphasize that the answers are anonymous)*

M&E

- When planning for interventions, during actual implementation, and during monitoring and evaluation, how often did you as an individual (or department) utilize data for decision making, as compared to before RING partnered with your district?
- Has your district fully launched the NORMIS efforts?
 - If so, what has been the impact, if any, on service delivery, project planning, and timely and harmonized reporting?

- o What are some of the challenges you have faced, if any, in the use of the NORMIS?
 - o *Note: this may need to be focused on certain officers within the Assembly*
- Have you benefitted from any of the M&E e-learning modules? To what extent, if any, have they supported improving your internal M&E capacity?
 - o *Note: this may need to be focused on certain officers within the Assembly*
- To what extent has the establishment of resource centers eased your work in data management and storage?
 - o *Note: this may need to be focused on certain officers within the Assembly*

Agriculture

- How would you characterize your experience in receiving direct funding via the Assembly through RING? (use a Leichardt Scale) Please explain any challenges or benefits.

Health/Nutrition:

- Can you provide some specific examples in how RING has contributed to improving the nutrition services delivery, if at all?
- Has RING effectively contributed in engaging the entire family to improve nutrition?
 - o If so, how?
 - o If not, what do you believe are some of the challenges?

Current Facility-Level Skills & Assets:

- Does this facility have at least one staff that has been trained in:
 - o Anemia prevention & control protocols
 - o CMAM
 - o IYCF Counseling
 - o Commodity Management
 - o QI
- Do facilities have access to essential equipment, such as:
 - o Counseling cards
 - o Weighing scales (functional)
 - o Height board
 - o HemoCue devices (functional)
 - o Microcuvettes (sufficient supply for one quarter)

Other

- Can we also work on a methodology to capture intended and unintended outcomes? Possibly by thematic area, or at the Assembly (systems strengthening efforts)? It may be too challenging to undertake at the household level.
- Can we look at the stunting, wasting, anemia, and underweight status for the RING beneficiary households specifically? The DHS is nationwide with smaller regional sample sizes and would not necessarily provide the most accurate project-specific information.

ANNEX D: RING Project Results Framework

IR 2.3 -- Improved Resiliency of Vulnerable Households and Reduced Under-Nutrition (Ref. FTF IR 2)

RING Goal: Improved livelihood and nutritional status of vulnerable households in targeted communities in Northern Region of Ghana

- 20% decrease in prevalence of stunting among children under five(HL.9-a)
- 20% decrease in prevalence of anemia among children under five(HL.9-g)
- 20% decrease in prevalence of underweight among children under five(HL.9-c)
- 20% decrease in prevalence of wasting among children under (HL.9-b)
- Additionally, RING will contribute to increasing the income of 80% of targeted vulnerable households by 100%.

Component Result 1: Increased access and consumption of diverse quality food among target households, especially among women and children under five

IR 1a: Increased access to savings and credit among target households

- # of active informal savings and lending groups
- # of members of active informal savings and lending groups
- Cumulative Amount Saved (in USD by informal Savings and lending (VSLA) Group members
- Amount of funds loaned (in USD) annually by informal savings and lending groups

IR 1b: Increased diversification of income throughout the year among target households

- # of households benefiting directly from USG assistance under FTF
- % of households who state they are more financially secured

IR 1c: Increased availability of affordable, diverse plant and animal foods throughout the year among target households

- # of farmers and others who have applied improved technologies or management practices as a result of USG assistance
- % of target households reporting use of techniques to reduce post-harvest losses
- % of target households reporting shorter lean season
- % of target households using improved practices in horticulture, small animal husbandry, and other alternative livelihoods

Component Result 2: Improved behaviors related to nutrition and hygiene for women and children

IR 2a: Increased adoption of positive nutrition behaviors among target households

- % respondents in target communities knowledgeable of appropriate infant and young child feeding practices
- Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age(O)
- Prevalence of children 6-23 months receiving a minimum acceptable diet
- Prevalence of exclusive breastfeeding of children under six months of age

IR 2b: Increased adoption of hygiene and sanitation behaviors in target households and their communities

- # of people receiving improved service quality from an existing basic or safely managed drinking water service as a result of USG assistance
- % of respondents who know any 3 critical times of hand washing
- # of hand washing stations installed in commonly used public spaces
- % of RING communities certified as Open Defecation Free (ODF)

Component Result 3: Strengthened local support networks addressing the ongoing (nutrition and livelihoods) needs of vulnerable households

IR 3a: Strengthened capacity of target DAs and the NRCC to respond to community priorities for improved nutrition and livelihoods

- # target MMDAs that are eligible for direct funding from USAID
- % of direct-funded partner contribution toward the RING Annual Work Plan budget

IR 3b: Strengthened capacity of target communities to integrate nutrition and livelihood priorities for vulnerable households into community action plans, implement activities, and monitor progress

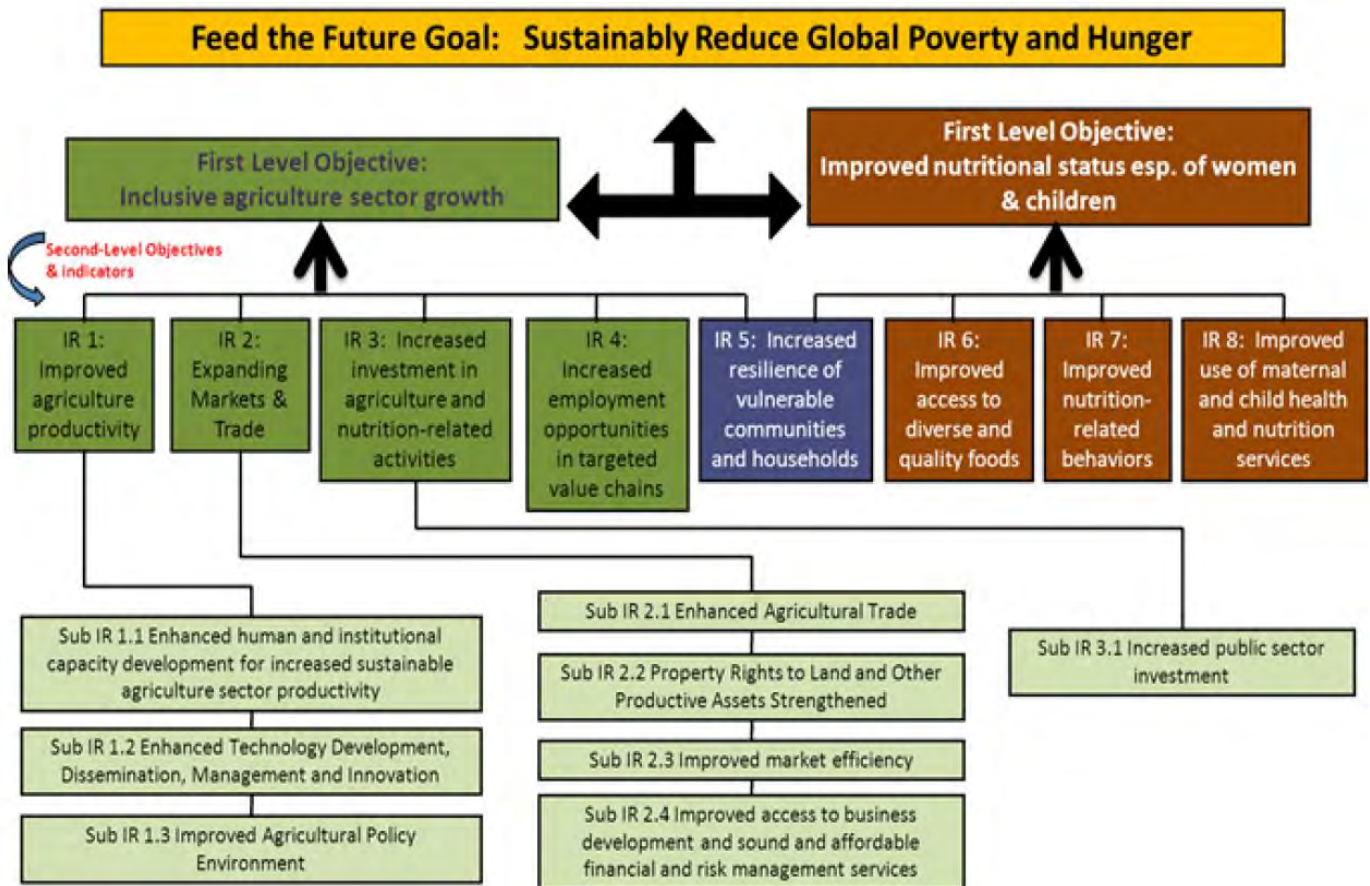
- % target households participating in community support groups

IR 3c: Strengthened capacity of targeted DAs and the NRCC to monitor efforts for nutrition and livelihoods in their respective areas

- # of coordination/review meetings between MMDAs and NRCC

RING Development Hypothesis: If local networks (i.e. MMDAs, NRCC and Community-based Organizations and [CBO] and NGOs) are strengthened to develop, implement and monitor nutrition & income growth activities, THEN the nutrition and livelihood status among targeted vulnerable households will improve.

ANNEX E: Feed the Future Results Framework



ANNEX II: SUMMARY OF PROJECT BENEFICIARIES BY DISTRICT AND ALLOCATION OF SAMPLE SIZE

District	Total # of beneficiaries	Proportion of total beneficiaries	Proportion of sampled beneficiaries	# of communities' beneficiaries were sampled from
Central Gonja	6456	0.063353123	131	7
Chereponi*		0		
East Gonja	7963	0.078141406	161	9
East Mamprusi	5811	0.057023699	118	7
Gushiegu	8041	0.078906825	163	9
Karaga	6022	0.059094254	122	7
Kpandai	7267	0.071311516	147	8
Kumbungu	7066	0.06933909	143	8
Nanumba North	7251	0.071154507	147	8
Nanumba South	6194	0.060782101	125	7
North Gonja	6614	0.064903587	134	7
Saboba	8169	0.080162897	165	9
Sagnarigu	4926	0.048339139	100	6
Savelugu-Nanton	5443	0.053412492	110	6
Tamale Metro	5479	0.053765762	111	6
Tolon	5154	0.050576517	104	6
West Gonja	4049	0.039733085	82	5
Grand Total	101905	1	2063	115

*Eliminated because there is currently a security challenge in the district

ANNEX III: SOURCES OF INFORMATION

- FTF Ghana Population-based Survey in Northern Ghana: Baseline Protocol
- RING and SPRING baseline questionnaire
- 2017 BBS questionnaire
- Nutrition and poverty in Northern Ghana questionnaire
- 2014 Ghana Demographic and Health Survey questionnaire
- Feed the Future ZOI Survey Methods - Questionnaire – 2018/201
- Feed the Future Indicator Handbook – March 2018

ANNEX IV: DATA COLLECTION INSTRUMENTS



Final Household
Questionnaire_17-06-



Revised qualitative
tools_10.06.19.docx

ANNEX V: SOURCES OF DATA BASED ON EVALUATION THEMES AND KEY EBBS QUESTIONS

Main question	Sub question	Source of data	Data collection instruments
To what extent has the RING Project achieved its intended goal and objectives as defined by the results framework?	Has the RING Project's G2G interventions at the district level resulted in sustainable reduction in hunger and malnutrition for households, especially among children under five?	- Primary data (interview of beneficiaries) - SPRING&RING Baseline report 2017 BBS report	HH questionnaire
	Have the combined efforts in WASH, Nutrition and Livelihood activities resulted in improved nutrition and hygiene behaviors for households in the target districts? (Indicators of interest here are MAD, WDD);	- Primary data interview of beneficiaries - SPRING&RING Baseline report 2017 BBS report	HH questionnaire
	How has GC RING activities strengthened local support networks to address the nutrition and livelihood needs of vulnerable communities? (For target MMDAs, and communities).	Primary data (KII with Dist Assembly staff and staff of decentralized departments)	KII Guide
What unintended outcomes has the RING Project's Livelihood approach and activities achieved relative to improving farmer incomes and reducing vulnerability at the household level?		Primary data (interview with beneficiaries)	HH questionnaire FGD Guide
		Primary data (interview with RING staff, Staff of decentralized depts)	KII guide
Which RING interventions are the most effective and least effective at improving livelihoods, nutritional status and hygiene practices? (Efficiency and effectiveness)		Primary data interview of beneficiaries SPRING&RING Baseline report 2017 BBS report	HH questionnaire
What can be identified as lessons learned and best practices and from which stakeholders or beneficiaries? (Effectiveness)?		Primary data in (interview with NRCC, Dist Assemblies, RING project staff and management and partners)	FGD Guide – beneficiaries
			KII stakeholders

Main question	Sub question	Source of data	Data collection instruments
To what extent are the RING interventions likely to continue after USG support? Is stakeholder buy-in likely to continue or be increased after the current project expires? (Sustainability)		Primary data in (interview with NRCC, Dist Assemblies, RING project staff and management and partners)	FGD Guide – beneficiaries KII stakeholders

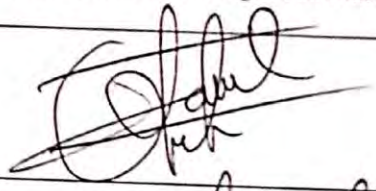
ANNEX VI: INDICATORS AND MEASUREMENT APPROACHES FOR KEY STUDY QUESTIONS

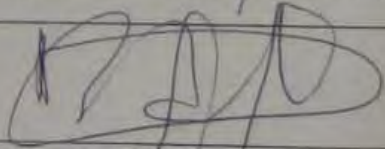
Question	Indicators	Measurement approach
To what extent has the RING Project achieved its intended goal and objectives as defined by the results framework? The answers to this question were provided by analyzing the issues that addressed questions a, b and c below:		
a. Has the RING Project's G2G interventions at the district level resulted in sustainable reduction in hunger and malnutrition for households, especially among children under five?	• Prevalence of stunted children under five years of age • Prevalence of underweight children under five years of age • Prevalence of wasted children under five years of age • Percent (%) of target households reporting shorter lean season •	The before-and-after research approach was adopted to measure the effects of the project on stunting, wasting and underweight. The end line evaluation data was compared with existing data (including baseline and mid-line data and annual beneficiary-based survey) to identify changes that occurred due to the project interventions. Qualitative data was also collected and analyzed so as to provide a deeper understanding and contextual information to the observed changes.
b. Have the combined efforts in WASH, Nutrition and Livelihood activities resulted in improved nutrition and hygiene behaviors for households in the target districts? (Indicators of interest here are MAD, WDD);	• Percent (%) of households adopting improved nutrition practices • Percent (%) of respondents in target communities knowledgeable of appropriate infant and young child feeding practices • Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age • Prevalence of children 6-23 months receiving a minimum acceptable diet • Prevalence of exclusive breastfeeding of children under six months of age • Percentage of households with soap and water at a handwashing station commonly used by family members	EBBS data was compared with existing data (including baseline and 2017 BBS) to identify changes that have occurred due to the project interventions. Qualitative data was also collected and analyzed so as to provide understanding and explanation to the observed changes.

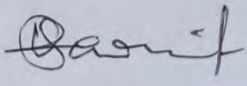
Question	Indicators	Measurement approach
	- Percentage of households in target areas practicing correct use of recommended household water treatment technologies - Percent (%) of respondents who know any 3 critical times of hand washing	
c. How has GC RING activities strengthened local support networks to address the nutrition and livelihood needs of vulnerable communities?	- Percent (%) of households reporting improvements in nutrition and livelihood services from local government - Number of service delivery channels that mainstream appropriate nutrition messages throughout the community - Percentage of core RING implementing departments that use community feedback to inform planning processes for their RING Annual Work Plans and Budgets and/or District Annual Action Plans	The EBBS data was compared with existing data (including baseline and 2017 BBS) to identify any changes that may have occurred due to the project interventions. Qualitative data was also collected and analyzed to determine if local support networks were strengthened by the project
What unintended outcomes has the RING Project's Livelihood approach and activities achieved relative to improving farmer incomes and reducing vulnerability at the household level?	- Percent (%) of households who state they are more financially secure - Percent (%) of target households benefiting from crop intervention reporting use of techniques to reduce post-harvest losses - Percent (%) of targeted households who have increased their income through RING supported activities	EBBS results related to HH income and vulnerability were compared to that of 2017BBS and baseline. Analysis of qualitative data was done to identify reported outcomes which were not part of project results indicators. Analysis of quantitative data was done to identify outcomes that were not part of project results, through generating data for indicators that were not part of the core project indicators.
Which RING interventions are the most effective and least effective at improving livelihoods, nutritional status and hygiene practices? (Efficiency and effectiveness)		Effectiveness was considered at two levels, namely project management level and project beneficiary level. It was looked at in terms of whether the project was implemented the way it was intended, and if yes, how, and if not, why not? Were there some interventions that were not implemented, why? Analysis of the results related to each intervention was done to determine which intervention produced the most results. Qualitative data was collected and analyzed to determine the factors that affected project efficiency.

