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Resiliency through Wealth, Agriculture, and Nutrition in Karamoja (RWANU)

Annual Results Report
Fiscal Year 2014

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List of Acronyms

ACTED	Agency for Technical Cooperation and Development
ANC/PNC	Antenatal Care/Postnatal Care
ASCA	Accumulated Savings and Credit Association
BCC	Behavior Change Communication
CAG	Community Action Group
CAHW	Community Animal Health Worker
CCPP	Contagious Caprine Pleuro-pneumonia
CLTS	Community Led Total Sanitation
CMAM	Community Monitoring of Acute Malnutrition
CSB	Corn Soya Blend
CSC	Community Score Card
DFAP	Development Food Assistance Program
DRR	Disaster Risk Reduction
FaaB	Farming as a Business
FAO	Food and Agriculture Organization
FDP	Food Distribution Point
FEW	Field Extension Worker
FEWSNET	Famine Early Warning Systems Network
FMD	Foot and Mouth Disease
FMNR	Farmer Managed Natural Regeneration
FOG	Fixed Obligation Grant
FTG	Farmer Training Group
FY	Fiscal Year
GMP	Growth Monitoring and Promotion
HC	Health Center
HE	Health Educators
HHCG	Household Caregiver Groups
HICAP	Health Institution Capacity Assessment Process
HP	Health Promoters
HUMC	Health Unit Management Committee
IPM	Integrated Pest Management
IPTT	Indicator Performance Tracking Table
IR	Intermediate Result
IRC	International Rescue Committee
IYCF	Infant and Young Child Feeding
KALIP	Karamoja Livelihoods Program
KAPC	Knowledge, Attitude, Practice and Coverage
Km	kilometer
LM	Lead Mother
MCA	Male change agents
MCG	Mother Care Group
MCHN	Maternal Child Health and Nutrition
MoH	Ministry of Health

MOU	Memorandum of Understanding
MSI	Marie Stopes International
MT	Metric Ton
MUAC	Middle Upper Arm Circumference
NAADS	National Agriculture Advisory Service
NabuZARDI	Nabuin Zonal Agricultural Research and Development Institute
NARFA	Namalu RWANU Farmers Association
NASECO	Nalweyo Seed Company
NRM	Natural Resource Management
OCODI	Omaniman Community Development Initiative
PERSUAP	Pesticide Evaluation Review and Safe Use Action Plan
PHAST	Participatory Hygiene and Sanitation Transformation
PHH	Post-Harvest Handling
PLW	Pregnant and Lactating Women
PM2A	Preventing Malnutrition in Children Under 2 Approach
PPR	Peste des petitise ruminants
RWANU	Resiliency through Wealth Agriculture and Nutrition
SBC-SAP	Social and Behavior Change Strategy and Action Plan
SBCC	Social behavior change communication
SGP	Split Green Peas
SO	Strategic Objective
TIPs	Trials of Improved Practices
TUNADO	The Ugandan National Apiculture Development Organization
Ugx	Uganda Shillings
UNHCO	Uganda National Health Users Consumers Association
VHT	Village Health Team
WASH	Water, Sanitation and Hygiene
WFP	World Food Program
WHH	Welthungerhilfe
WLG	Women Livestock Groups
WUC	Water User Committee

A. Annual Food Assistance Project Activities and Results

The Resiliency through Wealth, Agriculture, and Nutrition in Karamoja (RWANU) program (Cooperative Agreement #AID-FFP-A-12-00011), a five-year USAID Food for Peace Development Food Assistance Program (DFAP), was awarded to ACDI/VOCA on August 10, 2012. The overall goal of the program is reduced food insecurity among vulnerable people in sixteen sub-counties in Southern Karamoja (see Table 1). The program has two strategic objectives (SO): 1) Improved access to food for men and women; and 2) Reduced malnutrition in pregnant and lactating mothers and children under five. In addition to overall management, ACDI/VOCA leads implementation of most activities under SO1, and in particular activities related to crop production, alternative livelihoods, increasing resiliency through the promotion of group savings and improving market linkages. ACDI/VOCA also manages the distribution of food rations. Welthungerhilfe (WHH) carries out the technical training and input provision related to livestock. Concern Worldwide has primary responsibility for the nutrition, health and hygiene activities covered under SO2. All partners work together to ensure integration across activities and promotion of gender equity and women's empowerment.

Table 1 Districts and sub-counties served by RWANU[1]

District	Sub-counties
Napak	Lokopo, Ngoleriet, Lotome, Iriiri, Matany, Lopeei, Lorengechora
Nakapiripirit	Lorengedwat, Nabilatuk, Lolachat, Namalu, Moruita, Kakomongole, Loregae
Moroto	Nadunget
Amudat	Karita

By the end of FY14, the RWANU program completed two years of implementation. During the year the program reached 35,139 vulnerable households with beneficiaries that participated in at least one of the program's services. This number is significantly higher than the 12,541 targeted in the IPTT. The principal reason for this was the significantly higher level of roll out from the lead mothers to the household care groups and the increase in the number of pregnant women, lactating mothers and children under two who received take home rations through the program. The number included 26,903 households with male and female adults, and 7,527 households with female no male adult, 621 households with male no female adults, and 88 households with children and no male or female adult... The overall number of beneficiaries provided assistance during the FY were 46,891 Beneficiaries served through SO1 activities were 10,215 and through SO2 were 39,168. The overlap between SO1 and SO2 was 2,492 representing 5.3%. The program overlap target is estimated to be 75% by 2017.

[1] Concern will take over Mother Care Groups as part of SO2.1 in March 2015. No food commodity distributions take place in Lotome (Napak District) and Lorengedwat (Nakapiripirit District) since there are no villages more than 5 km from a HC3 or HC4.

Strategic Objective 1: Improved access to food for men and women
IR 1.1 Improved smallholder farm management practices adopted

During FY14, RWANU supported the formation of 220 new Farmer Training Groups (FTGs) each with 25 members. The number of smallholder farmers provided with training in FY14 was 8,129, compared with the IPTT target of 8,592. The reason for this was that if farmers were enrolled in the farmer training groups but then did not participate in trainings, they were not considered beneficiaries. The annual actual value was adjusted for multiple trainings. The program reached 92% of the target number of farmers and others that applied improved technologies; these included technologies in crop cultivation, beekeeping, horticulture and goat husbandry rearing. The proportion of female farmers was 61.5%, reflecting the great importance of farming to women in Karamoja. Of the 163 year 1 FTGs, 57 were facilitated to establish block farms, each of 10 acres aimed at improving farmer capacity towards commercial production. The program leveraged investment in block garden preparation by farmers contributing thirty percent of the cost of tractor hire with the project paying the remaining seventy percent. Most groups' contributions were mobilized from their participation in the accumulated savings and credit associations (ASCA). The positive effect of the block farms was a significant increase over the target for the area under cultivation with improved practices. Overall 4,793 hectares of land had improved technologies, equivalent to 1.6 acres per farmer. Of this land under improved practices 1,864 hectares practiced the use of improved germplasm. Procurement of 120 oxen planned for the block farm participants was delayed by the time taken to secure approval to procure the animals. Once authorized, delivery of the oxen was further delayed by an outbreak of Foot and Mouth Disease (FMD) and a quarantine and restriction on livestock movement by all four district local governments in South Karamoja. The 120 ox ploughs were procured during the year.

The thirty RWANU field extension workers were provided training on improved crop production practices, farmer managed natural regeneration (FMNR) technologies, and post-harvest handling (PHH) through learning by doing on 220 new group demonstration gardens of ½ acre each. All participating farmers in FY14 were supported with starter seed kits consisting of a seed variety of a cereal and a legume identified in consultation with NabuZARDI as shown in table 2. Groundnut seed which had been planned to be distributed was cancelled because of a delay in procurement approval. Cassava planting materials were availed to ten block farming groups as an additional food source within the households.