Question	Indicators	Measurement approach
What can be identified as lessons learned and best practices and from which stakeholders or beneficiaries? (Effectiveness)? To what extent are the RING interventions likely to continue after USG support? Is stakeholder buy-in likely to continue or be increased after the current project expires? (Sustainability)	• % of project beneficiaries who indicate they can continue project activities • Key actors' ability and willingness to continue project interventions • Lessons learnt in project implementation • Key factors of sustainability	Quantitative data on beneficiaries' willingness and ability to continue livelihood activities supported by project The Likert-scale type of questions was used to assess the beneficiaries' perception about project continuity). Qualitative data on lessons learnt and sustainability factors.

ANNEX VII: DISCLOSURE OF ANY CONFLICTS OF INTEREST

Name	Lutuf Abdul-Rahman
Title	Managing Partner
Organization	Saha Consulting and Services
Evaluation Position?	☒ Team Leader ☐ Team member
Evaluation Award Number (contract or other instrument)	
USAID Project(s) Evaluated (Include project name(s), implementer name(s) and award number(s), if applicable)	USAID/Ghana's Resiliency in Northern Ghana awardee to Global Communities. Award #: AID-641-C-14-00002
I have real or potential conflicts of interest to disclose.	☐ Yes ☒ No
If yes answered above, I disclose the following facts: <i>Real or potential conflicts of interest may include, but are not limited to:</i> 1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project. 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.	
I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.	
Signature	
Date	22/08/2019

Name	Dr Abdulai Abubakari
Title	Health and Nutrition Expert
Organization	Senior Lecturer, University for Development Studies, Tamale & Associate Saha Consulting and Services
Evaluation Position?	☐ Team Leader ☒ Team member
Evaluation Award Number (contract or other instrument)	
USAID Project(s) Evaluated (Include project name(s), implementer name(s) and award number(s), if applicable)	USAID/Ghana's Resiliency in Northern Ghana awardee to Global Communities. Award #: AID-641-C-14-00002
I have real or potential conflicts of interest to disclose.	☐ Yes ☒ No
If yes answered above, I disclose the following facts: Real or potential conflicts of interest may include, but are not limited to: 1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project. 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.	
I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.	
Signature	
Date	21-08-2019

Name	Dr Nashiru Sulemana
Title	Agriculture Expert
Organization	Senior Lecturer, University for Development Studies, Tamale & Associate Saha Consulting and Services
Evaluation Position?	☐ Team Leader ☒ Team member
Evaluation Award Number (contract or other instrument)	
USAID Project(s) Evaluated (Include project name(s), implementer name(s) and award number(s), if applicable)	USAID/Ghana's Resiliency in Northern Ghana awardee to Global Communities. Award #: AID-641-C-14-00002
I have real or potential conflicts of interest to disclose.	☐ Yes ☒ No
If yes answered above, I disclose the following facts: <i>Real or potential conflicts of interest may include, but are not limited to:</i> 1. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project. 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.	
I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.	
Signature	
Date	22/08/2019

Name	Dr David Mensah
Title	Senior Survey Specialist and Data Analyst
Organization	Saha Consulting and Services
Evaluation Position?	☐ Team Leader ☒ Team member
Evaluation Award Number (contract or other instrument)	
USAID Project(s) Evaluated (Include project name(s), implementer name(s) and award number(s), if applicable)	USAID/Ghana's Resiliency in Northern Ghana awardee to Global Communities. Award #: AID-641-C-14-00002
I have real or potential conflicts of interest to disclose.	☐ Yes ☒ No
If yes answered above, I disclose the following facts: Real or potential conflicts of interest may include, but are not limited to: 13. Close family member who is an employee of the USAID operating unit managing the project(s) being evaluated or the implementing organization(s) whose project(s) are being evaluated. 14. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose projects are being evaluated or in the outcome of the evaluation. 15. Current or previous direct or significant though indirect experience with the project(s) being evaluated, including involvement in the project design or previous iterations of the project. 16. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose project(s) are being evaluated. 17. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose project(s) are being evaluated. 18. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular projects and organizations being evaluated that could bias the evaluation.	
I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.	
Signature	
Date	21 st AUGUST, 2019

ANNEX VIII: RESULTS OF CORE I8 INDICATORS BY DISTRICT AND TYPE OF HOUSEHOLD

Table 9: HL.9-a: Prevalence of stunted children under five years of age by sex, age group and district

Group	Weighted N	Unweighted N	-3SD (95% CI) -Severe	-2SD (95% CI)- Moderate	z-score mean (95% CI)	z-score SD
All	2043.0	2117	6.6 (5.5; 8.0)	21.9 (19.8; 24.0)	-0.9 (-1.0; -0.8)	1.58
Age group: 00-05 mo	203.6	215	2.7 (1.1; 6.3)	7.5 (4.2; 13.1)	0.6 (0.3; 0.8)	1.65
Age group: 06-11 mo	191.6	201	2.4 (0.9; 6.6)	6.5 (3.6; 11.4)	-0.1 (-0.3; 0.1)	1.47
Age group: 12-23 mo	493.3	512	5.0 (3.3; 7.5)	19.5 (15.8; 23.9)	-0.9 (-1.0; -0.7)	1.40
Age group: 24-35 mo	463.6	478	7.3 (5.0; 10.7)	23.3 (19.2; 28.0)	-1.1 (-1.3; -0.9)	1.56
Age group: 36-47 mo	406.2	420	9.6 (6.7; 13.5)	30.3 (25.3; 35.8)	-1.5 (-1.6; -1.3)	1.29
Age group: 48-59 mo	284.7	291	9.9 (6.5; 14.7)	32.0 (25.9; 38.9)	-1.3 (-1.5; -1.1)	1.47
Sex: Female	991.1	1027	5.4 (4.0; 7.2)	20.0 (17.3; 23.1)	-0.7 (-0.9; -0.6)	1.59
Sex: Male	1051.9	1090	7.8 (6.2; 10.0)	23.6 (20.7; 26.7)	-1.0 (-1.1; -0.9)	1.56
Age + sex: 00-05 mo.Female	106.7	104	1.8 (0.4; 8.1)	5.8 (2.2; 14.7)	0.7 (0.3; 1.1)	1.62
Age + sex: 06-11 mo.Female	89.2	97	3.0 (0.8; 11.3)	4.2 (1.4; 11.5)	0.2 (-0.1; 0.5)	1.32
Age + sex: 12-23 mo.Female	233.5	247	3.6 (1.8; 7.2)	16.1 (11.5; 22.1)	-0.7 (-0.9; -0.5)	1.37
Age + sex: 24-35 mo.Female	217.9	225	4.5 (2.3; 8.5)	22.7 (16.9; 29.7)	-0.9 (-1.2; -0.6)	1.62
Age + sex: 36-47 mo.Female	188.3	206	8.7 (5.0; 14.8)	25.9 (19.5; 33.5)	-1.4 (-1.6; -1.2)	1.28
Age + sex: 48-59 mo.Female	155.5	148	8.9 (4.9; 15.6)	34.0 (25.3; 43.9)	-1.3 (-1.6; -1.1)	1.42
Age + sex: 00-05 mo.Male	96.9	111	3.7 (1.3; 10.2)	9.3 (4.5; 18.4)	0.4 (0.1; 0.8)	1.67
Age + sex: 06-11 mo.Male	102.4	104	1.9 (0.4; 8.4)	8.5 (4.2; 16.6)	-0.4 (-0.7; 0.0)	1.55
Age + sex: 12-23 mo.Male	259.8	265	6.2 (3.6; 10.4)	22.5 (17.1; 29.1)	-1.1 (-1.2; -0.9)	1.41
Age + sex: 24-35 mo.Male	245.7	253	9.8 (6.1; 15.4)	23.9 (18.3; 30.5)	-1.2 (-1.4; -1.0)	1.50
Age + sex: 36-47 mo.Male	218.0	214	10.4 (6.5; 16.2)	34.2 (27.0; 42.2)	-1.5 (-1.7; -1.3)	1.30
Age + sex: 48-59 mo.Male	129.1	143	11.1 (6.2; 19.0)	29.7 (21.8; 39.2)	-1.3 (-1.5; -1.0)	1.53
Area: Central Gonja	87.1	86	2.5 (0.9; 7.0)	13.8 (7.9; 23.1)	-0.7 (-1.1; -0.3)	1.66
Area: East Gonja	102.0	101	7.4 (3.5; 14.7)	19.7 (12.8; 29.2)	-0.4 (-0.7; -0.1)	1.61
Area: East Mamprusi	183.1	198	6.3 (2.8; 13.5)	20.8 (13.6; 30.3)	-1.1 (-1.3; -0.8)	1.40
Area: Gushegu	188.5	183	7.4 (3.8; 14.0)	25.7 (18.5; 34.4)	-1.0 (-1.3; -0.7)	1.59
Area: Karaga	111.0	134	15.2 (9.2; 24.1)	31.4 (22.3; 42.2)	-1.2 (-1.6; -0.8)	1.90
Area: Kpandai	114.4	125	3.6 (1.5; 8.6)	16.1 (9.9; 25.0)	-0.6 (-0.9; -0.3)	1.60
Area: Kumbungu	263.9	276	7.5 (4.5; 12.4)	24.3 (18.8; 30.9)	-1.1 (-1.3; -0.9)	1.42
Area: Nanumba North	138.8	127	4.5 (1.8; 10.7)	15.5 (9.8; 23.6)	-0.7 (-1.0; -0.4)	1.52
Area: Nanumba South	114.9	120	7.4 (3.7; 14.4)	24.3 (16.7; 34.1)	-1.2 (-1.4; -0.9)	1.32
Area: North Gonja	38.0	46	11.6 (2.7; 37.9)	22.8 (8.4; 48.6)	-0.7 (-1.6; 0.2)	2.10
Area: Saboba	127.1	136	4.0 (1.6; 9.3)	13.4 (8.4; 20.7)	-0.7 (-1.0; -0.5)	1.30
Area: Sagnarigu	161.1	153	2.2 (0.7; 6.6)	25.2 (18.5; 33.4)	-0.8 (-1.0; -0.5)	1.46
Area: Savelugu-Nanton	103.9	114	13.8 (8.5; 21.7)	32.2 (23.8; 41.9)	-1.4 (-1.7; -1.1)	1.56
Area: Tamale Metro	130.6	132	10.0 (5.7; 16.9)	21.9 (15.3; 30.4)	-1.0 (-1.3; -0.7)	1.64
Area: Tolon	129.6	132	3.2 (1.2; 8.3)	16.7 (11.2; 24.1)	-0.6 (-0.8; -0.3)	1.54
Area: West Gonja	49.0	54	0.7 (0.1; 4.7)	21.9 (9.3; 43.3)	0.0 (-0.9; 1.0)	2.22

Table 10: HL.9-c: Prevalence of underweight children under five years of age by sex, age group and district

Group	Weighted N	Unweighted N	-3SD (95% CI)- Severe	-2SD (95% CI) - Moderate	z-score mean (95% CI)	z-score SD
All	2071.5	2150	6.5 (5.3; 7.8)	24.9 (22.8; 27.2)	-1.2 (-1.3; -1.2)	1.24
Age group: 00-05 mo	208.3	218	4.6 (2.3; 9.2)	11.7 (7.4; 17.9)	-0.4 (-0.6; -0.2)	1.46
Age group: 06-11 mo	194.4	205	5.9 (3.1; 10.8)	25.0 (18.7; 32.5)	-1.2 (-1.4; -1.0)	1.30
Age group: 12-23 mo	502.1	523	6.0 (4.1; 8.9)	29.9 (25.6; 34.7)	-1.4 (-1.5; -1.3)	1.16
Age group: 24-35 mo	462.6	479	7.6 (5.2; 10.9)	26.1 (21.7; 30.9)	-1.3 (-1.4; -1.1)	1.29
Age group: 36-47 mo	410.8	427	7.3 (4.9; 11.0)	26.0 (21.3; 31.4)	-1.4 (-1.5; -1.3)	1.07
Age group: 48-59 mo	293.3	298	5.9 (3.3; 10.2)	22.3 (16.9; 28.8)	-1.3 (-1.5; -1.2)	1.09
Sex: Female	1005.6	1044	6.5 (4.9; 8.5)	22.0 (19.1; 25.1)	-1.1 (-1.2; -1.0)	1.24
Sex: Male	1065.9	1106	6.4 (4.9; 8.3)	27.7 (24.7; 30.9)	-1.3 (-1.4; -1.2)	1.23
Age + sex: 00-05 mo.Female	107.3	105	2.1 (0.5; 7.8)	6.3 (2.6; 14.5)	-0.3 (-0.5; 0.0)	1.28
Age + sex: 06-11 mo.Female	91.3	100	3.4 (1.0; 11.1)	17.6 (10.5; 28.1)	-0.8 (-1.1; -0.6)	1.25
Age + sex: 12-23 mo.Female	237.8	252	5.3 (3.0; 9.1)	23.4 (18.0; 29.9)	-1.2 (-1.3; -1.0)	1.18
Age + sex: 24-35 mo.Female	217.9	225	8.9 (5.2; 14.7)	23.1 (17.3; 30.1)	-1.2 (-1.5; -1.0)	1.31
Age + sex: 36-47 mo.Female	191.3	210	8.4 (4.8; 14.3)	27.5 (20.8; 35.3)	-1.3 (-1.5; -1.2)	1.14
Age + sex: 48-59 mo.Female	160.1	152	7.4 (3.5; 14.9)	24.9 (17.1; 34.8)	-1.4 (-1.6; -1.2)	1.04
Age + sex: 00-05 mo.Male	100.9	113	7.3 (3.2; 15.9)	17.4 (10.4; 27.8)	-0.6 (-0.9; -0.2)	1.62
Age + sex: 06-11 mo.Male	103.1	105	8.1 (3.9; 16.2)	31.5 (22.2; 42.5)	-1.5 (-1.7; -1.2)	1.27
Age + sex: 12-23 mo.Male	264.3	271	6.7 (3.8; 11.4)	35.8 (29.4; 42.7)	-1.6 (-1.7; -1.4)	1.10
Age + sex: 24-35 mo.Male	244.7	254	6.4 (3.8; 10.7)	28.8 (22.7; 35.6)	-1.3 (-1.5; -1.2)	1.28
Age + sex: 36-47 mo.Male	219.5	217	6.4 (3.4; 11.6)	24.8 (18.6; 32.3)	-1.4 (-1.6; -1.3)	1.01
Age + sex: 48-59 mo.Male	133.2	146	4.0 (1.7; 9.2)	19.2 (12.8; 27.7)	-1.2 (-1.4; -0.9)	1.14
Area: Central Gonja	89.5	88	5.0 (2.3; 10.5)	20.1 (12.7; 30.5)	-1.1 (-1.4; -0.8)	1.28
Area: East Gonja	103.5	103	5.9 (2.6; 12.8)	20.3 (13.4; 29.4)	-1.0 (-1.2; -0.7)	1.23
Area: East Mamprusi	184.3	199	7.7 (3.6; 15.8)	28.5 (20.1; 38.7)	-1.4 (-1.6; -1.2)	1.14
Area: Gushegu	190.4	187	5.4 (2.6; 11.2)	28.1 (20.7; 36.9)	-1.2 (-1.5; -1.0)	1.22
Area: Karaga	113.8	135	12.4 (6.8; 21.6)	30.0 (21.0; 40.8)	-1.6 (-1.9; -1.3)	1.46
Area: Kpandai	117.7	130	3.4 (1.3; 8.3)	12.5 (7.5; 20.3)	-0.8 (-1.0; -0.6)	1.20
Area: Kumbungu	268.1	281	8.3 (5.3; 13.0)	26.2 (20.7; 32.6)	-1.4 (-1.6; -1.2)	1.19
Area: Nanumba North	140.7	128	1.3 (0.3; 5.1)	20.1 (13.4; 29.1)	-1.0 (-1.2; -0.8)	1.08
Area: Nanumba South	116.1	122	8.3 (4.3; 15.5)	30.7 (22.0; 41.0)	-1.6 (-1.8; -1.4)	1.05
Area: North Gonja	36.3	46	7.1 (3.2; 15.4)	26.3 (12.0; 48.3)	-0.9 (-1.6; -0.3)	1.52
Area: Saboba	129.8	138	4.0 (1.5; 10.0)	16.0 (10.6; 23.4)	-0.9 (-1.2; -0.6)	1.37
Area: Sagnarigu	162.0	154	6.9 (3.7; 12.7)	34.9 (27.3; 43.4)	-1.3 (-1.5; -1.1)	1.18
Area: Savelugu-Nanton	107.9	118	6.5 (3.1; 13.1)	28.0 (20.4; 37.1)	-1.3 (-1.5; -1.1)	1.23
Area: Tamale Metro	131.3	133	8.2 (4.5; 14.7)	22.8 (16.1; 31.2)	-1.4 (-1.6; -1.1)	1.24
Area: Tolon	129.6	132	2.5 (0.9; 6.6)	23.2 (16.6; 31.4)	-1.2 (-1.3; -1.0)	1.03
Area: West Gonja	50.6	56	13.5 (4.4; 34.8)	21.9 (9.5; 42.7)	-0.9 (-1.6; -0.2)	1.67

Table 11: HL.9-b: Prevalence of wasted children under five years of age by sex, age group and district

Group	Weighted N	Unweighted N	-3SD (95% CI) - Severe	-2SD (95% CI) - Moderate	+2SD (95% CI)	+3SD (95% CI)	z-score mean (95% CI)	z-score SD
All	2078.3	2156	5.0 (4.0; 6.2)	18.1 (16.2; 20.1)	0.6 (0.3; 1.1)	0.2 (0.1; 0.7)	-1.0 (-1.1; -1.0)	1.16
Age group: 00-05 mo	234.8	249	9.3 (6.0; 14.3)	26.1 (20.2; 32.9)	1.3 (0.4; 3.8)	0.6 (0.1; 4.2)	-1.1 (-1.3; -0.9)	1.43
Age group: 06-11 mo	195.1	204	10.8 (6.9; 6.6)	31.3 (24.6; 38.8)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-1.5 (-1.7; -1.3)	1.15
Age group: 12-23 mo	493.8	512	6.9 (4.6; 10.1)	29.1 (24.7; 34.0)	1.3 (0.5; 3.4)	0.4 (0.1; 2.7)	-1.3 (-1.4; -1.2)	1.24
Age group: 24-35 mo	455.3	472	4.3 (2.6; 7.2)	14.5 (11.0; 18.8)	0.1 (0.0; 0.8)	0.1 (0.0; 0.8)	-1.0 (-1.1; -0.9)	1.06
Age group: 36-47 mo	407.1	420	0.8 (0.2; 2.8)	7.0 (4.4; 10.8)	0.2 (0.0; 1.3)	0.2 (0.0; 1.3)	-0.7 (-0.8; -0.6)	0.98
Age group: 48-59 mo	287.1	292	1.1 (0.4; 3.3)	4.9 (2.9; 8.1)	0.6 (0.2; 2.5)	0.0 (0.0; 0.0)	-0.8 (-0.9; -0.6)	0.92
Sex: Female	1014.4	1048	3.8 (2.7; 5.4)	15.8 (13.4; 18.6)	0.5 (0.2; 1.3)	0.2 (0.1; 0.9)	-1.0 (-1.0; -0.9)	1.10
Sex: Male	1063.9	1108	6.1 (4.6; 7.9)	20.2 (17.6; 23.2)	0.7 (0.3; 1.5)	0.2 (0.0; 1.1)	-1.1 (-1.2; -1.0)	1.20
Age + sex: 00-05 mo.Female	120.5	117	7.9 (4.3; 14.2)	23.2 (15.6; 33.0)	2.0 (0.6; 7.1)	1.2 (0.2; 8.0)	-0.9 (-1.2; -0.6)	1.44
Age + sex: 06-11 mo.Female	92.4	100	5.0 (1.6; 14.6)	28.0 (19.0; 39.3)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-1.3 (-1.5; -1.1)	1.07
Age + sex: 12-23 mo.Female	233.5	247	4.7 (2.5; 8.8)	24.7 (18.9; 31.6)	1.0 (0.2; 4.3)	0.0 (0.0; 0.0)	-1.1 (-1.3; -1.0)	1.22
Age + sex: 24-35 mo.Female	217.9	225	5.1 (2.5; 10.4)	14.5 (9.5; 21.4)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-1.0 (-1.2; -0.9)	1.01
Age + sex: 36-47 mo.Female	190.2	208	0.3 (0.0; 2.1)	5.7 (3.0; 10.6)	0.4 (0.1; 2.8)	0.4 (0.1; 2.8)	-0.7 (-0.8; -0.5)	0.96
Age + sex: 48-59 mo.Female	158.3	148	1.2 (0.3; 4.8)	3.7 (1.6; 8.4)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-0.8 (-1.0; -0.7)	0.81
Age + sex: 00-05 mo.Male	114.4	132	0.8 (5.8; 19.4)	29.1 (20.7; 39.1)	0.4 (0.1; 3.0)	0.0 (0.0; 0.0)	-1.2 (-1.5; -1.0)	1.40
Age + sex: 06-11 mo.Male	102.7	104	16.1 (9.9; 5.0)	34.1 (24.9; 44.7)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-1.7 (-1.9; -1.4)	1.19
Age + sex: 12-23 mo.Male	260.3	265	8.8 (5.3; 14.1)	33.0 (26.7; 40.1)	1.6 (0.5; 5.3)	0.7 (0.1; 5.0)	-1.5 (-1.6; -1.3)	1.25
Age + sex: 24-35 mo.Male	237.4	247	3.6 (1.8; 7.1)	14.5 (10.1; 20.3)	0.2 (0.0; 1.6)	0.2 (0.0; 1.6)	-1.0 (-1.2; -0.9)	1.11
Age + sex: 36-47 mo.Male	216.8	212	1.3 (0.3; 5.3)	8.1 (4.4; 14.5)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-0.8 (-1.0; -0.6)	0.99
Age + sex: 48-59 mo.Male	128.8	144	1.0 (0.2; 5.4)	6.3 (3.2; 11.9)	1.4 (0.3; 5.4)	0.0 (0.0; 0.0)	-0.6 (-0.8; -0.5)	1.04
Area: Central Gonja	89.6	89	1.3 (0.3; 5.3)	8.7 (4.3; 16.9)	1.0 (0.1; 6.5)	0.0 (0.0; 0.0)	-1.0 (-1.2; -0.8)	0.93
Area: East Gonja	103.5	103	6.3 (2.9; 12.9)	17.3 (11.1; 26.1)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-1.2 (-1.4; -0.9)	1.09
Area: East Mamprusi	185.2	200	4.8 (2.2; 10.3)	18.6 (11.8; 28.1)	0.3 (0.0; 2.0)	0.3 (0.0; 2.0)	-1.2 (-1.4; -1.0)	1.17
Area: Gushegu	191.1	184	2.1 (0.6; 7.0)	10.3 (6.1; 16.8)	2.0 (0.6; 6.5)	0.0 (0.0; 0.0)	-0.9 (-1.1; -0.7)	1.10
Area: Karaga	115.9	136	7.6 (3.6; 15.4)	24.3 (16.2; 34.8)	0.4 (0.1; 3.0)	0.0 (0.0; 0.0)	-1.1 (-1.3; -0.9)	1.20
Area: Kpandai	115.0	125	3.8 (1.5; 9.4)	11.9 (7.0; 19.7)	1.3 (0.2; 8.4)	1.3 (0.2; 8.4)	-0.6 (-0.9; -0.4)	1.27
Area: Kumbungu	269.7	281	5.1 (2.9; 8.9)	20.2 (15.3; 26.3)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-1.0 (-1.2; -0.9)	1.18
Area: Nanumba North	138.3	127	3.0 (1.0; 8.8)	15.8 (9.9; 24.2)	1.4 (0.2; 9.1)	1.4 (0.2; 9.1)	-0.9 (-1.1; -0.7)	1.12
Area: Nanumba South	114.1	119	4.0 (1.2; 12.6)	26.2 (17.7; 37.0)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-1.3 (-1.5; -1.0)	1.11
Area: North Gonja	43.7	57	1.3 (0.3; 5.4)	16.3 (6.3; 35.9)	1.1 (0.2; 7.9)	0.0 (0.0; 0.0)	-0.9 (-1.4; -0.5)	1.15
Area: Saboba	130.6	139	3.8 (1.5; 9.4)	12.8 (7.8; 20.3)	0.6 (0.1; 4.1)	0.6 (0.1; 4.1)	-0.9 (-1.1; -0.7)	1.12
Area: Sagnarigu	162.5	155	7.7 (4.2; 13.6)	27.5 (20.6; 35.6)	0.6 (0.1; 3.9)	0.0 (0.0; 0.0)	-1.3 (-1.5; -1.1)	1.15
Area: Savelugu-Nanton	104.7	115	7.0 (3.2; 14.5)	19.4 (12.9; 28.1)	0.7 (0.1; 4.7)	0.0 (0.0; 0.0)	-1.0 (-1.2; -0.7)	1.27
Area: Tamale Metro	131.7	135	4.9 (2.2; 10.6)	17.5 (11.5; 25.6)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-1.1 (-1.3; -0.9)	1.04
Area: Tolon	128.9	131	6.4 (3.2; 12.4)	20.1 (14.0; 28.0)	0.0 (0.0; 0.0)	0.0 (0.0; 0.0)	-1.2 (-1.4; -1.0)	1.12
	53.8	60	13.0 (4.3; 3.0)	17.8 (7.7; 35.8)	1.4 (0.2; 9.1)	0.0 (0.0; 0.0)	-1.2 (-1.7; -0.7)	1.41

RING 1.1.2.1: Percent (%) of households who state they are more financially secure (By Type of Household and District)

Table 12: Financial Security by type of HH and district

Financial Security by Type of Household						
		Type of household				Total
		Female headed	Male headed (Adult male only no adult female)	Male headed (Male and female adults)	Child headed (Age under 18, no adults)	
Household's Financial Security Status	Not Financially Secure	45	84	524	0	653
		29.2%	29.9%	31.2%	0.0%	30.9%
	Financially Secure	109	197	1156	1	1463
		70.8%	70.1%	68.8%	100.0%	69.1%
Total		154	281	1680	1	2116
		100.0%	100.0%	100.0%	100.0%	100.0%

Financial Security by District				
		Household's Financial Security Status		Total
		Not Financially Secure	Financially Secure	
District	Central Gonja	36	97	133
		27.1%	72.9%	100.0%
	East Gonja	46	105	151
		30.5%	69.5%	100.0%
	East Mamprusi	35	74	109
		32.1%	67.9%	100.0%
	Gushegu	74	101	175
		42.3%	57.7%	100.0%
	Karaga	17	107	124
		13.7%	86.3%	100.0%
	Kpandai	73	72	145
		50.3%	49.7%	100.0%
	Kumbungu	57	81	138
		41.3%	58.7%	100.0%
	Nanumba North	35	151	186
		18.8%	81.2%	100.0%
	Nanumba South	29	97	126
		23.0%	77.0%	100.0%
	North Gonja	42	89	131
		32.1%	67.9%	100.0%
	Saboba	68	97	165
		41.2%	58.8%	100.0%
	Sagnarigu	43	64	107
		40.2%	59.8%	100.0%
	Savelugu-Nanton	22	94	116
		19.0%	81.0%	100.0%
	Tamale Metro	35	91	126
		27.8%	72.2%	100.0%
	Tolon	10	90	100
		10.0%	90.0%	100.0%
	West Gonja	30	54	84
		35.7%	64.3%	100.0%
Total		652	1464	2116
		30.8%	69.2%	100.0%

RING 1.1.3.1: Percent (%) of target households benefiting from crop intervention reporting use of techniques to reduce post-harvest losses

Table 13: Post harvest reduction techniques by HH type and district

		Techniques used to reduce Post harvest losses	Total
		Use	
Type of household	Female headed	11	11
		100.0%	100.0%
	Male headed (Adult male only no adult female)	10	10
		100.0%	100.0%
	Male headed (Male and female adults)	144	144
Total		165	165
		100.0%	100.0%

		Techniques used to reduce losses during harvesting, immediately after harvesting and storage of soybeans							Total
		Use of Purdue Improved Cowpea Storage (PICS) bags	Use of improved mud silos	Use of ground tarpaulins	Storage on pallets	Timely harvesting, proper cleaning and drying	Use of sand box	Stored in jute sacks	
Type of HH	Female headed	6	4	0	0	0	1	0	11
		54.5%	36.4%	0.0%	0.0%	0.0%	9.1%	0.0%	100.0%
	Male headed (Adult male only no adult female)	9	0	1	0	0	0	0	10
		90.0%	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	Male headed (Male and female adults)	77	42	19	2	1	1	1	143
		53.8%	29.4%	13.3%	1.4%	0.7%	0.7%	0.7%	100.0%
Total		92	46	20	2	1	2	1	164
		56.1%	28.0%	12.2%	1.2%	.6%	1.2%	.6%	100.0%

		Techniques used to reduce losses during harvesting, immediately after harvesting and storage of soybeans							Total	
		Use of Purdue Improved Cowpea Storage (PICS) bags	Use of improved mud silos	Use of ground tarpaulins	Storage on pallets	Timely harvesting, proper cleaning and drying	Use of sand box	Stored in jute sacks		
District	Central Gonja	5	0	0	0	0	0	0	5	
		100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
	East Gonja	1	1	0	0	0	0	0	2	
		50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
	Gushegu	2	0	1	0	0	0	0	3	
		66.7%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	100.0%	
	Karaga	5	4	3	0	0	0	0	12	
		41.7%	33.3%	25.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
	Kpandai	9	2	2	0	0	0	0	13	
		69.2%	15.4%	15.4%	0.0%	0.0%	0.0%	0.0%	100.0%	
	Kumbungu	9	0	0	0	0	0	0	9	
		100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
	Nanumba North	5	9	3	0	0	0	0	17	
		29.4%	52.9%	17.6%	0.0%	0.0%	0.0%	0.0%	100.0%	
	Nanumba South	4	4	2	0	1	1	0	12	
		33.3%	33.3%	16.7%	0.0%	8.3%	8.3%	0.0%	100.0%	
	North Gonja	1	0	1	0	0	0	0	2	
		50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
	Saboba	14	2	1	0	0	0	0	17	
		82.4%	11.8%	5.9%	0.0%	0.0%	0.0%	0.0%	100.0%	
	Sagnarigu	3	0	0	0	0	0	0	3	
		100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
	Savelugu-Nanton	13	9	2	1	0	1	1	27	
		48.1%	33.3%	7.4%	3.7%	0.0%	3.7%	3.7%	100.0%	
	Tamale Metro	16	14	4	0	0	0	0	34	
		47.1%	41.2%	11.8%	0.0%	0.0%	0.0%	0.0%	100.0%	
	Tolon	6	1	1	1	0	0	0	9	
		66.7%	11.1%	11.1%	11.1%	0.0%	0.0%	0.0%	100.0%	
	West Gonja	0	0	0	0	0	0	0	0	
	Total		93	46	20	2	1	2	1	165
			56.4%	27.9%	12.1%	1.2%	.6%	1.2%	.6%	100.0%

RING 1.1.3.2: Percent (%) of target households reporting shorter lean season

Table 14: HHs reporting shorter lean season by HH type and district

		Period household had to adjust food intake, compared to same time last year, because there was no money to buy food						Total
		Much Shorter	Shorter	Remained the same	Longer	Much Longer	No Response/DK	
Type of household	Female headed	11	45	38	32	13	14	153
		7.2%	29.4%	24.8%	20.9%	8.5%	9.2%	100.0%
	Male headed (Adult male only no adult female)	18	62	122	39	15	26	282
		6.4%	22.0%	43.3%	13.8%	5.3%	9.2%	100.0%
	Male headed (Male and female adults)	187	563	458	269	129	74	1680
		11.1%	33.5%	27.3%	16.0%	7.7%	4.4%	100.0%
	Child headed (Age under 18, no adults)	0	0	1	0	0	0	1
		0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Total	216	670	619	340	157	114	2116	
	10.2%	31.7%	29.3%	16.1%	7.4%	5.4%	100.0%	