Table 2: Type and quantity of seeds

Type of seed	Variety	Quantity distributed (Kgs)
Sorghum	Seso3B	9,332
Maize	MM3	2,800
	Longe 5	8,740
	Longe 7	300
Beans	Nabe 4	12,357
Total seeds		**33,529**
Planting material	Cassava	800 bags

There are a limited number of private input suppliers operating in Karamoja, all of which are operating in the Greenbelt region. At the start of the planting season, RWANU linked farmers from 27 FTGs to NASECO, a commercial seed company with distribution outlets in Mbale. These groups purchased 2.1 metric tons of maize seed, and planted 323 acres of land that had

been ploughed using service providers who were paid from ASCA funds collected by the groups. Recent surveys show that approximately 75% of farmers buy seeds from local markets where there are no controls of the seed quality of the commodities being purchased. As a result, the project is proposing to target and train ten local agro-input dealers to sell improved seed varieties in 2015.

Farm production and outputs were affected by delayed rains and later the adverse effect of above normal rains in FY14. In the program region, the onset of the first planting season (March-April) was late which impacted the timely planting of crops especially in the dry belt regions. In Napak District many farmers lost their entire first crop due to drought. Rain gauges will be installed in FY14 to get reliable data not only on rainfall quantity but also distribution which was erratic during the year. This made it hard for farmers to plan effectively.

FTG members participated in a series of training activities conducted at the demonstration sites and were given starter seeds to replicate knowledge and practices from the group demonstration fields to their own fields. Training on some activities such as irrigation, horticulture, pest management and soil management were significant less than targeted due to delays in the initiation of these activities. However training of men in apiary was above target reflecting their greater interest in this activity. RWANU conducted a survey to assess application of farming practices on their own plots. The results show 31% of the RWANU farmers were reported to have applied row planting, 57% practiced gap filling, 79% timely weeding, and 65% thinning. However, planting at the recommended spacing was low (4.8%) and broad casting was still significantly practiced in particular for sorghum (65%) and maize (30%).

During the year, exchange visits were organized between selected high early adopting farmer groups and those slow in accepting improved farming practices. The aim was to promote peer learning and share experiences through seeing and learning to trigger changes in attitudes towards farming practices. A total of 134 farmers (Male 65, Female 69) from -- Lotome, Ngolereit, Matany, Iriiri and Lokopo sub counties participated in the exchange visits, supported by eight government officials. After seeing the success of the first adopters first hand, many of the farmers decided to adopt improved technologies and the good agronomic practices observed. A farmer in Lotome sub-county, Lokiru Philllip stated, *"I will open 3 acres of land and plant sorghum seso 3B and Maize Longe 5, these crops had performed well in neighboring Ngoleriet sub county yet in both areas we receives almost same level of rainfall".*

Post-Harvest Handling (PHH): RWANU supported FTGs to upgrade storage, drying, packaging and transport of their produce to allow them to meet market quality, quantity and timing requirements. To reduce post-harvest losses RWANU conducted practical training of 622 farmers (Male 257, Female 365) on PHH. The training included threshing, shelling, grading, sorting, storage of grains. Trained groups received tarpaulins and hand held maize shellers. With assistance of field extension workers (FEWs), 80 improved granaries, 12 drying racks and 15 maize cribs were constructed across the project area.

Horticultural production: A total of 30 FTGS were selected this year for horticultural production as a complementary source of income and access to diversified nutritious diets. There were 216

group members trained (Male 97, Female 119) in horticultural production and assisted to establish nursery beds for crops that included cabbage, tomatoes, onions, kale and eggplants. RWANU provided the starter seeds. The horticultural training included nursery bed management and establishment, pest and disease control. During the year, horticultural farmers independently established thirteen nurseries without RWANU assistance. There was growing interest towards horticultural production, 12 out of 30 horticulture groups contributed $120 each for the procurement of small scale drip irrigation kits.

Capacity Needs Assessment: A training needs assessment was conducted of forty district production staff to establish knowledge gaps and challenges. It found that the majority of the production staff had little knowledge of new agricultural technologies, such as various improved seed varieties that could be adopted in the region, use of simple techniques such as line planting of small seeded crops, and modern and environmental friendly methods of pest and disease control. Training on these aspects is planned for FY15.

Collaboration with NabuZARDI: In FY14, collaboration with NabuZARDI experienced many challenges. There was a significant delay in writing up the FY13 agronomy trial results. No agreement was reached on a plan to fence part of the research station which had experienced significant theft. By the end of the period the Director had agreed to drop the idea of fencing the area. As a result no early season trials were planned for RWANU. However for the micro-season starting in September RWANU provided a fixed obligation grant (FOG) to undertake on-farm trials in four selected locations within the green belt area --- Lokopo-Apeitolim, Iriiri, Nadunget and Kakomongole. The trials cover four crops -- Sesame, Pearl millet, Green gram, and Cowpeas. On farm training of RWANU field staff and farmers who are directly attached to the demo plots is being undertaken as part of the trial. The establishment of 20 demonstration plots for Integrated Pest Management (IPM) research also planned for FY14 was not achieved because of the lack of agreement with NabuZARDI and there not being an approved PERSUAP. The lack of an agreement with NabuZARDI meant that only four of the 8 proposed investigations as outlined in the IPTT were conducted during the period.

IR 1.2 Improved smallholder livestock management practices adopted

RWANU supported the formation of 80 new women livestock groups each with 10 women. By the end of FY14, 120 groups were supported. It had been proposed to reach 1,215 women in FY14, but implementation delays meant that most of the group selection was concentrated in the second half of the year. All 800 women were trained in best practices of goat husbandry, savings and credit, gender and conflict mitigation to build their capacity in managing goats. The training emphasized construction of goat shelters, breeding for milk, goat feeding and disease management. Given that men are traditionally the animal keepers, gender training involved men and elders to ensure they accept the goat ownership by women while not shifting the role of grazing the animals to the women.

Goat distribution: During the year 1,799 goats were distributed to 677 women (462 new, and 215 continuing from FY13) in 86 groups (40 from year 1 and 46 from year 2). The distributed animals comprised of 1,281 local does, 441 *Galla* does, 48 *Galla* bucks and 29 Toggenburg

cross-bred bucks. Due to the low adaptability of the Toggenburg cross-bred bucks in the drier areas, RWANU introduced the *Galla* goat species as an alternative. The *Galla* are high milk yielding breed of the arid and semi-arid lands adopted from Northern Kenya and Southern Ethiopia.

Table 3: Type and Number of goats distributed in FY14

Sub-county	Number of women groups	Number of goats distributed				
		Local does	Galla does	Galla Bucks	Toggenburg bucks	Total
Lotome	9	194	86	9	4	293
Lopiee	6	120	60	6	0	186
Ngoleriet	10	229	105	8	2	344
Irriri	7	213	0	0	5	218
Lorengechora	4	120	0	1	2	123
Lorengedwat	10	269	63	0	7	339
Loregae	5	33	10	2	0	45
Lolachat	6	0	0	4	2	6
Nabilatuk	6	9	32	2	5	48
Kakomongole	4	0	18	4	2	24
Moruita	6	0	0	2	0	2
Namalu	6	59	0	0	0	59
Karita	7	35	67	10	0	112
Total	**86**	**1281**	**441**	**48**	**29**	**1799**

The project aim is to distribute goats that have been vaccinated against Contagious Caprine Pleuro-pneumonia (CCPP) and Peste des petitise ruminents (PPR). Because the approval to procure the vaccines and drugs to treat these conditions did not arrive until April 2014, there was a delay in distributing goats until the second half of FY14. The outbreak of Foot and Mouth Disease and the subsequent quarantine on animal movement from June 2014 within the southern Karamoja equally affected livestock procurement and distribution. RWANU collaborated with both the Government of Uganda and the livestock sector support agencies in the region to respond to the epidemic. Some of the Community Animal Health Workers (CAHWs) who were to be employed in year three of the project were trained during year 2 so that they could participate in the vaccination campaign to control Foot and Mouth Disease. By the end of the year 60 CAHWs has been trained against a target of 38.