		Period household had to adjust food intake, compared to same time last year, because there was no money to buy food						Total
		Much Shorter	Shorter	Remained the same	Longer	Much Longer	No Response/DK	
District	Central Gonja	6	39	38	37	12	1	133
		4.5%	29.3%	28.6%	27.8%	9.0%	.8%	100.0%
	East Gonja	3	26	64	15	2	40	150
		2.0%	17.3%	42.7%	10.0%	1.3%	26.7%	100.0%
	East Mamprusi	24	22	10	37	16	0	109
		22.0%	20.2%	9.2%	33.9%	14.7%	0.0%	100.0%
	Gushiegu	20	54	44	20	30	7	175
		11.4%	30.9%	25.1%	11.4%	17.1%	4.0%	100.0%
	Karaga	15	56	35	7	8	3	124
		12.1%	45.2%	28.2%	5.6%	6.5%	2.4%	100.0%
	Kpandai	21	51	30	29	13	1	145
		14.5%	35.2%	20.7%	20.0%	9.0%	.7%	100.0%
	Kumbungu	19	28	58	17	7	9	138
		13.8%	20.3%	42.0%	12.3%	5.1%	6.5%	100.0%
	Nanumba North	8	72	72	16	11	6	185
		4.3%	38.9%	38.9%	8.6%	5.9%	3.2%	100.0%
	Nanumba South	17	25	13	43	15	12	125
		13.6%	20.0%	10.4%	34.4%	12.0%	9.6%	100.0%
	North Gonja	5	53	58	13	1	1	131
		3.8%	40.5%	44.3%	9.9%	.8%	.8%	100.0%
	Saboba	5	72	41	36	11	0	165
		3.0%	43.6%	24.8%	21.8%	6.7%	0.0%	100.0%
	Sagnarigu	13	37	20	18	7	12	107
		12.1%	34.6%	18.7%	16.8%	6.5%	11.2%	100.0%
	Savelugu-Nanton	13	39	34	13	4	13	116
		11.2%	33.6%	29.3%	11.2%	3.4%	11.2%	100.0%
	Tamale Metro	14	32	43	20	9	7	125
		11.2%	25.6%	34.4%	16.0%	7.2%	5.6%	100.0%
	Tolon	32	29	22	7	8	2	100
		32.0%	29.0%	22.0%	7.0%	8.0%	2.0%	100.0%
	West Gonja	0	34	37	11	1	0	83
		0.0%	41.0%	44.6%	13.3%	1.2%	0.0%	100.0%
Total		215	669	619	339	155	114	2111
		10.2%	31.7%	29.3%	16.1%	7.3%	5.4%	100.0%

Table 15: HHs reporting a reduction food consumption last year by HH type and district

Whether there were times in the last year HH reduced the quantity of food they eat By Type of Household		Yes	No	Refused	Total
Type of household					
Female headed		122	32	0	154
		79.2%	20.8%	0.0%	100.0%
	Male headed (Adult male only no adult female)	204	76	1	281
		72.6%	27.0%	.4%	100.0%
Male headed (Male and female adults)		1296	378	5	1679
		77.2%	22.5%	.3%	100.0%
Child headed (Age under 18, no adults)		1	0	0	1
		100.0%	0.0%	0.0%	100.0%
Total		1623	486	6	2115
		76.7%	23.0%	.3%	100.0%

Whether there were times in the last year HH reduced the quantity of food they eat by District		Yes	No	Refused	Total
District					
Central Gonja		100	33	0	133
		75.2%	24.8%	0.0%	100.0%
East Gonja		92	58	1	151
		60.9%	38.4%	.7%	100.0%
East Mamprusi		105	4	0	109
		96.3%	3.7%	0.0%	100.0%
Gushegu		153	22	0	175
		87.4%	12.6%	0.0%	100.0%
Karaga		111	13	0	124
		89.5%	10.5%	0.0%	100.0%
Kpandai		125	20	0	145
		86.2%	13.8%	0.0%	100.0%
Kumbungu		93	43	1	137
		67.9%	31.4%	.7%	100.0%
Nanumba North		114	72	0	186
		61.3%	38.7%	0.0%	100.0%
Nanumba South		99	24	3	126
		78.6%	19.0%	2.4%	100.0%
North Gonja		108	23	0	131
		82.4%	17.6%	0.0%	100.0%
Saboba		142	23	0	165
		86.1%	13.9%	0.0%	100.0%
Sagnarigu		81	26	0	107
		75.7%	24.3%	0.0%	100.0%
Savelugu-Nanton		76	40	0	116
		65.5%	34.5%	0.0%	100.0%
Tamale Metro		86	40	0	126
		68.3%	31.7%	0.0%	100.0%
Tolon		64	36	0	100
		64.0%	36.0%	0.0%	100.0%
West Gonja		74	10	0	84
		88.1%	11.9%	0.0%	100.0%
Total		1623	487	5	2115
		76.7%	23.0%	.2%	100.0%

Table 16: Number of months HH adjusted food intake by district

		Number of months adjusted food intake last year						Total
		1	2	3	4	5	6	
District	Central Gonja	6	39	38	37	12	1	133
		4.5%	29.3%	28.6%	27.8%	9.0%	.8%	100.0%
	East Gonja	3	26	64	15	2	40	150
		2.0%	17.3%	42.7%	10.0%	1.3%	26.7%	100.0%
	East Mamprusi	24	22	10	37	16	0	109
		22.0%	20.2%	9.2%	33.9%	14.7%	0.0%	100.0%
	Gushegu	20	54	44	20	30	7	175
		11.4%	30.9%	25.1%	11.4%	17.1%	4.0%	100.0%
	Karaga	15	56	35	7	8	3	124
		12.1%	45.2%	28.2%	5.6%	6.5%	2.4%	100.0%
	Kpandai	21	51	30	29	13	1	145
		14.5%	35.2%	20.7%	20.0%	9.0%	.7%	100.0%
	Kumbungu	19	28	58	17	7	9	138
		13.8%	20.3%	42.0%	12.3%	5.1%	6.5%	100.0%
	Nanumba North	8	72	72	16	11	6	185
		4.3%	38.9%	38.9%	8.6%	5.9%	3.2%	100.0%
	Nanumba South	17	25	13	43	15	12	125
		13.6%	20.0%	10.4%	34.4%	12.0%	9.6%	100.0%
	North Gonja	5	53	58	13	1	1	131
		3.8%	40.5%	44.3%	9.9%	.8%	.8%	100.0%
	Saboba	5	72	41	36	11	0	165
		3.0%	43.6%	24.8%	21.8%	6.7%	0.0%	100.0%
	Sagnarigu	13	37	20	18	7	12	107
		12.1%	34.6%	18.7%	16.8%	6.5%	11.2%	100.0%
	Savelugu-Nanton	13	39	34	13	4	13	116
		11.2%	33.6%	29.3%	11.2%	3.4%	11.2%	100.0%
	Tamale Metro	14	32	43	20	9	7	125
		11.2%	25.6%	34.4%	16.0%	7.2%	5.6%	100.0%
	Tolon	32	29	22	7	8	2	100
		32.0%	29.0%	22.0%	7.0%	8.0%	2.0%	100.0%
	West Gonja	0	34	37	11	1	0	83
		0.0%	41.0%	44.6%	13.3%	1.2%	0.0%	100.0%
Total		215	669	619	339	155	114	2111
		10.2%	31.7%	29.3%	16.1%	7.3%	5.4%	100.0%

RING 1.1.3.6: Percent (%) of targeted households who have increased their income through RING supported activities

Table 17: Change in household income as a result of RING by HH type and district

		Change in household income as a result of ring				Total
		Remained the same	increased/more diversified	Decreased	Don't Know/Can't Tell	
Type of household	Female headed	30	115	3	6	154
		19.5%	74.7%	1.9%	3.9%	100.0%
	Male headed (Adult male only no adult female)	55	215	0	12	282
		19.5%	76.2%	0.0%	4.3%	100.0%
	Male headed (Male and female adults)	356	1280	21	23	1680
		21.2%	76.2%	1.3%	1.4%	100.0%
	Child headed (Age under 18, no adults)	2	0	0	0	2
		100.0%	0.0%	0.0%	0.0%	100.0%
Total		443	1610	24	41	2118
		20.9%	76.0%	1.1%	1.9%	100.0%

		Change in household income as a result of ring				Total
		Remained the same	increased/more diversified	Decreased	Don't Know/Can't Tell	
District	Central Gonja	10	121	0	2	133
		7.5%	91.0%	0.0%	1.5%	100.0%
	East Gonja	32	116	0	2	150
		21.3%	77.3%	0.0%	1.3%	100.0%
	East Mamprusi	27	79	0	3	109
		24.8%	72.5%	0.0%	2.8%	100.0%
	Gushegu	44	124	1	7	176
		25.0%	70.5%	.6%	4.0%	100.0%
	Karaga	9	114	0	1	124
		7.3%	91.9%	0.0%	.8%	100.0%
	Kpandai	42	89	10	4	145
		29.0%	61.4%	6.9%	2.8%	100.0%
	Kumbungu	43	81	6	8	138
		31.2%	58.7%	4.3%	5.8%	100.0%
	Nanumba North	53	130	2	0	185
		28.6%	70.3%	1.1%	0.0%	100.0%
	Nanumba South	24	96	0	6	126
		19.0%	76.2%	0.0%	4.8%	100.0%
	North Gonja	25	104	1	2	132
		18.9%	78.8%	.8%	1.5%	100.0%
	Saboba	26	138	0	1	165
		15.8%	83.6%	0.0%	.6%	100.0%
	Sagnarigu	19	85	0	3	107
		17.8%	79.4%	0.0%	2.8%	100.0%
	Savelugu-Nanton	11	103	1	1	116
		9.5%	88.8%	.9%	.9%	100.0%
	Tamale Metro	23	102	1	1	127
		18.1%	80.3%	.8%	.8%	100.0%
	Tolon	23	74	3	0	100
		23.0%	74.0%	3.0%	0.0%	100.0%
	West Gonja	31	53	0	0	84
		36.9%	63.1%	0.0%	0.0%	100.0%
Total	442	1609	25	41	2117	
	20.9%	76.0%	1.2%	1.9%	100.0%	

1.1.3.2: % of target households reporting shorter lean season

Table 18: HHs reporting shorter lean period by HH type and district

		Period household had to adjust food intake, compared to same time last year, because there was no money to buy food						Total
		Much Shorter	Shorter	Remained the same	Longer	Much Longer	No Response/DK	
Type of household	Female headed	11	45	38	32	13	14	153
		7.2%	29.4%	24.8%	20.9%	8.5%	9.2%	100.0%
	Male headed (Adult male only no adult female)	18	62	122	39	15	26	282
		6.4%	22.0%	43.3%	13.8%	5.3%	9.2%	100.0%
	Male headed (Male and female adults)	187	563	458	269	129	74	1680
		11.1%	33.5%	27.3%	16.0%	7.7%	4.4%	100.0%
	Child headed (Age under 18, no adults)	0	0	1	0	0	0	1
		0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Total		216	670	619	340	157	114	2116
		10.2%	31.7%	29.3%	16.1%	7.4%	5.4%	100.0%

		Period household had to adjust food intake, compared to same time last year, because there was no money to buy food						Total
		Much Shorter	Shorter	Remained the same	Longer	Much Longer	No Response/DK	
District	Central Gonja	6	39	38	37	12	1	133
		4.5%	29.3%	28.6%	27.8%	9.0%	.8%	100.0%
	East Gonja	3	26	64	15	2	40	150
		2.0%	17.3%	42.7%	10.0%	1.3%	26.7%	100.0%
	East Mamprusi	24	22	10	37	16	0	109
		22.0%	20.2%	9.2%	33.9%	14.7%	0.0%	100.0%
	Gushegu	20	54	44	20	30	7	175
		11.4%	30.9%	25.1%	11.4%	17.1%	4.0%	100.0%
	Karaga	15	56	35	7	8	3	124
		12.1%	45.2%	28.2%	5.6%	6.5%	2.4%	100.0%
	Kpandai	21	51	30	29	13	1	145
		14.5%	35.2%	20.7%	20.0%	9.0%	.7%	100.0%
	Kumbungu	19	28	58	17	7	9	138
		13.8%	20.3%	42.0%	12.3%	5.1%	6.5%	100.0%
	Nanumba North	8	72	72	16	11	6	185
		4.3%	38.9%	38.9%	8.6%	5.9%	3.2%	100.0%
	Nanumba South	17	25	13	43	15	12	125
		13.6%	20.0%	10.4%	34.4%	12.0%	9.6%	100.0%
	North Gonja	5	53	58	13	1	1	131
		3.8%	40.5%	44.3%	9.9%	.8%	.8%	100.0%
	Saboba	5	72	41	36	11	0	165
		3.0%	43.6%	24.8%	21.8%	6.7%	0.0%	100.0%
	Sagnarigu	13	37	20	18	7	12	107
		12.1%	34.6%	18.7%	16.8%	6.5%	11.2%	100.0%
	Savelugu-Nanton	13	39	34	13	4	13	116
		11.2%	33.6%	29.3%	11.2%	3.4%	11.2%	100.0%
	Tamale Metro	14	32	43	20	9	7	125
		11.2%	25.6%	34.4%	16.0%	7.2%	5.6%	100.0%
	Tolon	32	29	22	7	8	2	100
		32.0%	29.0%	22.0%	7.0%	8.0%	2.0%	100.0%
	West Gonja	0	34	37	11	1	0	83
		0.0%	41.0%	44.6%	13.3%	1.2%	0.0%	100.0%
Total		215	669	619	339	155	114	2111
		10.2%	31.7%	29.3%	16.1%	7.3%	5.4%	100.0%

RING 1.2.1: Percent (%) of households adopting improved nutrition practices

Table 19: Percentage of HHs reporting improved nutrition practices by HH type and district

		Improved Nutritional Practices	Total
Type of household	Female headed	62	62
		100.0%	100.0%
	Male headed (Adult male only no adult female)	148	148
		100.0%	100.0%
	Male headed (Male and female adults)	950	950
		100.0%	100.0%
	Child headed (Age under 18, no adults)	0	0
Total		1160	1160
		100.0%	100.0%

		Improved nutritional practices	Total
		Improved Nutritional Practices	
District	Central Gonja	52	52
		100.0%	100.0%
	East Gonja	72	72
		100.0%	100.0%
	East Mamprusi	84	84
		100.0%	100.0%
	Gushegu	87	87
		100.0%	100.0%
	Karaga	68	68
		100.0%	100.0%
	Kpandai	70	70
		100.0%	100.0%
	Kumbungu	111	111
		100.0%	100.0%
	Nanumba North	100	100
		100.0%	100.0%
	Nanumba South	61	61
		100.0%	100.0%
	North Gonja	38	38
		100.0%	100.0%
	Saboba	83	83
		100.0%	100.0%
	Sagnarigu	75	75
		100.0%	100.0%
	Savelugu-Nanton	64	64
		100.0%	100.0%
	Tamale Metro	78	78
		100.0%	100.0%
	Tolon	72	72
		100.0%	100.0%
	West Gonja	45	45
		100.0%	100.0%
Total		1160	1160
		100.0%	100.0%

Table 20: Number of nutrition practices adopted by HH type and district

Numbr_of_practices_Rec * Type of household					
Numbr_of_practices_Rec					
Type of household	N	Mean	Median	Minimum	Maximum
Female headed	62	8.70	9.00	2.00	13.00
Male headed (Adult male only no adult female)	148	8.89	9.00	3.00	13.00
Male headed (Male and female adults)	950	9.76	10.00	2.00	13.00
Child headed (Age under 18, no adults)		10.00	10.00	10.00	10.00
Total	1160	9.59	10.00	2.00	13.00

Numbr_of_practices_Rec * District					
Numbr_of_practices_Rec					
District	N	Mean	Median	Minimum	Maximum
Central Gonja	52	9.9384	10.00	6.00	13.00
East Gonja	72	9.10	9.00	2.00	13.00
East Mamprusi	84	10.66	10.81	8.00	13.00
Gushegu	87	8.34	8.97	3.00	13.00
Karaga	68	9.14	9.00	5.00	12.00
Kpandai	70	9.52	10.00	3.00	12.00
Kumbungu	111	9.63	10.00	6.00	12.00
Nanumba North	100	9.31	10.00	2.00	13.00
Nanumba South	61	9.18	10.00	2.00	13.00
North Gonja	38	9.19	9.95	3.00	13.00
Saboba	83	11.21	11.00	8.00	13.00
Sagnarigu	75	10.01	10.00	5.00	13.00
Savelugu-Nanton	64	9.57	9.47	5.00	13.00
Tamale Metro	78	9.54	9.34	6.00	13.00
Tolon	72	9.25	10.00	4.00	12.00
West Gonja	45	9.72	10.00	4.00	13.00
Total	1160	9.59	10.00	2.00	13.00

RING 1.2.1.1: Percent (%) of respondents in target communities knowledgeable of appropriate infant and young child feeding practices

Table 21: Knowledge of appropriate IYCF practices by HH type and district

Type of household * IYCF knowledge			
		IYCF Knowledge	Total
		Knowledgeable	
Type of household	Female headed	14	14
		100.0%	100.0%
	Male headed (Adult male only no adult female)	32	32
		100.0%	100.0%
	Male headed (Male and female adults)	277	277
		100.0%	100.0%
	Child headed (Age under 18, no adults)	0	0
Total		323	323
		100.0%	100.0%

District * IYCF Knowledge			
		IYCF knowledge	Total
		Knowledgeable	
District	Central Gonja	12	12
		100.0%	100.0%
	East Gonja	16	16
		100.0%	100.0%
	East Mamprusi	36	36
		100.0%	100.0%
	Gushegu	20	20
		100.0%	100.0%
	Karaga	24	24
		100.0%	100.0%
	Kpandai	11	11
		100.0%	100.0%
	Kumbungu	49	49
		100.0%	100.0%
	Nanumba North	27	27
		100.0%	100.0%
	Nanumba South	9	9
		100.0%	100.0%
	North Gonja	2	2
		100.0%	100.0%
	Saboba	14	14
		100.0%	100.0%
	Sagnarigu	27	27
		100.0%	100.0%
	Savelugu-Nanton	17	17
		100.0%	100.0%
	Tamale Metro	25	25
		100.0%	100.0%
	Tolon	27	27
		100.0%	100.0%
	West Gonja	8	8
		100.0%	100.0%
Total		324	324
		100.0%	100.0%

1.2.1.2: Number of service delivery channels that mainstream appropriate nutrition messages throughout the community

Table 22: Number of service delivery channels reported to mainstream appropriate nutrition messages by HH type and district

mainstream_Service_Delivery * Type of household					
mainstream_Service_Delivery					
Type of household	N	Mean	Median	Minimum	Maximum
Female headed	154	5.39	5.00	1.00	13.00
Male headed (Adult male only no adult female)	281	6.32	6.00	1.00	13.00
Male headed (Male and female adults)	1679	5.31	5.00	1.00	14.00
Child headed (Age under 18, no adults)	2	2.24	2.21	2.00	3.00
Total	2116	5.45	5.00	1.00	14.00

mainstream_Service_Delivery * District					
Improved_Service_Delivery					
District	N	Mean	Median	Minimum	Maximum
Central Gonja	133	3.50	3.00	1.00	7.00
East Gonja	151	5.16	5.00	1.00	13.00
East Mamprusi	109	7.40	7.00	2.00	13.00
Gushegu	175	5.56	5.00	1.00	11.00
Karaga	124	5.30	5.00	1.00	12.00
Kpandai	145	2.77	2.00	1.00	8.00
Kumbungu	138	4.39	4.10	1.00	11.00
Nanumba North	186	5.65	5.00	1.00	13.00
Nanumba South	127	6.26	6.00	1.00	13.00
North Gonja	131	4.21	5.00	1.00	8.00
Saboba	165	7.11	7.00	1.00	13.00
Sagnarigu	107	7.23	7.00	1.00	14.00
Savelugu-Nanton	116	7.32	7.00	1.00	13.00
Tamale Metro	126	5.85	5.00	1.00	13.00
Tolon	100	5.61	6.00	1.00	12.00
West Gonja	84	4.25	5.00	1.00	9.00
Total	2116	5.45	5.00	1.00	14.00

HL.9.1-c: Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age (WRA)

Table 23: Women dietary diversity by district

# of Food groups	Freq	Percent
1	14	1.18
2	89	7.47
3	251	21.07
4	356	29.89
5	268	22.5
6	128	10.75
7	45	3.78
8	24	2.02
9	16	1.34
Mean WDD		4.26
Total	1,191	100

DDS DEFINED		
	Frequency	Percent
Diversified diet (5 or more food groups)	481	40.4
not diversified	711	59.6
Total	1192	100.0

		Diversified diet		not diversified		Total	
		Freq	Percent	Freq	Percent	Freq	Percent
District	Central Gonja	30	54.5	25	45.5	55	100.0
	East Gonja	35	47.3	39	52.7	74	100.0
	East Mamprusi	67	72.0	26	28.0	93	100.0
	Gushegu	39	41.1	56	58.9	95	100.0
	Karaga	52	69.3	23	30.7	75	100.0
	Kpandai	12	15.8	64	84.2	76	100.0
	Kumbungu	33	29.7	78	70.3	111	100.0
	Nanumba North	16	21.6	58	78.4	74	100.0
	Nanumba South	17	24.3	53	75.7	70	100.0
	North Gonja	14	28.6	35	71.4	49	100.0
	Saboba	38	46.3	44	53.7	82	100.0
	Sagnarigu	27	36.0	48	64.0	75	100.0
	Savelugu-Nanton	32	48.5	34	51.5	66	100.0
	Tamale Metro	23	28.8	57	71.3	80	100.0
	Tolon	26	35.6	47	64.4	73	100.0
	West Gonja	20	45.5	24	54.5	44	100.0
Total		481	40.4	711	59.6	1192	100.0

HL.9.1-a: Prevalence of children 6-23 months receiving a minimum acceptable diet

Table 24: Percentage of children who met minimum acceptable diet

Minimum acceptable diet (MAD)	Frequency	Percentage
Met MAD	56	64.37
Did not meet MAD	31	35.63
Total	87	100

Table 25: Minimum dietary diversity for children 6-23 months

Minimum dietary diversity (MAD)	Frequency	Percentage
Met MDD	383	95.51
Did not meet MDD	18	4.49
Total	401	100.0

HL.9.1-b: Prevalence of exclusive breastfeeding of children under six months of age

Table 26: Prevalence of exclusive breastfeeding of children under six months of age by HH type and district

		Other foods given to child before he/she was six months old				Total
		No food apart from breast milk (exclusively breastfed)	Other food & drinks (water, koko, infant milk etc)	Child less than 6 months	DK/NA	
Type of household	Female headed	42	16	4	0	62
		67.7%	25.8%	6.5%	0.0%	100.0%
	Male headed (Adult male only no adult female)	94	41	8	5	148
		63.5%	27.7%	5.4%	3.4%	100.0%
	Male headed (Male and female adults)	716	192	37	5	950
		75.4%	20.2%	3.9%	.5%	100.0%
Child headed (Age under 18, no adults)		0	0	0	0	0
Total		852	249	49	10	1160
		73.4%	21.5%	4.2%	.9%	100.0%

Exclusive breastfeeding by District						
		Other foods given to child before he/she was six months old				Total
		No food apart from breast milk (exclusively breastfed)	Other food & drinks (water, koko, infant milk etc)	Child less than 6 months	DK/NA	
District						
Central Gonja		40	8	2	2	52
		76.9%	15.4%	3.8%	3.8%	100.0%
East Gonja		55	11	4	2	72
		76.4%	15.3%	5.6%	2.8%	100.0%
East Mamprusi		76	2	5	0	83
		91.6%	2.4%	6.0%	0.0%	100.0%
Gushegu		58	25	3	1	87
		66.7%	28.7%	3.4%	1.1%	100.0%
Karaga		59	7	0	1	67
		88.1%	10.4%	0.0%	1.5%	100.0%
Kpandai		38	31	1	0	70
		54.3%	44.3%	1.4%	0.0%	100.0%
Kumbungu		84	17	10	0	111
		75.7%	15.3%	9.0%	0.0%	100.0%
Nanumba North		70	26	3	0	99
		70.7%	26.3%	3.0%	0.0%	100.0%
Nanumba South		43	14	3	1	61
		70.5%	23.0%	4.9%	1.6%	100.0%
North Gonja		24	12	2	0	38
		63.2%	31.6%	5.3%	0.0%	100.0%
Saboba		73	6	4	0	83
		88.0%	7.2%	4.8%	0.0%	100.0%
Sagnarigu		59	15	1	0	75
		78.7%	20.0%	1.3%	0.0%	100.0%
Savelugu-Nanton		48	13	1	2	64
		75.0%	20.3%	1.6%	3.1%	100.0%
Tamale Metro		55	19	4	0	78
		70.5%	24.4%	5.1%	0.0%	100.0%
Tolon		52	17	3	0	72
		72.2%	23.6%	4.2%	0.0%	100.0%
West Gonja		17	26	2	0	45
		37.8%	57.8%	4.4%	0.0%	100.0%
Total		851	249	48	9	1157
		73.6%	21.5%	4.1%	.8%	100.0%

HL.8.2-5: Percentage of households with soap and water at a handwashing station commonly used by family members

Table 27: Percentage of households with soap and water at a handwashing station commonly used by family members by HH type and district

		handwashing_at_toilet_Rec		Total
		Not available	Soap and running water Available	
Type of household	Female headed	5	22	27
		18.5%	81.5%	100.0%
	Male headed (Adult male only no adult female)	8	25	33
		24.2%	75.8%	100.0%
	Male headed (Male and female adults)	43	203	246
		17.5%	82.5%	100.0%
Total		56	250	306
		18.3%	81.7%	100.0%

		handwashing_at_toilet_Rec		Total
		Not available	Soap and running water available	
District	Central Gonja	0	21	21
		0.0%	100.0%	100.0%
	East Gonja	1	29	30
		3.3%	96.7%	100.0%
	East Mamprusi	2	10	12
		16.7%	83.3%	100.0%
	Gushegu	12	42	54
		22.2%	77.8%	100.0%
	Karaga	4	7	11
		36.4%	63.6%	100.0%
	Kpandai	1	35	36
		2.8%	97.2%	100.0%
	Kumbungu	1	1	2
		50.0%	50.0%	100.0%
	Nanumba North	16	39	55
		29.1%	70.9%	100.0%
	Nanumba South	3	3	6
		50.0%	50.0%	100.0%
	North Gonja	0	4	4
		0.0%	100.0%	100.0%
	Saboba	6	35	41
		14.6%	85.4%	100.0%
	Sagnarigu	0	1	1
		0.0%	100.0%	100.0%
	Savelugu-Nanton	7	18	25
		28.0%	72.0%	100.0%
	Tolon	0	2	2
		0.0%	100.0%	100.0%
	West Gonja	0	3	3
		0.0%	100.0%	100.0%
Total		53	250	303
		17.5%	82.5%	100.0%

Table 28: Availability of handwashing facilities by HH type and district

		Availability of handwashing facility		Total
		No handwashing facility	Handwashing facility available	
Type of household	Female headed	57	27	84
		67.90%	32.10%	100.00%
	Male headed (Adult male only no adult female)	63	33	96
		65.60%	34.40%	100.00%
	Male headed (Male and female adults)	444	249	693
		64.10%	35.90%	100.00%
Total		564	309	873
		64.60%	35.40%	100.00%

		Availability of handwashing facility		Total
		No handwashing facility	Handwashing facility available	
District	Central Gonja	45	21	66
		68.20%	31.90%	100.00%
	East Gonja	38	30	68
		55.90%	44.10%	100.00%
	East Mamprusi	80	12	92
		87.00%	13.00%	100.00%
	Gushegu	75	55	130
		57.70%	42.30%	100.00%
	Karaga	31	11	42
		73.80%	26.20%	100.00%
	Kpandai	31	36	67
		46.30%	53.70%	100.00%
	Kumbungu	18	1	19
		94.70%	5.30%	100.00%
	Nanumba North	65	59	124
		52.40%	47.60%	100.00%
	Nanumba South	13	6	19
		68.40%	31.60%	100.00%
	North Gonja	19	4	23
		82.60%	17.40%	100.00%
	Saboba	69	41	110
		62.70%	37.30%	100.00%
	Sagnarigu	8	1	9
		88.90%	11.10%	100.00%
	Savelugu-Nanton	28	26	54
		51.90%	48.10%	100.00%
	Tamale Metro	7	0	7
		100.00%	0.00%	100.00%
	Tolon	26	2	28
		92.90%	7.10%	100.00%
	West Gonja	12	3	15
		80.00%	20.00%	100.00%
Total		565	308	873
		64.70%	35.40%	100.00%

HL.8.2-6: Percentage of households in target areas practicing correct use of recommended household water treatment technologies

Table 29: Percentage of HHs practicing correct use of recommended HH water treatment technologies by HH type and district

		MakeWaterSafe		Total
		Incorrect use	Correct use	
Type of household	Female headed	0	41	41
		0.0%	100.0%	100.0%
	Male headed (Adult male only no adult female)	0	62	62
		0.0%	100.0%	100.0%
	Male headed (Male and female adults)	7	483	490
		1.4%	98.6%	100.0%
	Child headed (Age under 18, no adults)	0	2	2
		0.0%	100.0%	100.0%
	Total	7	588	595
		1.2%	98.8%	100.0%

		MakeWaterSafe		Total
		Incorrect use	Correct use	
District	Central Gonja	0	75	75
		0.0%	100.0%	100.0%
	East Gonja	0	46	46
		0.0%	100.0%	100.0%
	East Mamprusi	0	27	27
		0.0%	100.0%	100.0%
	Gushegu	0	46	46
		0.0%	100.0%	100.0%
	Karaga	2	52	54
		3.7%	96.3%	100.0%
	Kpandai	2	27	29
		6.9%	93.1%	100.0%
	Kumbungu	1	34	35
		2.9%	97.1%	100.0%
	Nanumba North	1	55	56
		1.8%	98.2%	100.0%
	Nanumba South	0	27	27
		0.0%	100.0%	100.0%
	North Gonja	1	21	22
		4.5%	95.5%	100.0%
	Saboba	0	26	26
		0.0%	100.0%	100.0%
	Sagnarigu	0	15	15
		0.0%	100.0%	100.0%
	Savelugu-Nanton	0	17	17
		0.0%	100.0%	100.0%
	Tamale Metro	0	57	57
		0.0%	100.0%	100.0%
	Tolon	0	42	42
		0.0%	100.0%	100.0%
	West Gonja	0	23	23
		0.0%	100.0%	100.0%

RING 3.1.8.1-2: Percent (%) of respondents who know any 3 critical times of hand washing

Table 30: Percentage of respondents who knows any 3 critical times of hand washing

		Knowledge of critical times of handwashing		Total
		Know less than 3	Know at least 3	
Type of household	Female headed	28	126	154
		18.20%	81.80%	100.00%
	Male headed (Adult male only no adult female)	72	209	281
		25.60%	74.40%	100.00%
	Male headed (Male and female adults)	270	1409	1679
		16.10%	83.90%	100.00%
	Child headed (Age under 18, no adults)	0	2	2
		0.00%	100.00%	100.00%
Total		370	1746	2116
		17.50%	82.50%	100.00%

		Knowledge of critical times of handwashing		Total
		Know less than 3	Know at least 3	
District	Central Gonja	32	101	133
		24.10%	75.90%	100.00%
	East Gonja	19	132	151
		12.60%	87.40%	100.00%
	East Mamprusi	1	107	108
		0.90%	99.10%	100.00%
	Gushegu	62	113	175
		35.40%	64.60%	100.00%
	Karaga	24	100	124
		19.40%	80.60%	100.00%
	Kpandai	30	115	145
		20.70%	79.30%	100.00%
	Kumbungu	11	127	138
		8.00%	92.00%	100.00%
	Nanumba North	28	158	186
		15.10%	84.90%	100.00%
	Nanumba South	26	101	127
		20.50%	79.50%	100.00%
	North Gonja	51	80	131
		38.90%	61.10%	100.00%
	Saboba	4	161	165
		2.40%	97.60%	100.00%
	Sagnarigu	9	98	107
		8.40%	91.60%	100.00%
	Savelugu-Nanton	15	101	116
		12.90%	87.10%	100.00%
	Tamale Metro	20	106	126
		15.90%	84.10%	100.00%
	Tolon	19	81	100
		19.00%	81.00%	100.00%
	West Gonja	20	65	85
		23.50%	76.50%	100.00%
Total		371	1746	2117
		17.50%	82.50%	100.00%

RING 1.3.1: Percent (%) of households reporting improvements in nutrition and livelihood services from local government

Table 31: Number of local government nutrition and livelihood services that recoded improvement by HH type and district

Improved_Service_Delivery	# of services	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
	Freq	160	195	247	279	298	248	202	121	122	110	77	35	23	1	2116
	Percent	7.5	9.2	11.7	13.2	14.1	11.7	9.5	5.7	5.8	5.2	3.6	1.6	1.1	0.1	100.0

Percent	
At least 1=	100.00%
At least 2=	92.50%
At least 3=	83.20%
At least 4=	71.60%
At least 5=	58.40%
At least 6=	44.30%

Numbr_Services_Seeing_Improvement * Type of household					
Numbr_Services_Seeing_Improvement					
Type of household	N	Mean	Median	Minimum	Maximum
Female headed	154	5.39	5.00	1.00	13.00
Male headed (Adult male only no adult female)	281	6.32	6.00	1.00	13.00
Male headed (Male and female adults)	1679	5.31	5.00	1.00	14.00
Child headed (Age under 18, no adults)	2	2.24	2.21	2.00	3.00
Total	2116	5.45	5.00	1.00	14.00