Goat reproduction and health status: Of the 1,200 goats distributed in FY13, 884 kids were born, of which 667 survived (326 males and 341females). Among the Toggenburg cross-bred bucks forty percent died compared to 4% among the Galla goats. The deaths were due to disease related from slow adaptation, lack of veterinary drugs, and lack of money to pay CAHWs and

mis-diagnosis / treatment by unqualified persons. Some of the male kids were fattened for sale while other male Toggenburg crosses were kept for further breeding.

Milk production: The surplus daily milk production per goat after the kids suckle was estimated at a quarter of a liter and a total of 884 does were milked during the year. It is estimated that approximately 13,260 liters of milk was collected during the year from lactating goats given the average lactation period of two months (60 days). A mores systematic assessment will be conducted in FY15 to determine the contribution of goats' milk to household diet and child nutrition.

Goat shelter construction: RWANU supported the construction of 51 goat shelters by providing nails and binding wire as well as procuring expertise in carpentry. The other materials such as poles, reeds and grass for thatching are contributed by the women livestock groups. The shelters were appreciated especially during the rainy season.

Fodder banks: RWANU distributed fodder tree seedlings which consisted 2,500 *Calliandra calothyrsus*, 2,000 *Leucaena leucocephala* and 50 of *Gliricidia spp.* Livestock groups were trained and supported to establish and plant 33 demonstration fodder banks in Lorengechora, Kakomongole, Namalu, Nabilatuk, Iriiri and Lolachat sub counties. The size of the fodder bank has been increased from 0.0625 acre to 0.25 acre in 15 plots making an overall total of 4.875 acres. By end of September, the average height of fodder plant was 40 cm.

Access to veterinary services: RWANU has continually linked all the women livestock beneficiaries to CAHWs to access veterinary services and care. RWANU conducted refresher veterinary training for 87 CAHWs (4 Female and 83 Male) assigned to 9 of the 16 sub-counties in the project area. These were selected from 6 existing CAHWs' associations. RWANU has commenced providing support to formalize the status of CAHWs in collaboration with the District Veterinary Offices, and other partners working in the veterinary sector in Karamoja. During the year, RWANU visited 16 existing veterinary outlets (drug shops) to assess their capacity. It was established that no outlet was licensed nor had the capacity to handle vaccines and they were on unsuitable premises to safely store veterinary pharmaceuticals. They had a limited range of products and a lack of specialized facilities. RWANU will be working with some of these outlets in FY15, to build private sector capacity in this area.

RWANU partnered with other livestock sector support agencies in the region to organize the first ever Karamoja Veterinary Expo. The Expo attracted four veterinary pharmaceuticals importers and wholesalers from Kampala. These included Quality Chemicals Ltd, Vet Centre, C-K Brands and Farm Support Uganda Ltd that exhibited their products. Over 100 veterinary pharmaceutical products users in the project area participated. The veterinary pharmaceutical importers were satisfied with the potential of business in the region and RWANU will actively follow-up to facilitate the set-up of this network in collaboration with the other relevant stakeholders. Saving and credit groups were introduced to women groups to enable them to mobilize financial resources to pay the costs of veterinary care and animal management. Of the groups, 23 active livestock groups managed to generate savings of about $1,100.

IR 1.3: Increased Linkages to Markets

In FY14, RWANU provided support to farmers to build their capacity in market-oriented production and group marketing. Ninety-three farmer group leaders (74 males and 19 females) were assisted to form market groups. RWANU facilitated the farmers to organize into marketing groups to ease collective marketing and its associated benefits including vertical and horizontal linkages in the value chain. In total, 28 FTGs and four apiary groups formed Namalu RWANU Farmers Association (NARFA). Four farmer groups were supported to market their produce (21.2 MT of maize grain) valued at about US$6,000. There were twenty one grain groups that were linked to buyers compared with a target of sixteen but there were no livestock or honey group linked to buyers. RWANU opened two pilot bulking centers in September 2014, in Namalu and Karita. As farmers had just harvested the bulking centers will begin receiving grain in September/October 2014. Grain buyers were identified at these sites.

Ten potential agro-input dealers were identified. These dealers will be trained in time to provide inputs for the 2015 season. In 2014, RWANU linked 27 farmer groups in Karita, Moruita and Matany to input markets in Mbale to buy seed produced by Naseco. Farmers used about Ugx. 35 million (approximately US$14,000) of their own savings for tractor hire and purchase of seeds. RWANU trained 1,103 farmers (Male 484, female 609) in Farming and as Business (FaaB) and marketing to empower farmer groups to procure farm inputs in bulk and establish direct commercial relationships with private sector buyers.

Three RWANU staff attended a training in Value Chain Development and Actor Empowerment training in Harare, Zimbabwe organized by the International Institute of Rural Reconstruction. The five day training equipped researchers, trainers, rural development practitioners and service providers with the competencies needed to assist small scale farmers, traders and businesses to strengthen their position in value chains. The key message of the training was "Do not try to market what you can produce, instead produce what you are sure you can market".

Honey Production: An assessment was conducted in twelve sub-counties[2] to determine honey production potential. Following the assessment, the honey officers identified the locations that are suitable for honey production and sensitized the community about the program and developed selection criteria to be targeted in the apiary activities. The criteria include previous experiences in honey production, willingness to participate, and elders' recommendation/ endorsement as someone more trusted and reliable member of the community. Then RWANU team organized them as a group and assisted them to develop bylaws and conduct regular meetings. RWANU formed 23 honey producer groups in FY14 with 460 individuals (316 Males and 144 Females). Two of these groups were composed of exclusively male youth. Selection of groups was based on: 1) the vegetation cover for bee foraging, 2) participation of groups in other RWANU activities, 3) number of youth, 4) access to water sources, and 5) prior knowledge of beekeeping. Trainings in apiary farming was provided to 539 farmers (male 363 and female 176)

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[2] Karita, Moruita, Namalu, Kakongomongole, Loregae, Lolachat, Lorengedwat, Ngoleriet, Lorengechora, Lokopo, Nadunget and Nabilatuk.

including farmers who were continuing from FY13 activities. The training aimed at equipping them with skills in apiary hygiene and maintenance so as to increase knowledge of feeding bees, behavior and sociology of bees, importance of beekeeping, the bee calendar, ways of siting and stocking bees, apiary layout/design, bee products and their uses, types of bees and functions, bee pests/predators and prevention measures, bee equipment and history of bees/honey. Bee farmers enrolled in the program did not have the essential gear and equipment recommended by the apiary industry. RWANU therefore procured and distributed honey starter kits to apiary farmer groups. Items distributed included: buckets (260), hive tools (260), and bee brushes (260). In addition, 410 beehives were distributed to 20 new bee-keeping groups.

By the end of the reporting period 232 of 410 hives were colonized. Reasons for the low level of colonization were: 1) Hives were distributed after the swarming seasons, 2) The dry season (Oct 2013-Feb 2014) reduced the amount of forage and water for bees and thus slowed down the process of honey production, and 3) Pest attacks by black ants and the wax moth of the family Pyralidae or snout moths. Hive inspection showed that in recently colonized bee hives, bees were constructing honey comb stores and rearing brood to increase hive population. Some of the bee hives that had colonized had unripe honey. Community meetings were held to caution farmers on the need to manage their apiaries better. Following this, sub-county leaders promised to support FEWs in enforcing resolutions passed during meetings. Resolutions included: relocation of affected apiaries, fencing of selected apiary sites, identification of new members to replace culprits, formulation of mini-apiary groups to monitor bee-keeping activities, and store establishment at sub-counties for apiary equipment.