Numbr_Services_Seeing_Improvement * District					
Numbr_Services_Seeing_Improvement					
District	N	Mean	Median	Minimum	Maximum
Central Gonja	133	3.50	3.00	1.00	7.00
East Gonja	151	5.16	5.00	1.00	13.00
East Mamprusi	109	7.40	7.00	2.00	13.00
Gushegu	175	5.56	5.00	1.00	11.00
Karaga	124	5.30	5.00	1.00	12.00
Kpandai	145	2.77	2.00	1.00	8.00
Kumbungu	138	4.39	4.10	1.00	11.00
Nanumba North	186	5.65	5.00	1.00	13.00
Nanumba South	127	6.26	6.00	1.00	13.00
North Gonja	131	4.21	5.00	1.00	8.00
Saboba	165	7.11	7.00	1.00	13.00
Sagnarigu	107	7.23	7.00	1.00	14.00
Savelugu-Nanton	116	7.32	7.00	1.00	13.00
Tamale Metro	126	5.85	5.00	1.00	13.00
Tolon	100	5.61	6.00	1.00	12.00
West Gonja	84	4.25	5.00	1.00	9.00
Total	2116	5.45	5.00	1.00	14.00

Table 32: Percentage of respondents who reported seeing improvement in 6 or more services by HH type and district

Type of household	Services seeing improvements in the past 12 months		Total
	Mentions less than 6	Mentions 6 or more	
Female headed	88	66	154
	57.10%	42.90%	100.00%
Male headed (Adult male only no adult female)	122	159	281
	43.40%	56.60%	100.00%
Male headed (Male and female adults)	966	713	1679
	57.50%	42.50%	100.00%
Child headed (Age under 18, no adults)	2	0	2
	100.00%	0.00%	100.00%
Total	1178	938	2116
	55.70%	44.30%	100.00%

		Services seeing improvements in the past 12 months		Total
		Mentions less than 6	Mentions 6 or more	
District	Central Gonja	121	12	133
		91.00%	9.00%	100.00%
	East Gonja	99	52	151
		65.60%	34.40%	100.00%
	East Mamprusi	30	78	108
		27.80%	72.20%	100.00%
	Gushegu	88	87	175
		50.30%	49.70%	100.00%
	Karaga	76	48	124
		61.30%	38.70%	100.00%
	Kpandai	136	9	145
		93.80%	6.20%	100.00%
	Kumbungu	93	45	138
		67.40%	32.60%	100.00%
	Nanumba North	99	87	186
		53.20%	46.80%	100.00%
	Nanumba South	60	67	127
		47.20%	52.80%	100.00%
	North Gonja	77	54	131
		58.80%	41.20%	100.00%
	Saboba	56	109	165
		33.90%	66.10%	100.00%
	Sagnarigu	30	77	107
		28.00%	72.00%	100.00%
	Savelugu-Nanton	42	74	116
		36.20%	63.80%	100.00%
	Tamale Metro	65	61	126
		51.60%	48.40%	100.00%
	Tolon	45	55	100
		45.00%	55.00%	100.00%
	West Gonja	61	23	84
		72.60%	27.40%	100.00%
Total		1178	938	2116
		55.70%	44.30%	100.00%

RING 1.3.1.8: Percentage of core RING implementing departments that use community feedback to inform planning processes for their RING Annual Work Plans and Budgets and/or District Annual Action Plans

Information was collected as part of district level FGDs where participants from different departments were asked how they engage communities and use feedback during preparation of annual RING workplans. In all DAs the planning unit indicated they usually use information from the community action plans (CAPs). The CAP preparation process is driven by communities' members and facilitated by district assembly staff.

ANNEX IX: LIVELIHOOD INTERVENTIONS RESULTS - EBBS 2019

VILLAGE SAVINGS AND LOANS (VSLA) SPECIFIC RESULTS

Table 33: Sources of money for VSLA savings (multiple response)

Where do you get money to save in the VSLA?	% of respondents
Crop production	34.5%
Livestock	4.8%
Petty trading (Income from my small business)	47.1%
Income from my small ruminants	0%
Sale of Vegetable	6.7%
Small Grains	7.1%
Processing	23.8%
From my husband	11.2%
From other family members	5.4%
LEAP	2.0%
Other	18.4%

Table 34: Comparison of last year's and this year's income

How was your income this year compared to last year?	% of respondents
Better	53.3%
Same	10.6%
Worse	36.1%

Table 35: Uses of money from VSLA share out (multiple response)

What did you use your money for after the share out?	% of respondents
Buy food for my family	41.3%
Pay school fees for my children	20.9%
Pay health care related costs	20.2%
Start an income generating activity	11.3%
Buy animals for livestock rearing	4.2%
Buy new assets	5.6%
Construct or improve latrine	0.5%
Housing improvements	5.9%
Land improvements	11.7%
Buy farming inputs	28.8%

Table 36: Challenges encountered as a VSLA member (multiple response)

What challenges have you encountered as a VSLA member?	% of respondents
Lack of income to save	44.7%
Lack of time to attend meetings	7.2%
Difficulty in accessing loans	3.6%
Lack of support from husband	2.7%
Lack of support from family members	3.5%
Group dynamics	9.2%
Meetings keep too long	4.7%
No challenge encountered	48.6
Other	3.6

Table 37: Percentage of VSLA members who took VSLA loans, amount take as loan and what it was used for

Have you taken loans from your VSLA since you joined?	% of respondents	If Yes how much?	% of respondents	What did you use the loan for?	% of respondents
Yes	74.4%	GHS20-70	14.3%	Buy food for my family.	20.5%
No	25.6%	GHS70+-100	28.7%	Pay school fees for my children.	22.7%
		GHS100+-200	27.1%	Pay health care related costs.	29.3%
		GHS200+-300	10.1%	Start an income generating activity	19.0%
		GHS300+-400	8.2%	Buy animals for livestock rearing	1.1%
		GHS400+	11.5%	Buy new assets	1.3%
				Construct or improve latrine	0.2%
				Housing improvements	2.5%
				Land improvements	5.6%
				Buy farming inputs	18.8%

Table 38: Percentage of VSLA members who will continue to be VSLA members after the current cycle ended

Will you continue to be a member of this VSLA after this cycle of savings?	% of respondents
Yes	99.3%
No	0.7%

SMALL RUMINANTS SPECIFIC RESULTS

Figure 9: Whether respondent was rearing small ruminants for the first time

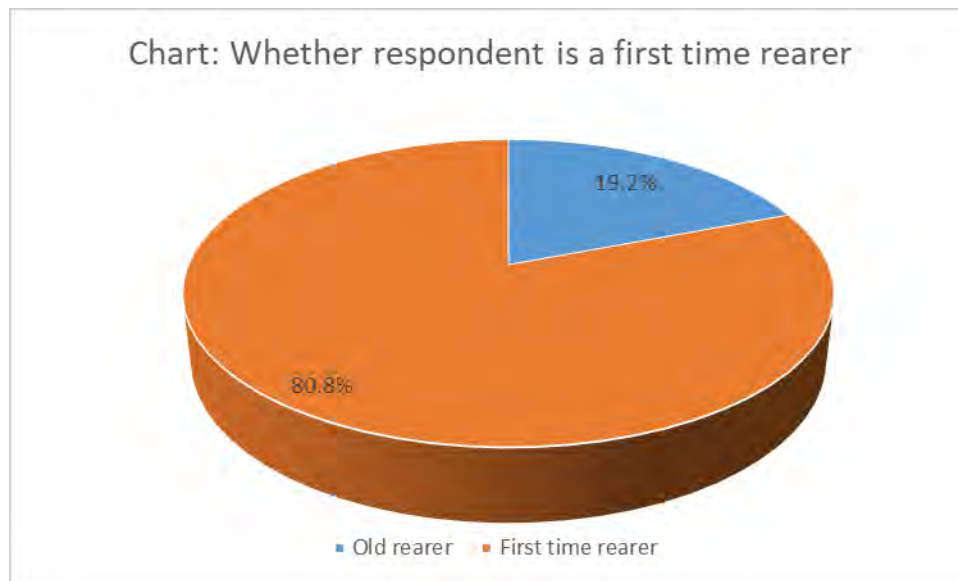


Table 39: District level results for # of small ruminants received, births and deaths # missing, sold and amount generated from sale

Districts	# of respondents	# of ruminants Received	# of births	# of deaths	# missing or stolen	# slaughtered for sacrifice	# sold	Amount generated (GHS)
Central Gonja	38	113	129	97	5	3	51	4,295.00
East Gonja	15	45	5	8	0	0	0	0
East Mamprusi	2	6	0	4	0	0	1	0
Gushegu	23	65	57	44	1	0	28	3,480.00
Karaga	67	206	192	109	19	0	34	5,304.00
Kpandai	61	181	81	39	2	1	0	0
Kumbungu	3	9	4	23	0	0	3	0
Nanumba North	113	334	335	294	30	5	37	3,400.00
Nanumba South	41	123	88	117	4	9	30	4,180.00
North Gonja	12	36	14	16	0	0	2	20.00
Saboba	56	160	312	160	10	2	92	14,065.00
Sagnerigu	24	80	54	62	7	0	22	1,560.00
Savelugu	84	249	231	146	7	1	63	6,972.00
Tamale Metro	11	60	81	51	4	1	15	1,850
Tolon	66	198	286	145	8	1	73	8,935.00
West Gonja	15	45	30	42	0	0	2	350.00

Table 40: Number of small ruminants currently available by district

District	N	Mean	Median	Minimum	Maximum	Sum (# currently available)
Central Gonja	38	2.19	1.49	0	10	83
East Gonja	15	2.79	3.00	1	4	41
East Mamprusi	2	2.46	2.00	1	6	5
Gushegu	23	2.22	2.00	0	5	52
Karaga	67	3.45	3.00	1	7	231
Kpandai	61	3.71	3.00	0	7	227
Kumbungu	3	3.33	3.92	0	9	11
Nanumba North	113	2.67	2.00	0	8	300
Nanumba South	41	1.23	0.00	0	9	50
North Gonja	12	2.59	3.00	0	4	32
Saboba	56	3.62	3.00	0	14	203
Sagnarigu	24	2.13	2.00	0	4	50
Savelugu-Nanton	84	3.26	3.00	0	10	275
Tamale Metro	11	2.95	3.00	0	7	32
Tolon	66	4.48	4.00	0	13	296
West Gonja	15	2.64	2.00	0	12	39
Total	631	3.05	3.00	0	14	1925

Table 41: Small Ruminants Management - # sick and # reported

Districts	# of sick animals	# of sickness reported
Central Gonja	22	20
East Gonja	6	6
East Mamprusi	1	1
Gushegu	16	12
Karaga	21	18
Kpandai	10	10
Kumbungu	1	2
Nanumba North	75	70
Nanumba South	29	16
North Gonja	7	4
Saboba	23	22
Sagnarigu	11	10
Savelugu	38	34
Tamale Metro	8	6
Tolon	42	42
West Gonja	11	11

Table 42: Whether respondent households have sold animals to date by district

Have you sold any of your animals to date?				
District		sold animals?		Total
		No	Yes	
Central Gonja		20	18	38
		52.6%	47.4%	100.0%
East Gonja		14	1	15
		93.3%	6.7%	100.0%
East Mamprusi		1	1	2
		50.0%	50.0%	100.0%
Gushegu		6	17	23
		26.1%	73.9%	100.0%
Karaga		39	28	67
		58.2%	41.8%	100.0%
Kpandai		61	0	61
		100.0%	0.0%	100.0%
Kumbungu		2	1	3
		66.7%	33.3%	100.0%
Nanumba North		85	27	112
		75.9%	24.1%	100.0%
Nanumba South		24	16	40
		60.0%	40.0%	100.0%
North Gonja		12	1	13
		92.3%	7.7%	100.0%
Saboba		21	35	56
		37.5%	62.5%	100.0%
Sagnarigu		14	9	23
		60.9%	39.1%	100.0%
Savelugu-Nanton		59	25	84
		70.2%	29.8%	100.0%
Tamale Metro		5	5	10
		50.0%	50.0%	100.0%
Tolon		28	38	66
		42.4%	57.6%	100.0%
West Gonja		14	1	15
		93.3%	6.7%	100.0%
Total		405	223	628
		64.5%	35.5%	100.0%

Table 43: Number of small ruminants sold by district

Number of animals (ruminants) sold						
no_ruminants_sold						
District	N	Mean	Median	Minimum	Maximum	Sum
Central Gonja	18	3.10	3.00	1	7	54
East Mamprusi	2	2.00	2.08	1	6	3
Gushegu	17	1.56	2.00	1	2	27
Karaga	28	1.19	1.00	1	3	34
Kpandai		1.00	1.00	1	1	
Kumbungu	1	1.63	1.95	1	3	2
Nanumba North	32	1.20	1.00	1	2	38
Nanumba South	16	1.74	1.75	1	4	29
North Gonja	1	2.00	2.00	2	2	1
Saboba	35	2.49	2.00	1	6	88
Sagnarigu	12	1.89	1.00	1	4	22
Savelugu-Nanton	26	2.42	1.00	1	10	64
Tamale Metro	5	1.90	1.50	1	5	10
Tolon	37	1.94	2.00	1	5	72
West Gonja	1	2.00	2.00	2	2	2
Total	232	1.92	1.00	1	10	447

Table 44: Amount generated from small ruminant sale by district

Amount generated from sale of ruminants						
District	N	Mean	Median	Minimum	Maximum	Sum
Central Gonja	18	304.58	250.00	70	700	5351
East Mamprusi	1	156.67	229.03	20	300	229
Gushiegu	17	226.62	250.00	55	330	3903
Karaga	28	179.37	150.00	80	450	5038
Kpandai		150.00	150.00	150	150	55
Kumbungu	1	171.43	230.33	100	290	211
Nanumba North	27	143.24	110.30	50	450	3933
Nanumba South	16	243.37	200.00	85	530	3999
North Gonja	1	20.00	20.00	20	20	10
Saboba	35	356.32	330.00	70	850	12557
Sagnarigu	9	204.29	130.00	30	700	1859
Savelugu-Nanton	25	295.77	200.00	30	1200	7485
Tamale Metro	5	220.00	190.00	100	600	1179
Tolon	36	259.52	155.74	40	1000	9411
West Gonja	1	350.00	350.00	350	350	255
Total	222	249.52	200.00	20	1200	55476

Table 45: Reasons for selling small ruminants (multiple response)

Why ruminants were sold		
Response	Frequency	Percent
Animal was sick.	80	23.1
Animal was beyond reproduction age.	5	1.4
Buy food for my family.	72	20.8
Pay school fees for my children.	76	22.0
Pay health care related costs.	42	12.1
Start an income generating activity.	6	1.7
Buy different animals for livestock rearing.	12	3.5
Buy new assets (bicycle, etc.)	0	0.0
Construct or improve latrine	0	0.0
Housing improvements.	3	0.9
Land improvements.	10	2.9
Buy farming inputs	26	7.5
Knocked down by vehicle	3	0.9
Others (Please specify	11	3.2
Total	346	100

Figure 10: Material used for small ruminant pen construction

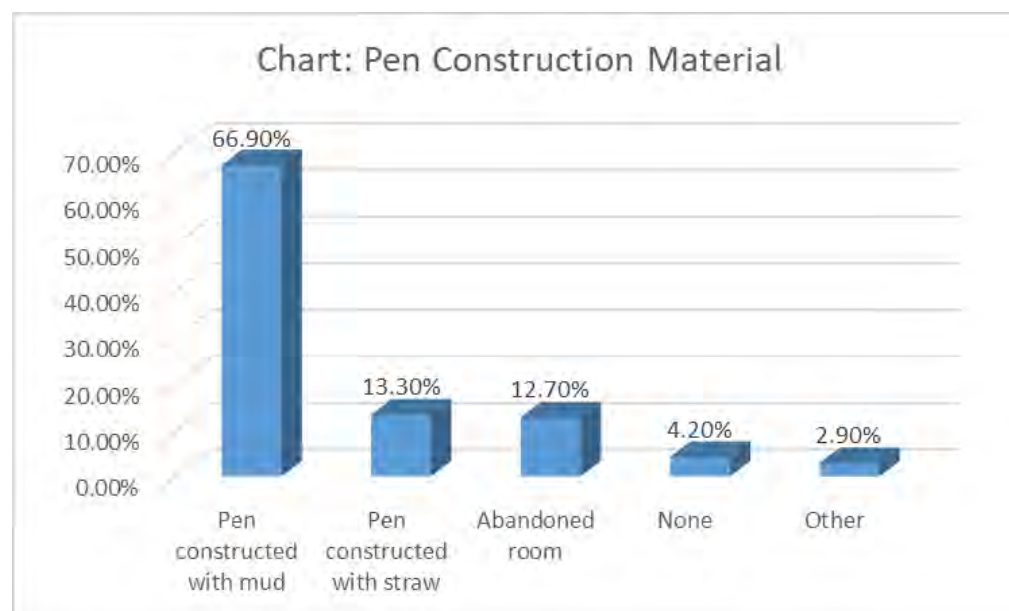


Table 46: Material used for small ruminant pen construction by district

Housing for ruminants							
District		housing_for_ruminant					Total
		Pen constructed with mud	Pen constructed with straw	Abandoned room	None	Other	
Central Gonja		25	7	5	1	0	38
		65.8%	18.4%	13.2%	2.6%	0.0%	100.0%
East Gonja		9	1	4	0	0	14
		64.3%	7.1%	28.6%	0.0%	0.0%	100.0%
East Mamprusi		2	0	0	0	0	2
		100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Gushegu		19	3	0	0	1	23
		82.6%	13.0%	0.0%	0.0%	4.3%	100.0%
Karaga		53	9	3	0	1	66
		80.3%	13.6%	4.5%	0.0%	1.5%	100.0%
Kpandai		33	7	16	1	3	60
		55.0%	11.7%	26.7%	1.7%	5.0%	100.0%
Kumbungu		2	1	0	0	0	3
		66.7%	33.3%	0.0%	0.0%	0.0%	100.0%
Nanumba North		61	35	10	1	6	113
		54.0%	31.0%	8.8%	.9%	5.3%	100.0%
Nanumba South		23	4	6	8	0	41
		56.1%	9.8%	14.6%	19.5%	0.0%	100.0%
North Gonja		9	2	1	0	0	12
		75.0%	16.7%	8.3%	0.0%	0.0%	100.0%
Saboba		22	1	28	4	1	56
		39.3%	1.8%	50.0%	7.1%	1.8%	100.0%
Sagnarigu		11	3	2	3	5	24
		45.8%	12.5%	8.3%	12.5%	20.8%	100.0%
Savelugu-Nanton		69	5	4	6	0	84
		82.1%	6.0%	4.8%	7.1%	0.0%	100.0%
Tamale Metro		6	3	1	1	0	11
		54.5%	27.3%	9.1%	9.1%	0.0%	100.0%
Tolon		63	1	1	1	0	66
		95.5%	1.5%	1.5%	1.5%	0.0%	100.0%
West Gonja		12	2	0	0	1	15
		80.0%	13.3%	0.0%	0.0%	6.7%	100.0%

Figure 11: What respondents who keep their animals in pens do with the animal dropping

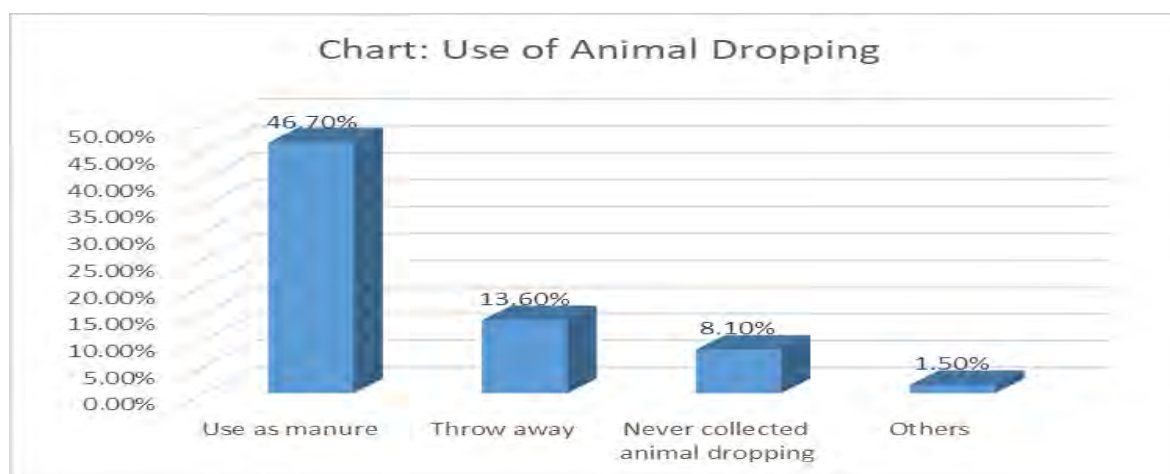


Table 47: What respondents who keep their animals in pens do with the animal dropping by district

Use for animal dropping		use_animal_dropping				Total
		Use as	Throw away	Never collected	Others	
District	Central	12	18	8	0	38
	Gonja	31.6%	47.4%	21.1%	0.0%	100.0%
	East Gonja	2	13	0	0	15
		13.3%	86.7%	0.0%	0.0%	100.0%
	East Mamprusi	1	1	0	0	2
		50.0%	50.0%	0.0%	0.0%	100.0%
	Gushegu	7	14	3	0	24
		29.2%	58.3%	12.5%	0.0%	100.0%
	Karaga	33	21	13	0	67
		49.3%	31.3%	19.4%	0.0%	100.0%
	Kpandai	11	50	0	1	62
		17.7%	80.6%	0.0%	1.6%	100.0%
	Kumbungu	3	0	0	0	3
		100.0%	0.0%	0.0%	0.0%	100.0%
	Nanumba	26	85	1	0	112
	North	23.2%	75.9%	.9%	0.0%	100.0%
	Nanumba	18	13	7	3	41
	South	43.9%	31.7%	17.1%	7.3%	100.0%
	North Gonja	2	10	0	0	12
		16.7%	83.3%	0.0%	0.0%	100.0%
	Saboba	35	15	5	1	56
		62.5%	26.8%	8.9%	1.8%	100.0%
	Sagnarigu	15	6	0	3	24
		62.5%	25.0%	0.0%	12.5%	100.0%
	Savelugu-Nanton	56	13	14	2	85
		65.9%	15.3%	16.5%	2.4%	100.0%
	Tamale	6	4	0	1	11
	Metro	54.5%	36.4%	0.0%	9.1%	100.0%
	Tolon	63	2	0	1	66
		95.5%	3.0%	0.0%	1.5%	100.0%
	West Gonja	4	11	0	0	15
		26.7%	73.3%	0.0%	0.0%	100.0%

SOY BEANS SPECIFIC REUSLT

Figure 12: Whether beneficiary was farming soybeans before RING

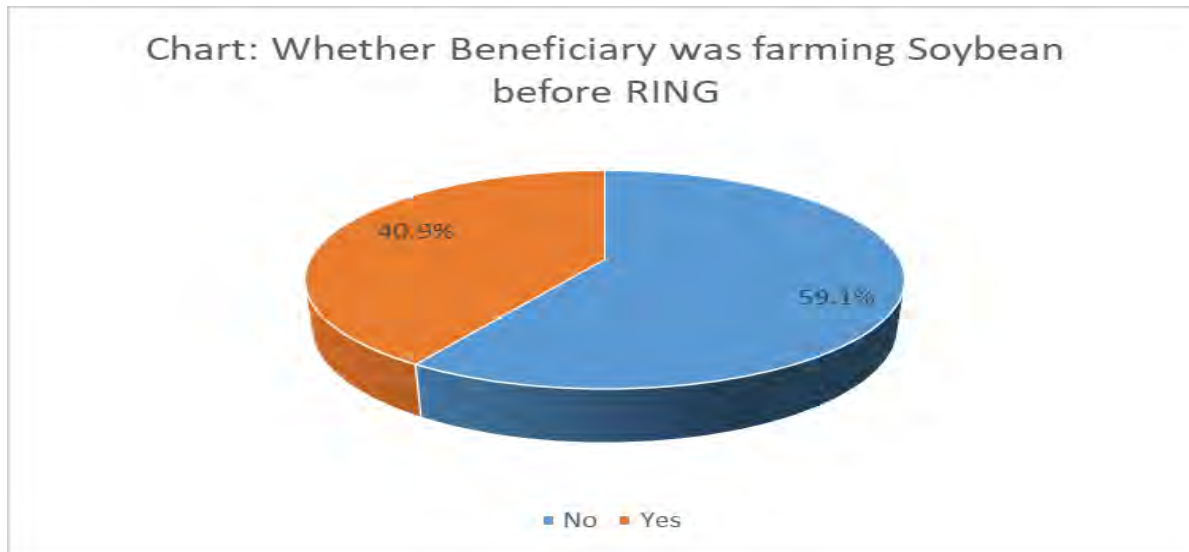


Figure 13: Source of land for soybeans cultivation

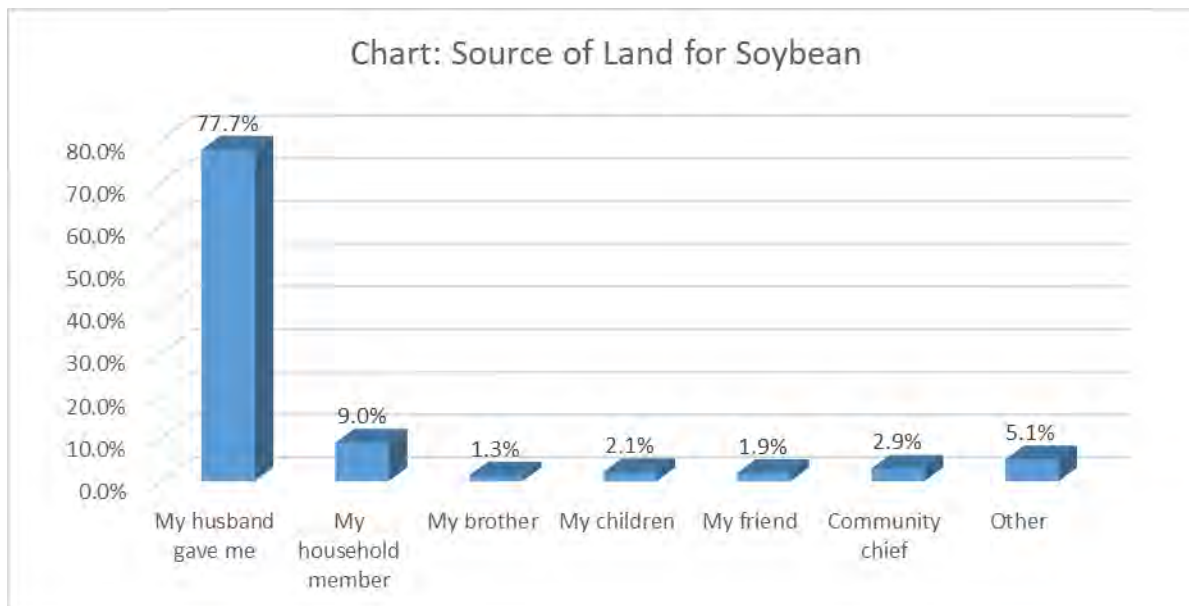


Table 48: District level results on access to soy beans cultivating before RING, access to land, land size and harvest

Districts	# of respondents	% of respondents who farm Soybean before RING	% of respondents who did not farm Soybean before RING	% of respondents who previously have access to land	% of respondents who did not have access to land before	Total # of acres of soybean farmed by respondent	Average # of acres farm per respondent	Quantity of soybean harvested in (kg)	Average quantity harvested by respondents in (kg) per district
Central Gonja	22	31.8%	68.2%	100%	0%	21.3	0.976	975.2	717.5
East Gonja	14	21.4%	78.6%	100%	0%	34.1	2.427		
East Mamprusi	0	0%	0%	0%	0%	-	-	-	-
Gushegu	10	33.3%	66.7%	91%	10%	9.3	0.968	1,630.7	1,587.9
Karaga	61	68.9%	31.1%	98.4%	1.6%	58.5	0.954	5,447.7	776.0
Kpandai	37	32.4%	67.6%	100%	0%	36.7	1.000	8,070.6	1,720.8
Kumbungu	43	11.6%	88.4%	100%	0%	33.4	0.777	1,802.9	384.6
Nanumba North	40	52.5%	47.5%	100%	0%	28.8	0.713	24,539.5	1,638.3
Nanumba South	34	23.5%	76.5%	97.1%	2.9%	60.4	1.785	3,316.4	481.1
North Gonja	3	33.3%	66.7%	100%	0%	3.1	1.200	5,220.7	5,125.0
Saboba	33	72.7%	27.3%	100%	0%	25.2	0.770	18,973.0	1,452.4
Sagnerigu	7	14.3%	85.7%	85.7%	14.3%	4.9	0.717	1,032.8	574.2
Savelugu	84	40.5%	59.5%	100%	0%	68.0	0.807	22,852.5	1,078.4
Tamale Metro	94	40.0%	60.0%	100%	0%	95.7	1.021	27,668.9	2,464.5
Tolon	26	38.5%	61.5%	100%	0%	27.4	1.057	1,862.0	1,138.6
West Gonja	2	50.0%	50.0%	100%	0%	3.1	1.357		

Table 49: Quantity of soybeans for HH consumption and sale (multiple response (MR))

Quantity of soybean set aside for home consumption	% of respondents (multiple response)	Have you sold part of your soybean?	% of respondents	Quantity of soybean sold	% of respondents (multiple response)
Less than 1 bag	79.5%	Yes	65.3%	1 bag	70.4%
1 bag and above	20.5%	No	34.7%	2 bags	15.6%
20 bowls and below	81.6%			3 bags and above	14.0%
Above 20 bowls	18.4%			20 bowls and below	87.3%
				Above 20 bowls	12.7%

Table 50: Post-harvest management and sales decision making

Have you stored some for later use?	% of respondents	Who made the decision to spend the income from the sale?	% of respondents
Yes	32.3%	Self	50.9%
No	67.7%	Husband	7.5%
		Husband and I	40.3%
		Other	1.3%

Table 51: Number of months respondents had soybeans for home use

How many months did you have soybean in your home for use?	% of respondents
1 month	6.0%
2 months	11.7%
3 months	20.7%
4 months	7.6%
5 months	10.4%
6 months	12.6%
7 months & above	30.9%

ORANGE FLESH SWEET POTATOES (OFSP) SPECIFIC RESULTS

Table 52: District level results on vines received & planted, quantity harvested, sold and amount earned

Districts	# of respondents	Quantity of vines planted (per district)	Quantity of vines received by beneficiaries in (kg)	Quantity of OFSP harvested by beneficiaries in (kg)	Average quantity harvested by beneficiaries per district in (kg)	Quantity of OFSP sold	Average quantity of OFSP sold by beneficiaries per district in (kg)	Amount earned from the sales of OFSP in (GHS)	Average amount earned by beneficiaries per district in (GHS)
Central Gonja	97	1,282,088	26,336.8	71,684.3	742.1	334.3	75.6	539.90	180.11
East Gonja	116	616,625	58,386.2	390,529.7	3,368.2	84.2	37.0	94.91	41.72
East Mamprusi	100	1,990,634	4,442.8	135,078.4	1,344.1	53.0	74.0	40.00	40.00
Gushegu	89	170,319	1,488.2	174,689.1	1,966.1	86.3	37.0	35.00	15.00
Karaga	124	44,406	5,387.1	115,375.1	933.5	53.2	37.0	71.92	50.00
Kpandai	59	53,536	2,542.3	291,044.7	4,916.9	0.0	0.0	0.00	0.00
Kumbungu	73	111,961	81,235.1	129,317.6	1,773.7	75.3	37.0	264.43	130.00
Nanumba North	110	641,739	3,956.7	104,897.7	953.3	9,726.9	111.0	2,411.52	125.24
Nanumba South	97	675,893	1,167.6	14,122.0	144.9	0.0	0.0	0.00	0.00
North Gonja	79	85,308	977.5	18,285.0	231.4	37.4	74.0	50.00	50.00
Saboba	107	2,143,526	4,378.6	135,203.9	1,263.6	0.0	0.0	0.00	0.00
Sagnerigu	75	86,246	6,351.7	18,485.3	247.8	875.5	74.0	531.30	45.30
Savelugu	56	169,332	2,015.2	24,911.3	443.5	160.0	116.4	93.71	61.25
Tamale Metro	105	294,050	5,064.8	83,135.4	92.0	1,938.6	74.0	1,075.00	115.26
Tolon	62	55,120	2,889.5	16,842.1	271.6	815.9	74.0	356.74	34.48
West Gonja	16	181,227	1,648.0	267,683.8	17,056.2	0.0	0.0	0.00	0.00

Table 53: Respondents who will continue OFSP cultivation after the projec

District * will_u_continue_ofsp Crosstabulation			
	will_u_continue_ofsp		Total
	No	Yes	
Central Gonja	1	11	12
	8.3%	91.7%	100.0%
East Gonja	1	13	14
	7.1%	92.9%	100.0%
East Mamprusi	0	13	13
	0.0%	100.0%	100.0%
Gushegu	1	15	16
	6.3%	93.8%	100.0%
Karaga	4	28	32
	12.5%	87.5%	100.0%
Kpandai	1	9	10
	10.0%	90.0%	100.0%
Kumbungu	0	4	4
	0.0%	100.0%	100.0%
Nanumba North	2	15	17
	11.8%	88.2%	100.0%
Nanumba South	0	3	3
	0.0%	100.0%	100.0%
Saboba	0	3	3
	0.0%	100.0%	100.0%
Sagnarigu	0	9	9
	0.0%	100.0%	100.0%
Savelugu-Nanton	2	7	9
	22.2%	77.8%	100.0%
Tamale Metro	2	14	16
	12.5%	87.5%	100.0%
Tolon	0	13	13
	0.0%	100.0%	100.0%
Total	14	157	171
	8.2%	91.8%	100.0%