RWANU continued to engage honey private sector players and as a result of this, Golden Bees Ltd opened the first honey shop in South Karamoja in December 2013. They expressed willingness to buy all the honey produced by RWANU producers. A Memorandum of Understanding (MOU) is however, yet to be established. To date 120kg of honey has been produced and purchased by Golden Bees Ltd. A large quantity of honey is expected to be harvested between October and December 2014. Golden Bees Ltd are ready to purchase.

RWANU attended the launch of the national beekeepers training manual (simplified version) organized by TUNADO, the Apex body supporting beekeeping in Uganda. The simplified manual is more user friendly for trainers at the grass-roots level. Recognizing RWANU's invaluable contribution to the beekeeping sector, specifically in promoting honey value chain activities and apiculture as a whole, an invitation was extended to RWANU by TUNADO, to participate in honey week (August 25, 2014) followed by an Api-expo (an African apiculture continental show in Zimbabwe, October 6-11, 2014). RWANU's honey production officer participated in the APi-Expo in Zimbabwe.

IR 1.4: Access to Credit Increased

During the year, RWANU organized 4,916 farmers (2,013 males and 2,903 females) from within the established production groups (crop, apiary, and livestock) into ASCAs. The 12 (out of the target 283) new producer groups were given starter saving kits comprised of lock boxes, passbooks and associated materials. That not all groups had received kits was due to delays in procurement and fabrication of the saving kits. Groups that did not receive saving kits were not

counted, resulting in a significant shortfall in target achievement. This procurement of the outstanding saving kits will be completed in FY15. Four hundred and sixty-eight (468) (male 265, female 203) group leaders were trained in savings mobilization, book keeping and business skills. Table 5 presents active members of ASCA and the number of members that took loans. It was evident these ASCA had created opportunities for female members since more females were actively saving and taking out loans than males. Results from a survey of farmers showed that 37% of the RWANU farmers had used financial services in the past 12 months. To a large extent these were the ASCAs.

Table 5: ASCA members saving and credit status as at September 2014

Active members of ASCA			Number of ASCA members who took loans			Accumulated Savings	Cumulative value of loans
Male	Female	Total	Male	Female	Total	Ugx 109,249,000	Ugx 68,858,285
1,144	1,607	2,751	508	746	1,254	$42,992	$27,003

During the year, RWANU initiated linkages between Centenary Bank and the program savings groups to introduce them into the formal financial services. A draft MOU was developed by Centenary Bank. The program organized and facilitated an exchange visit between group leaders. The objective of the exchange visit was meant to promote peer learning and expose group leaders to savings and credit management experiences by other groups.

Strategic Objective 2: Reduced malnutrition in pregnant and lactating mothers and children under-5 years of age

IR 2.1: Improved Health and Nutrition Practices at Household level

Develop Social and Behavior Change Strategy and Action Plan (SBC-SAP)

Changes to the Social Behavior Change Matrix: In response to the Concern Worldwide technical advisers' visit in October 2013 recommendation to re-structure the timing of the Mother Care Groups (MCGs) modules to go with the emerging social behavior change and communication (SBCC) needs, the MCG BCC Module 7- Linking Agriculture and Nutrition was moved forward to become Module 3. The Male Change Agent (MCA) strategy was finalized and approved and Part 1 of the MCA strategy was developed and implemented.

Implement SBC-SAP strategy and disseminate SBC messages

Update of SBC-SAP with research results: The *'Barriers to Healthcare Access for Women and Children in Southern Karamoja'* research conducted in July-August 2013 recommended the following behaviors for promotion through the SBC-SAP: 1) Pregnant women deliver at the health facility; 2) Mothers with children 0-59 months adhere to appropriate treatment for the most common child illnesses; malnutrition, malaria and diarrhea; 3) Mothers with children 0-59 months promptly seek formal health care for themselves and their children; and 4) Savings for health emergencies are available within the household. These behaviors have been included in the SBC-SAP and in FY14 informed the curriculum and materials production for Module 2 (Maternal Nutrition and Health). The 'Radio Listening Choices and Habits' survey in March 2013 showed that using radio as a communication channel in Namalu, Nabilatuk and Nadunget sub-counties was not feasible due to low coverage and access to radio by communities. The

SBC-SAP was amended to use drama groups to perform skits and pull-up banners with pictorial messages instead of the radio and leaflets originally planned. In FY14 pull-up banners were designed and produced and content for the drama was developed and tested with an initial five community drama groups trained to deliver the drama program which commenced in August 2014.

Promote positive behavior change in household care giver groups

Module 1: Improvement of Infant and Young Child Feeding (IYCF) practices at household level through MCGs: Starting in February 2014, all 26 Heath Promoters (HPs) received monthly training on the following month's lesson, after which they held meetings with their Lead Mothers (LMs) in their MCGs. The LMs in turn met with and counselled their respective household caregiver groups (HHCGs). HPs followed up with LMs to support them in this training. To date, 1834 LMs (91%) have received information on Module 1 IYCF-Lessons 1-6 in Nakapiripirit and Amudat and Module 1-Lessons 1-4 in Moroto. At the end of Module 1 in November 2014, there will be a quality assessment of the MCGs in the three districts to ascertain the quality of the meetings and improvement of practices by HHCGs in their households.

Module development

Both Module 1 and Module 2 were finalized and printed. Module 1 is currently being rolled out. Two thousand copies of Module 2 counselling cards for Lead Mothers and 35 copies of the curriculum are awaiting distribution upon completion of Module 1. Modules 3 (Linkages between Agriculture and Nutrition) and 4 (Water, Sanitation and Hygiene) are currently being developed and reviewed technically. Delays in Module 3 and Module 4 development were because following the Concern Global Advisors visit trips to RWANU – recommendations were made to add lessons and a rethinking of the messages, incorporating interaction with SO1 in the development of these new lessons. Additionally, the Concern senior nutritionist spent more time on establishing the monitoring system for collecting data from Lead Mothers through the Health Promoters. The curriculum for Module 4 (WASH) was completed but the module cards are being finalized in FY15. An additional lesson was added to this Module 4 (WASH) following the Global Advisor visit and recommendations..

Promote positive health and nutrition messages

Revisions to a few lessons in Module 1 were made in FY14. The printing, distribution and training MCGs in Module 1 was started and neared completion in FY14. Thirteen drama groups were identified to promote positive health and nutrition messages, and five of them were trained on Module 1 (IYCF). Key module messages were translated into folk media, which is easier for the community to understand and implement at the household level. In FY14 nine drama shows were conducted at food distribution points (FDPs) and at health facilities. Three drama groups presented three shows at food distribution points and at health facilities, reaching 250 women at FDPs and an estimated 200 women and children at two health facilities.

The FY14 results for improved health were less than anticipated. For example malnutrition rates were higher than anticipated, particularly among girls; the number of children who had diarrhea in the past two weeks and the number of children fully immunized were less than the targets. This data was collected as part of the annual survey which took place after a long drought and

before the first harvest but at a time of rainfall demonstrating the seasonality of the diarrhea. Compared with the targets there were also shortfalls in the exclusive use of breast-feeding for children under six months, the percentage of children receiving a minimum acceptable diet and the percent of respondents who know three of the five critical moments for hand washing. However the effectiveness of the Concern led training modules was shown by significantly more respondents who know IYCF and maternal and child health (MCH) practices and the percentage of households with soap and water at the hand washing station.

The Health Educators attend FDPs to collect beneficiary lists, collate any updates and complaints, and disseminate health and nutrition messages, guided by the Module 1- IYCF key messages. In addition, HEs assisted by some Lead Mothers conduct cooking demonstrations for preparing nutritious porridge using various nutritious recipes of locally available foods. Pull-up banners, with enlarged photographs, were also developed and printed with IYCF and Maternal Nutrition key messages. These will be displayed during FDPs and National Campaign Day activities during FY15 to further reinforce practices in the communities.

Promote nutritious recipes

Recipe Book development: Nutritious recipes for complementary feeding of children 6-23 months and maternal nutrition are being pretested in Nakapiripirit and Amudat. This pretesting is to confirm the idea of using pictures, as recommended following the Trials for Improved Practices (TIPs) research, and the use of those locally accessible foods identified in the Cost of Diet research. The recipe suggestions are developed to be acceptable by both the Karamojong and Pokot communities in RWANU project areas.

Establish New Mother Care Groups

Census and MCG formation in Nadunget, Moroto: Earlier in 2014, 49 villages in Nadunget sub-county, Moroto, were enlisted for census and 4,505 households were recorded. The census data was used for formation of 31 MCGs (with 336 LMs) that are all active. The census data further informed the lists of eligible beneficiaries entitled to food rations and beneficiaries eligible for livestock (goat) women's groups.

Mother Care Groups: The total number of MCGs has now reached a cumulative number 200 for the three districts supported by the project (Nakapiripirit, Amudat and Moroto), of which 99% (198) of these are actively participating in trainings, conducting home visits and disseminating the key messages in the lessons for Module 1- IYCF. This is surpassing the target of 146 active MCGs for FY14. The lessons continued to be rolled out every month to 24,038 household care givers in their respective communities... Distributions to MCGs and HHCGs included: 93% (1,869) of the LMs have received a set of saucepans for cooking demonstrations (Modules 1 and 2); 93% (1,869) HHCGs received three watering cans for kitchen garden activity; 94% (187) of the MCGs received tarpaulin sheeting for them to use for their monthly meetings; 71% of LMs also received their T-shirts printed with their title as LM in local language. The non-food items distribution is still on-going. Training of the HHCGs (16,848 compared with a target of 24,830) was less than planned, largely due to activities by HHCG members limiting their participation at particular times during the year.

Implement strategy for male change agents to promote joint decision-making and other positive empowerment behaviors

The Male Change Agent approach, aimed at involving men to promote joint decision-making and for positive health and nutrition behavior change at the household level, was piloted in two sub-counties in Nakapiripirit District. A total of 24 MCAs were selected with the guidance and support of the community leadership, and 21 of these have been trained on eight of the 17 lessons that make up part one of the MCA curriculum. The MCAs were joined by their wives on the second and third days of the training. The training covered roles of an MCA, attitudes about gender, gender and power, division of labor, as well as healthy and unhealthy relationships. At the end of the three days, each MCA committed himself to doing something different and these commitments were developed into an action plan that HEs are using to monitor progress and give support. A follow-up survey with the MCAs on the commitments they made showed that 18/21 of the MCAs are now practicing what they learned about division of labor in their own households, such as constructing bathing shelters, compound cleaning and even accompanying their female spouses for antenatal check-up.

Implement strategy for community, opinion & religious leaders

Sensitization and awareness of Community and Opinion leaders on MCGs: Meetings were held with 335 community and opinion leaders including Local Council, Parish chiefs and religious leaders in Nakapiripirit, Amudat and Moroto, to raise awareness on the presence and activities of the MCGs. Opinion leaders embrace health and nutrition messages being promoted and commit themselves to sharing these practices during community meetings with their constituencies/ congregations. These meetings also provide a platform for RWANU staff to clear any misunderstandings about the project objectives and the messages will trickle down to the communities.

Improve waste management

Improved Hygiene and Sanitation: The Environmental Health Officer was recruited in January 2014. Global WASH Advisors from Concern headquarters made a technical visit to RWANU in April 2014. Hygiene and sanitation activities commenced with the mapping of stakeholders involved in water, sanitation and hygiene (WASH) and those who received training on Community Led Total Sanitation (CLTS) and Participatory Hygiene and Sanitation Transformation (PHAST). The findings showed, that for the number of actors working in the water sector in Karamoja, very few are active in sanitation and hygiene and the majority had not had any exposure to CLTS or PHAST methodologies. To address this, 24 health staff and community development officers were trained in PHAST followed by the Training of Trainers in CLTS/PHAST, which equipped 19 participants with CLTS trainer skills. This was significantly less than the target number of training beneficiaries given delays in developing the WASH module and then the time to implement this activity.

Nadunget sub-county in Moroto district was the first to commence sanitation and hygiene activities. In consultation with the Moroto District Health Inspector, Acherer parish was selected

with five villages for triggering[3] on CLTS. Subsequently, four traditional pit latrines were completed and another 25 latrines are undergoing construction. Two boreholes in Arengkeju and Atedeoi villages were repaired and fenced, the labor for the repair paid for by the water user committees and the community. Two Water User Committees (WUC) received training on routine and restorative maintenance of boreholes and CLTS roll out in their villages.

Hand washing with soap and ash

A Knowledge, Attitude, Practice and Coverage (KAPC) survey was conducted in May 2014 and collected baseline data on hygiene and sanitation practices in the target areas. The KAPC survey included 18 district local government staff acting as supervisors and 16 enumerators. The preliminary findings revealed that while 85.7% of the household surveyed had access to safe drinking water sources (mainly the borehole) and the average time taken to and from safe water source was 37 minutes, only 12.5% of the households consumes the standard 20 or more liter per person per day (taken as proxy indicator of poor hygiene). The survey highlighted that although access to safe water was high at 85.7%, the source of contamination generally occurred between the source of transport and the source to storage before consumption. Only 5.8% of the households had a hand-washing point with soap or ash and water and 79% of people surveyed knew at least three of the five critical moments for hand washing. The last two results indicate the project is on-track for the FY14 targets of 6% and 75% respectively.

IR 2.2: Improved service delivery for prevention and treatment of maternal and child illnesses

Conduct quality and staff capacity assessment of MOH centers and outreach services in target areas

In the Quarter 2 report covering January-March 2014, the Health Institution Capacity Assessment Process (HICAP) was not used as the information needed was sufficiently captured in the Community Score Card (CSC) exercise[4]. The CSC was carried out in Moroto and Napak districts. It is anticipated to bring notable changes in the delivery of quality health services. This highly participatory process of scoring health and nutrition indicators of service quality created awareness, understanding and encouragement on the side of the health providers and users. The project engaged the technical support of a local NGO, Uganda National Health Users' Consumers' Organization (UNHCO) in first three sub counties (Nadunget in Moroto and Lotome

[3] Through the use of participatory rural appraisal methods community members analyze the sanitary and hygiene conditions in the community through CLTS and can trigger community-led local action to stop open defecation totally, and without subsidies or prescriptions for latrine models from an external sanitation program. Once ignited, the CLTS triggers almost immediate action and communities start digging holes for construction of homemade pit latrines. The CLTS approach ignites a sense of disgust and shame among the community. They collectively realize the terrible impact of open defecation: that they quite literally will be ingesting one another's feces so long as open defecation continues. This realization mobilizes them into initiating collective action to improve the sanitation situation in the community. **Practical Guide** to Triggering Community-Led Total Sanitation (CLTS) by Kamal Kar, November 2005.