Table 54: Sources of vines for those who want to continue OFSP cultivation after the project

Where respondents will get vines to continue OFSP after RING (Multiple response)		
	Frequency	Percent
Preserve vines from my farm for next season	41	26.2%
Buy from a vine seller in my community	30	19.3%
Take vines from my friends	28	17.6%
Source vines from agriculture extension officer	58	37.0%
Other means	34	21.8%
Total	158	

LEAFY GREEN VEGETABLE (LGV) SPECIFIC RESULTS

Table 55: Type of vegetables cultivated by LGV beneficiaries

Types of LGV grown	% of respondents
Ayoyo	88.6%
Biraa	91.5%
Aleefu	49.1%
Bean leaf	13.4%
Other	2.5%

Table 56: Months with access to LGVs for HH consumption and access to and running of drip irrigation system

How many months do you have access to vegetables for consumption?	% of respondents	Has your drip irrigation broken down?	% of respondents	Were you able to fix the equipment?	% of respondents	Does water run out during the dry season?	% of respondents
1 month	8.9%	Yes	47.7%	Yes	63.5%	Yes	37.0%
2 months	20.0%	No	52.3%	No	36.5%	No	63.0%
3 months	17.6%						
4 months	9.4%						
5 months	10.3%						
Other (6-12 months)	32.8%						

Table 57: Quantity (kg) of LGVs harvested by type of HH

LGV_Harvested_kg							
Type of household	N	Mean	Median	Minimum	Maximum	Sum	
Female headed	20	73.3290	27.4554	3.30	326.70	1470.04	
Male headed (Adult male only no adult female)	23	112.6173	29.0325	0.00	326.70	2548.99	
Male headed (Male and female adults)	278	76.8243	26.4000	0.00	660.00	21318.84	
Total	320	79.1357	26.4000	0.00	660.00	25337.87	

Table 58: Quantity (kg) of LGVs consumed at home by type of HH

LGV_for_home_kg							
Type of household	N	Mean	Median	Minimum	Maximum	Sum	
Female headed	20	35.2307	6.6000	0.00	326.70	706.28	
Male headed (Adult male only no adult female)	23	106.5825	16.7967	.66	326.70	2412.40	
Male headed (Male and female adults)	278	65.2184	9.9000	0.00	326.70	18098.18	
Total	320	66.2649	9.0356	0.00	326.70	21216.86	

Figure 14: Respondents who sold part of their LGV

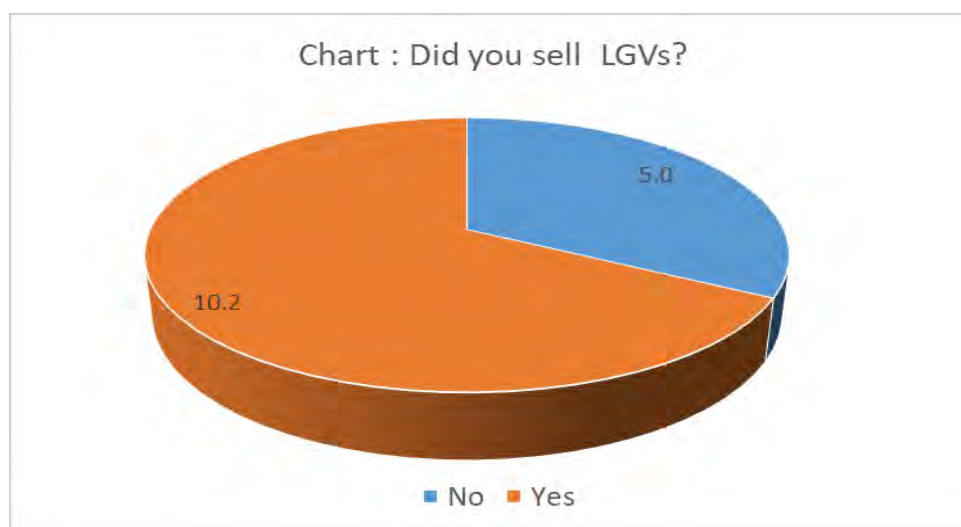


Table 59: Quantity (kg) of LGV sold by type of HH

LGV_Sold_kg						
Type of household	N	Mean	Median	Minimum	Maximum	Sum
Female headed	18	67.1696	20.4542	3.30	326.70	1190.40
Male headed (Adult male only no adult female)	9	69.1834	20.6483	3.30	326.70	624.64
Male headed (Male and female adults)	188	71.3451	22.3123	3.30	326.70	13432.15
Total	215	70.9102	20.4564	3.30	326.70	15247.19

Table 60: Uses of income from LGV sale

what money from sales of LGV is used for		
Use of money	Frequency	Percent
Buy food for my family	15	7.0
Pay school fees for my children	59	27.4
Pay health care related costs	34	16.0
Start an income generating activity	105	48.9
Buy animals for livestock rearing	2	1.0
Buy new assets (bicycle, etc.)	5	2.1
Construct or improve latrine	2	1.1
Housing improvements	7	3.3
Land improvements	9	4.1
Buy farming inputs; (Specify the inputs and cost)	21	10.0
Others	65	30.1
Total	215	100.0

Figure 15: Places respondents sold their LGV

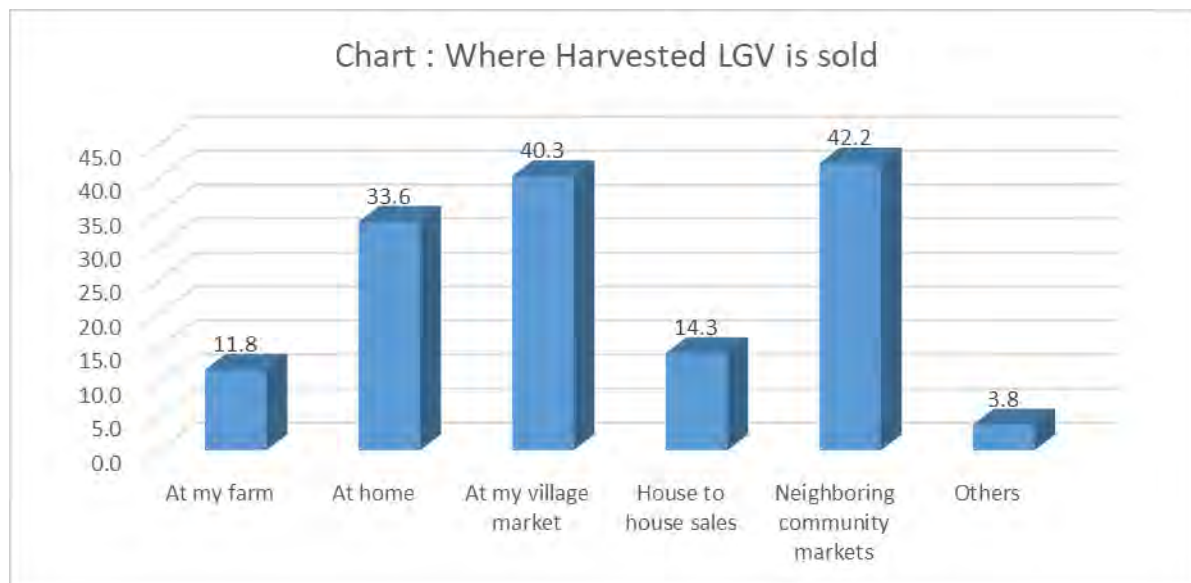
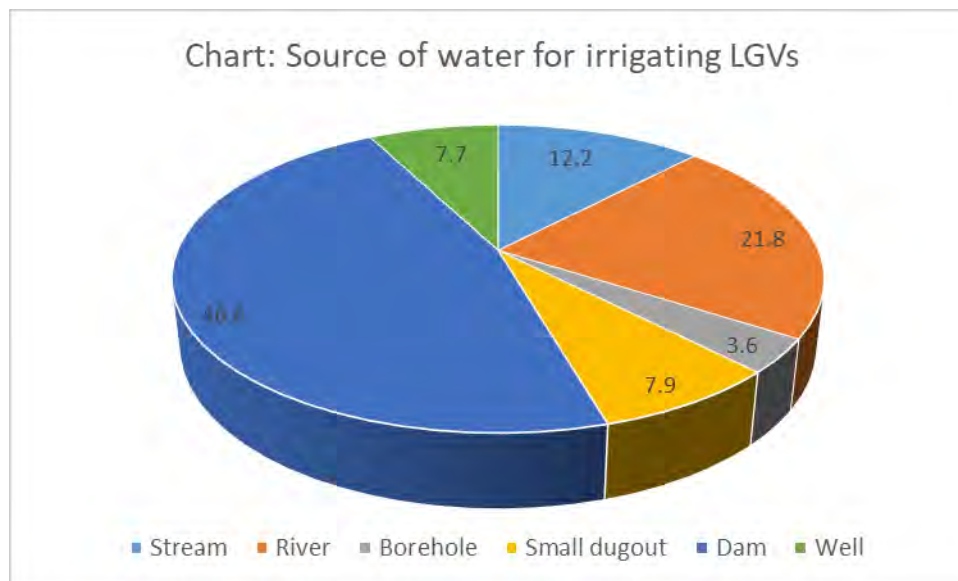


Figure 16: Source of water for irrigating LGVs



ANNEX X: DECISION MAKING ACROSS ALL INTERVENTIONS (COMPARISON OF 2017 BBS AND 2019 EBBS)

Table 61: Person who makes decision when it comes to taking VSLA loan

Who makes decisions when it comes to taking VSLA loan?	% of respondents (2017BBS)	% of respondents (2019EBBS)
Self	73%	78.9%
Husband	5%	4.2%
Husband and I	22%	15.0%
Other	0.1%	1.9%

Table 62: Person who makes decision when it comes of sale of small ruminants

Who makes decisions when it comes to the sales of your small ruminants?	% of respondents (2017BBS)	% of respondents (2019EBBS)
Self	44%	41.2%
Husband	18%	15.9%
Husband and I	37.5%	39.7%
Other	0.5%	3.3%

Table 63: Person who makes decision when it comes of sale of soy beans

Who makes decisions when it comes to the sales of your soy?	% of respondents (2017BBS)	% of respondents (2019EBBS)
Self	45%	55.4%
Husband	6.5%	6.7%
Husband and I	47.6%	36.1%
Other	0.9%	1.7%

Table 64: Person who makes decision on how to use the income earned from soy bean sale

Who made the decision on how to spend the income earned from Soy?	% of respondents (2017BBS)	% of respondents (2019EBBS)
Self	41%	50.9%
Husband	7.7%	7.5%
Husband and I	51%	40.3%
Other	0.3%	1.3%

Table 65: Person who makes decision when it comes of sale of LGV

Who makes decisions when it comes to the sales of your LGV?	% of respondents (2017BBS)	% of respondents (2019EBBS)
Self	75.4%	72.9%
Husband	3.4%	3.1%
Husband and I	16.0%	17.8%
Other	5.1%	6.3%

Table 66: Person who makes decision when it comes of sale of OFSP

Who made the decision on how to spend the income earned from OFSP?	% of respondents (2017BBS)	% of respondents (2019EBBS)
Self	58%	75.6%
Husband	1.8%	4.5%
Husband and I	38.4%	7.7%
Other	1.8%	12.2%

ANNEX XI: HOUSEHOLD INCOME SOURCES AND FINANCIAL SECURITY

Table 67: HH financial security and sources and changes in HH income

	Frequency	Percent
Whether household's income has changed as a result of RING intervention		
Remained the same	442	20.9%
Increased/ more diversified	1610	76.1%
Decreased	24	1.1%
DK/Cant tell	41	1.9%
Total	2116	100.0%
Whether household has participated in new income generating activities since participating in RING		
No	1358	64.1%
Yes	759	35.9%
Total	2116	100.0%
finance_secured_monthsago		
Much more secured	196	9.3%
More secured	1267	59.9%
No change	328	15.5%
Less secured	309	14.6%
Much less secured	17	.8%
Total	2116	100.0%
Sources of household income (Multiple response)		
Sale of crop produce	1389	65.6%
Sale of poultry	262	12.4%
Sale of livestock (small ruminant)	401	18.9%
Petty trading	957	45.2%
Remittances	63	3.0%
Shea Picking	1084	51.2%
Rice Parboiling	113	5.3%
Gift	81	3.8%
loan/share out from VSLA	661	31.2%
Total	2116	

Table 68: HH income sources as a result of RING, availability of additional income sources to purchase food, comparison of current income and that of last year and the management of surplus food

	Frequency	Percent
Whether respondent's household has additional income sources to purchase food if the need arises		
No	631	29.8%
Yes	1485	70.2%
Total	2116	100.0%
Income sources as a result of RING		
Sale of crop produce	68	14.1%
Sale of poultry	9	1.8%
Sale of livestock (small ruminant)	48	9.9%
Petty trading	76	15.9%
Remittances	3	.6%
Shea Picking	41	8.5%
Rice Parboiling	6	1.3%
Gift	0	0.0%
loan/share out from VSLA	148	30.9%
Bee keeping	1	.2%
Leafy green vegetable cultivation	31	6.5%
Hiring out equipments or tool	0	0.0%
Hiring out labour	9	1.8%
Other	206	43.2%
Total	478	100.0%
What best describes how respondents managed the surplus		
I sell all of my surplus immediately when it is ready	139	25.0%
I sell most of my surplus when it is ready and save a little to sell later	133	23.9%
I sell a little of my surplus when it is ready and save most to sell later	125	22.6%
I save all of my surplus to sell later	132	23.8%
Other	26	4.7%
Total	556	100.0%
Comparison between incomes of this year and that year		
Incomes for this year and last year were the same	53	9.5%
This year income was higher	266	47.9%
This year income was lower	180	32.5%
Cannot tell	38	6.8%
Others	18	3.3%
Total	556	100.0%
How income was spent		
Spend all of it immediately	172	30.9%
Spend most of it and save a little	178	32.1%
Save most of it spend a little	130	23.4%
Save all of it	14	2.5%
Other	62	11.2%
Total	556	100.0%

ANNEX XII: HOUSEHOLD RESILIENCE RELATED TO FOOD SECURITY

Table 69: Percentage of HHs that adjusted food intake because they did not have enough food, changes in period food intake was adjusted and availability of extra income to purchase food

	Frequency	percent
Whether there were times when respondent's household had to reduce the quantity of food they ate, or ate foods they would normally not eat because they did not have enough food or money to buy food		
Yes	1624	76.7%
No	486	23.0%
Refused	6	.3%
Total	2116	100.0%
Whether the period respondents' household had to adjust its food intake has become shorter, longer or remained the same		
Much shorter	216	10.2%
shorter	670	31.7%
Remained the same	620	29.3%
longer	339	16.0%
much longer	157	7.4%
No response/ DK	114	5.4%
Total	2116	100.0%
Whether respondent's household has additional income sources to purchase food if the need arises		
No	631	29.8%
Yes	1485	70.2%
Total	2116	100.0%
Other sources of income (Multiple Response)		
Sale of crop produce	788	53.0%
Sale of poultry	206	13.8%
Sale of livestock (small ruminant)	329	22.2%
Petty trading	682	45.9%
Remittances	32	2.2%
Shea Picking	821	55.3%
Rice Parboiling	99	6.7%
Gift	30	2.0%
loan/share out from VSLA	697	46.9%
Bee keeping	2	.2%
Leafy green vegetable cultivation	116	7.8%
Hiring out equipment or tool	11	.8%
Hiring out labour	91	6.1%
Other	322	21.6%
Total	1485	100.0%

Table 70: Number of months HHs adjusted food intake because they did not have enough food

Number of months respondent's household had to adjust food intake because you did not have enough food or money to buy food					
Type of household	N	Mean	Median	Minimum	Maximum
Female headed	124	3.64	3.00	1	72
Male headed (Adult male only no adult female)	204	3.34	3.00	1	9
Male headed (Male and female adults)	1339	3.45	3.00	1	36
Child headed (Age under 18, no adults)	1	11.00	11.00	11	11
Total	1668	3.46	3.00	1	72

U.S. Agency for International Development
1300 Pennsylvania Avenue, NW
Washington, DC 20523