[4] CSC – Community Score Card is an application that presents a summary of results: rating of specific dimensions, which affect health service delivery. It is a qualitative tool used for local level monitoring and performance evaluation of services, projects and government administrative units. It includes an interface meeting between service providers and the community that allows for immediate feedback. This CSC provided a two-way assessment of health service delivery and the process brought together the demand side (health users) and the supply side (healthcare providers) to jointly analyze the status of health service delivery and devise a common way of addressing service delivery gaps.

and Ngoleriet in Napak). Thereafter, the RWANU team moved it forward to five more sub-counties in Napak district. The CSC has built the capacity of 83% (763 persons- 428 men and 335 women) of the targeted health providers, community members, VHTs, and local leaders on its application and has since been applied in five more sub-counties of Napak district. Initial reports from the communities indicate as a result of the CSC exercise, that health workers attitudes are improving, the patient relationship, in terms of decreasing waiting time and attending to patients on weekends and holidays is being addressed; more male spouses are now accompanying their wives to health center for delivery, more sanitation structures (latrines) are being constructed at health facilities and at the CSC community volunteer monitors households. Notably, Lotome health center, after the CSC application sessions, discontinued the contractor who was hired to build the maternity wing due to poor performance. Now with the new contractor, the unit is almost completed. One health center (Apetolim) in Napak district is now in the process of being upgraded to Health Center III category, meaning more drugs and additional services will be available to cater for a growing population.

Collaborate with MoH to improve health center and outreach services in target areas

Health system strengthening has been undertaken by the project to improve the quality of health and nutrition services in health facilities. The purpose is to encourage more utilization by the target group (mothers). Following a functional assessment carried out in Year 1 of the project, RWANU provided essential materials/equipment (non-recurring) to 25 health facilities where health services were lacking. Capacity building of more than 1,000 facility and community based health workers was carried out using the 1000 days approach focusing on maternal nutrition, Growth Monitoring and Promotion (GMP), case identification and management of acute malnutrition. This has resulted in more than 2,308 children under-two being screened, assessed, and managed at five GMP piloted health facilities in Moroto and Napak from March 2014 to August 2014.

Another strategy taken by RWANU is to support district health facilities through integrated outreach services for hard-to-reach communities in joint collaboration with CUAMM[5]. From the data collected at the outreach posts during FY14, 10,248 children were reached for nutrition screening, immunizations, deworming, Vitamin A supplementation.1, 489 pregnant women were also reached for antenatal services. The most remarkable achievement so far is the integrated delivery of a package of outreach services at food distribution points (FDP). RWANU has been working closely with Marie Stopes International (MSI) in providing family planning services to 24 FDPs. Additionally, the integrated maternal child health and nutrition (MCHN) outreach services have also been held at FDP points to maximize coverage and increased access of these services.

[5] CUAMM- Doctors of Africa, an NGO supported by UNICEF for their MCHN service strengthening.

In coordination with the Integrated Management of Acute Malnutrition (SURGE[6]) response of Concern Worldwide, RWANU has trained 80% of the LMs on how to identify severe acute malnutrition using the Mid-Upper Arm Circumference (MUAC) tape and on assessing nutritional edema in the community and referring them promptly to the Village Health Teams (VHTs). LMs in Nakapiripirit, Amudat and Moroto districts assisted with active case finding of malnourished children beginning in February 2014. This linkage with the village health workers structure of the MoH reinforced the work being done by the VHTs in nutrition surveillance and referrals. The target of identifying 1,569 children who have acute malnutrition and referring them to the therapeutic feeding programs in the three districts has been surpassed. From February to August 2014 – 2,638 children had been admitted to therapeutic feeding programs in all three districts.

Training targets on the CSC were less than planned due to the delay in rolling out the CSC in Nakapiripirit and Amudat.

Commodity Operation

During this year, commodity distribution activities were rolled out to pregnant women, lactating mothers and children under two years of age in all 14 eligible program sub-counties. These people were identified through a census conducted by the project which is updated by health educators on a monthly basis as newly pregnant women are identified. The program aims to support children during the first 1000 days from conception. Residential eligibility is determined by living in population settlements that are outside a 5Km radius from HC3 and HC4 facilities. Residences inside the 5km radius are provided food rations by WFP. As a result of expansion in program coverage, the monthly caseloads have increased to 15,239 beneficiaries (4,876 are pregnant and lactating women and 10,363 children 6 to 24 months). By the end of FY14 ration commodities were distributed to 21,262 unique individual (children 12,125 and PLW 9,137) through a network of 63 food distribution points (FDP) which are visited monthly. In addition to the direct distribution of 4kg of CSB, 1.5 kg of pulses and 0.5 liters of oil for pregnant and lactating women and 2.25kg of CSB and 0.5 liters of oil for children, households of these beneficiaries receive a lean season ration of 12kg of corn meal and 4kg of pulses. The lean season coincides with the peak hunger season of March to June (four months) but this year, the lean season rations started in December 2013 and finished in July 2014 in Nakapiripirit and Amudat and August in Napak and Moroto. Cumulative commodities directly distributed by end of the reporting period were; 282.319 MT of corn soya blend, 107.18 MT of vegetable oil, 174.273 MT of split green peas , 153.376 MT of lentils, and 783.79MT of cornmeal, as outlined in Table 6. Table 7 shows a breakdown of the variances.

[6] In response to the Food Security and Nutrition assessment in Karamoja in May 2013 showing a GAM rate of 20.2% and a SAM rate of 6.1% in the area, Concern secured additional and separate funding for a Surge response to monitor the situation and identify responses to support the increased malnutrition caseload in two districts supported by RWANU. The SURGE approach aims to support government health facilities effectively manage increased caseloads of malnutrition without undermining the health system and provision of other health services during the seasonal spikes. Surge program provides an additional targeted support to existing health services complementing RWANU IR2.2 arm of strengthening MOH health facilities.

Table 6: Commodities stock status at warehouse between Oct. 1, 2013 and Sept. 30, 2014 (in metric tons)

FY14 Statistics	CSB	Vegetable oil	SGP	Lentils	Cornme	Total
Opening Balance	145.0207	38.981	125.099	0.000	265.083	574.183
Quantity received	416.774	109.790	49.773	246.85	560.605	1,334.02
Quantity	282.319	107.180	174.273	153.37	783.790	1,500.93
Closing balance	228.167	41.597	0.732	43.482	32.562	346.540
Variances	51.307	0.012	0.132	50.000	9.337	60.732

Table 7:Commodity Variances in MT

Commodity Type	CSB (51.3067)	Vegetable oil (0.012)	Split Green Peas (0.1323)	Lentils (50)	Cornmeal (9.3367)
Donation St Kizito Hospital Matany					7.342
Donation (Matany Hospital and WFP DRC)	52.000				
Emergency Distribution to the burnt Villages		0.028	0.124		0.372
Loan Repayment to Mercy Corps				50.000	
Commodity Gains/ Losses / CSB distributed as cornmeal	0.693	0.016	0.008		1.623

Other support activities: A warehouse with a 2,000 metric ton (MT) capacity in Soroti was hired. This facility is used as ACDI/VOCA's primary warehouse for all its distribution commodity shipments from the port. During the year, Matany warehouse was closed because of the program's inability to fumigate commodities in line with PERSUAP guidelines, due to the close proximity of residences to the site. The program hired warehouse space from World Food Program (WFP) in Moroto, using a similar arrangement as exists in Tokora. RWANU engaged a private service company to fumigate all three warehouses.

Cross cutting

Gender

RWANU conducted a participatory development of a gender integration checklist. The gender checklist will guide program team leaders on gender issues, gender messages and ways to integrate gender into program activities. Prior to the development of the gender checklist; gender awareness was appended to other program related training activities and interface with beneficiairies. During the FY14, RWANU carried out participatory gender awareness messages which reached 80 women livestock groups, 220 farmer training groups members, 23 honey producers, and 30 horticulture farmers. During the design of the male change agent curriculum, gender issues and gender responses were intergrated into the training manual. All 25 progam health educators were trained in gender intergration as trainers of male change agents.

The proportion of women participation in the RWANU livelihood activities stands at 61%. Specifically women represent 58% of the actively saving members and 59% of those taking loans. Women consutitute 37% of the honey production group and 100% in livestock production. The program has identified and trained 24 male change agents that have been oriented on gender, nutrtion and health. The change agents were equipped with knowledge to lead the gender advocacy and change among men.

Conflict Mitigation

RWANU continued to work through Community Action Groups (CAGs) to help mitigate community conflicts that may result from RWANU program activities. There are 32 CAG formed to support mitigating conflicts. CAG membership is split evenly between males and female. The groups are active and meet quarterly to resolve minor conflicts that arise. More than double the targeted number of group members thought that the meetings were useful and achieved their objective. RWANU field staff (60) continued to integrate conflict sensitive messages during their meetings with beneficiaries and link program beneficiaries to CAGs. A total of 315 farmers (192 females and 123 males) received conflict sensitive messages. Key messages included: triggers of conflicts and their effects on group activities. The group leaders appreciated the discussion and agreed to guard against any potential causes of conflicts.

One meeting between CAG and Umoja women's livestock group in Lemusi, Moruita Sub County was held to resolve the issue of the alleged sale of 2 goats by a WLG beneficiary. The goats were recovered and returned. Together with other staff, two conflicts were resolved with beneficiaries over stolen money of ASCA groups. Three meetings between apiary groups comprising 47 members (29 males and 18 females) were held to consider mechanisms to manage and avert theft and apiary mismanagement and its implication to the groups. The three groups moved forward to allocate teams of five to monitor the apiaries on a weekly basis and give apiary status reports.

RWANU engaged in collaboration with other stakeholders and local government participated in coordination meeting to build synergy and share lessons towards peace building and conflict resolution. Local stakeholders included RIAMIRIAM, IRC, OCODI, PACT and Mercy Corps.

Disaster Risk Reduction/Natural Resource Management

RWANU continued to work very closely with the communities and other stakeholders in strengthening communities' resilience and capacity to adopt sustainable NRM practices to cope with such drastic changes in weather. The strategy adopted was through farmer training and mentoring and demonstration of sustainable NRM practices on demo gardens and block farms supported by the program. The NRM practices promoted included tree stumps regeneration, establishment of water diversion channels, establishing soil and stone bunds, plants and crop residue retention, maintaining protective trees in and around their homes and gardens among many other NRM practices. Result of the annual survey showed that 16.5% of RWANU supported farmers had practiced water off shoots and diversion, 96.7 practicing tree stumps

regeneration, 23.2% able to use soil bunds, 96.8% maintaining protective trees in crop farms and 23.2% retain plants and crop residues.

RWANU through its partners such as ACTED, FEWSNET, National center of meteorology, gathered and disseminated early warning information on rainfall forecast to program beneficiaries. Through the FEWS, 2027 farmers received the early warning information, though this was less than targeted, due to the erratic distribution of early warning information, and the limited dissemination of the reports. The program conducted training to 46 FTGs and 27 WLGs on Farmer Managed Natural Regeneration (FMNR) practices to integrate FMNR into crop and livestock production. These training events were part of farmer training and not a specialized training meant that only a few participants received a specific NRM and biodiversity conservation training. Bush burning, charcoal burning for sale and collection of fuel wood for domestic use and sale remain the biggest threats to environment in the program area. Surveys conducted by the project show that charcoal, firewood and livestock sales are the largest sources of income in the project area.

The program conducted training in causes of environment disaster and disaster response planning to 29 FEWs. They were oriented into on farm site selection and agro forestry. The FEWS then supported 33 FTGs in drawing the disaster response plans adopting locally available sustainable response strategies. During the development of the disaster contingency plans, the community/participants identified pressing hazards including drought (prolonged dry spells), crop pests and diseases, termite attacks, honey dew on crops 'ebuta', weeds, wind, floods, water logging, and hail stones. The contingency plans were analyzed and shared with the different stakeholders.

Monitoring and Evaluation

The program conducted the belated FY13 and FY14 annual surveys to generate data for tracking annual outcomes indicators. The FY13 annual survey was managed by a local external consultant. The survey undertaken in March covered 1,046 beneficiaries in different program activities. The final report expected in May 2014 was finally provided in July 2014. In September, RWANU embarked on an annual survey for FY14, the results of which are incorporated into the IPTT.

Database Development and Implementation: RWANU completed a household census generating 255,532 individual records from 45,627 households, which is used for program targeting, program roll out and beneficiary selection. The census data forms the backbone of the database. RWANU also completed the design of a robust and sophisticated program database. The database was used for data management, monitoring program outputs, tracking beneficiary participation and integration across program components, and for management of commodity distribution.

The program Monitoring and Evaluation plan was developed. The M&E Plan serves as a guiding document that describes how RWANU will establish and implement a system to monitor, evaluate, analyze, and report on the results of the project.

Program learning and adaption: RWANU believes in continuous learning and adaptation. During the year, five programmatic assessments were conducted. These included farming systems, commodity distribution, farming practices, and WASH. Results of the assessments together with routine monitoring data were disseminated during quarterly performance reviews to reflect on performance, lessons learned, successes and challenges.

B. Lessons Learned

SO1 Lessons Learned

- Women seize opportunities to save and control their own income. More women (61%) than men are involved in project activities. They are more involved in savings and credit schemes. Much of the savings are made from sales of charcoal and local brew labor. Little income is generated from agriculture. RWANU will continue training them with basic business planning skills and FaaB to encourage the use of their savings for productive investment.
- Successful groups will use collective farming from block gardens to shift from subsistence to commercial farming: RWANU pioneered the leveraging of farm inputs with 57 block farmer groups. FTGs mobilized money and contributed to cost of tractor hire. This is unprecedented in Karamoja where population was accustomed to free hand-outs.
- Not all of the sub-counties are suitable for promoting honey production: The most productive honey regions are the green belt areas of Karita, Namalu and Iriiri. The program's attempts to broaden the introduction of bee farming to other sub-counties have been unsuccessful. RWANU's support to honey production will only be in areas where there is good potential for production and productivity.
- Selection of the right medium of communications is a key to success in outreach activities: Use of radio for messaging is a poor use of resources since women often have no access to radio especially during day time as they are busy in the field searching for food or working. Drama groups are more successful in raising community awareness.
- Uptake of improved technology and farming practices has been slow: There is not yet evidence that RWANU farmers are more likely to adopt improved farming practices compared with non RWANU farmers. Going forward RWANU will intensify the extension support to the farmers groups through a more structured and systematic training processes and by deploying a network of lead farmers to encourage peer learning and expand reaches.

  The opportunity for marketing improved seed varieties exist in local sellers of 'Grain' un-improved seed varieties: Field assessment results showed that the major sources of seeds for farmers were local markets dealers. In FY 2015, RWANU will target and support agro-input dealers in strategic locations where there are potentials for increased production and where there are opportunities for market.
- Improved farming practices made crop management easier and encourages men to participate in farming activities: Row planting has the potential to encourage more men to participate in weeding. They believed that it was easier to weed crops planted in rows

than when they are broadcast. RWANU will continue promoting time and labor saving technologies and farming practices to enhance active participation of men and women in farming.

- Galla goats adapt well and are appreciated by beneficiaries: Galla goat management in the drier parts of Karamoja has shown more tolerance and endurance to climatic conditions than Toggenburg goats. RWANU will continue sourcing Galla bucks and does for distribution in the drier areas. Toggenburg will be distributed in the greenbelt areas where the climatic conditions are conducive to them.
- WLG members are keen to put savings for animal health care: using savings as pre-requisite to receive goats is expected to lead to higher survival rates of the distributed goats as these savings can be used for the animals' health care,
- Getting reliable Early Warning information remains a challenge in Karamoja. Early warning information which covers the whole of Karamoja does not reflect the situation in the many microclimates of the region. In FY14, the rainfall ended early in 2013 and started up to three months late in 2014. Going forward RWANU will closely monitor the situation on the ground and provide appropriate advises to target communities through the FEWs network.

Challenges

- Working with male only youth groups for honey production was not successful as initially planned. Youth are more interested in income generating activities that generate quick returns as opposed to enterprises such as honey that require at least one year to generate significant returns. Mixed groups of men and women were found more feasible and cohesive to promote honey production.
- The adverse weather conditions in most of the sub-counties have affected the application and adoption of on farm improved farming practices by farmers. IN FY 2015 RWANU will support crop diversification through the introduction of drought tolerant and early maturing crop varieties.
- Gold mining and charcoal burning are deemed more lucrative livelihoods by farmers with many farmers shifting to these activities in some locations. In FY 2015, the RWANU team will prioritize the targeting of our support to areas where there are limited opportunities for income generation.
- Late procurement for seeds delayed the onset of timely planting. Farmers expectations were hurt, and demonstration gardens failed to provide lessons for some crop varieties. Multiple year restricted goods approval for the seeds purchase was granted in 2014. FY 2015 seed acquisition will begin early.
- The outbreak of foot and mouth disease and the resultant quarantine affected procurement of oxen for animal traction training and also the purchase of goats for the livestock component.
- Reported famine in some sub-counties e.g. Ngoleriet, Lokopo, Lotome forced farmers to migrate to food secure areas like Teso region. This reduced the number of active members in the farmer groups who turn up for trainings & group garden work and savings as well.

- Farmers are requesting introduction of time saving technologies to help farmers overcome labor shortages. RWANU will continue the support to block farm groups with oxen and ox plows and horticulture groups with drip irrigation kits.

SO2 Lessons Learned

- Due to eligibility criteria for food rations and goat groups, a rumor of '*get pregnant and get a goat/ food'* circulated. It is important to continue to clarify and reinforce the purpose of the program activities to mitigate against such rumors.
- Because of farming, there is a drop off in Care Group attendance during the wet season. MCG training activities will be intensified during the dry season.
- Mothers of children aged 2-5 who are included in the MCGs added to the learning and benefited the groups as a whole. However because food ration eligibility was confined to PLW and children under-2 led to these women feeling they were missing out. However, the experiences and lessons learned of extending the MCG eligibility membership, above PM2A criteria, is beneficial for future programming.
- Using the integrated approach to multiple service delivery at the FDP (e.g.outreach of mother and child health activities; immunization, antenatal and post natal care, family planning, cooking demonstrations etc.) has contributed to increased coverage of services.
- The community in Acherer parish in Nadunget sub-county, raised funds for the maintenance of their borehole. This increased the community's ownership of the borehole. In the roll out of the WASH activities in other villages, the project will secure community contributions before investing in inputs and encourage politicians and community leaders to embrace the ideas of water user fees and collection for operations and maintenance of boreholes to promote sustainability.
- CLTS has been implemented by other NGOs and the district but follow-up monitoring was lacking; learning from their experiences guided the team to incorporate sufficient and appropriate follow-up in activities.
- 99% of MCGs are active and there is growing evidence from reports from HPs and interviews with HHCGs of positive behavior change on IYCF practices.
- 80% of LMs have been trained on identification of severe acute malnutrition through using MUAC. The result has been successful building of external linkages with the Village Health Workers (Team) of the MoH, prompt referral and treatment of cases and identification of defaulters of the health facility nutrition services
- The introduction of the CSC increased the interface between health providers and users of health services resulting in more ownership of health services, more involvement of the Health Unit Management Committees, increased awareness by the community about quality health service delivery.

Challenges

- Inclusion criteria to qualify as an eligible beneficiary for food distribution is to be a pregnant and/or lactating mother with a child under two years. This criterion is reported to be affecting LM attendance of MCGs meetings and mothers' attendance at HHCGs for those members whose children are 3 -5 years. Health Promoters are reinforcing the MCG

approach as a peer-to-peer health promotion for MCH and nutrition behaviour change and not associating the MCG approach with food distribution.

- Attendance at ANC/PNC services, though improved, is still affected by other domestic chores and the need to engage in income generating activities. This affects mothers bringing their children for treatment for malnutrition, leading to high defaulter rates in some areas. These challenges are being addressed through health workers providing group counseling before the start of the ANC/PNC clinic on adhering to check-up schedules and proper nutrition. VHTs do follow-up on defaulters of the Community Monitoring of Acute Malnutrition (CMAM) in the community and encouraging them to go to the health facilities. The roll out of MCG Module 2 – Maternal Health and Nutrition will reinforce the messages to be delivered by the LMs through home visits and HEs during their health education talks.
- Health facility staff consider GMP activity as an additional work load. Recently, the GMP indicators are now integrated in the revised MoH Health Information System, so now GMP will be compulsory for health staff at health facilities as part of their regular work.
- Logistical challenges faced by outreach vehicles (mechanical problems or poor maintenance) are affecting the implementation of planned activities as scheduled. A contract between Concern and the district health office in collaboration with CUAMM supports integrated outreach activities including, among others, the maintenance and repairs of vehicles.
- The community does not value the indirect benefits of WASH as compared to the direct hand-outs of food directly benefiting them. Given this, CLTS was chosen as a participatory approach to engage the community in healthier behavior changes.
- Enforcing the food distribution conditionality requirements (antenatal care three times during pregnancy, Vitamin A supplementation, measles vaccination (as a proxy for immunization) and household care giver group (HHCG) attendance). Discussions are underway with the project's technical advisers to review this conditionality.

ANNEX C

Success Stories

UGANDA: INTRODUCING IMPROVED MAIZE VARIETIES THROUGH DEMONSTRATION PLOTS

The Resilience through Wealth, Agriculture and Nutrition (RWANU) Project is a five-year USAID Food for Peace Development Food Assistance Program (DFAP), awarded to ACDI/VOCA on August 10, 2012. The project works to reduce food insecurity among vulnerable people in sixteen sub-counties in the Southern Karamoja region in Uganda. The program has two strategic objectives: 1) Improved access to food for men and women; and 2) Reduced malnutrition in pregnant and lactating mothers and children under five.

Traditionally garden preparation in the Southern Karamoja has included bush burning followed by broadcasting of seeds. Locally available seeds were recycled and planted from one season to another. Crop yields were dependent on weather conditions and progressively lower because of the seed viability.

Betty Abura, like many of the small holder farmer in the Timu village in Lokopo Sub-county, in the Napak District, had been trying hard to improve crop yields but with no clear success. Frustrated she burned charcoal to supplement her income. However in February 2013, Betty met with an ACDI/VOCA RWANU field extension worker and decided to enroll in the Kiteriamunai farmer training group to receive training in agronomic practices. She provided land for a group demonstration plot and was elected the lead farmer. Under the RWANU project, farmers learn improved farming practices by directly providing labor on demonstration gardens under the guidance of a field extension worker. Betty narrates that, “As soon as I got the basic farming skills, I got back to my farm and started doing what I had learnt.” Betty was an early adopter, whom other farmers first laughed at but later copied.

In March 2014, Betty ploughed land sited in an abandoned kraal. She planted 1.5 acre of MM3 maize, distributed by RWANU. She line planted at the recommended spacing of 75 cm between rows and 30 cm within rows. Weeding was much easier in row planted gardens, and according to Betty, “For that reason even men helped in weeding, because they found that garden more organized.”

By Jovani Angella September 29, 2014 *ACDI/VOCA*

Harvest time brought significant gains for this early adopter

Betty harvested 11 bags of threshed maize, twice the productivity of her neighbors. She is thankful for RWANU and its practical techniques, but especially for the field extension worker, who played a big role. Today, Betty no longer burns charcoal, has enough food for her family and she expects to repay all of her debts. Future plans include expanding her farm, all the while using improved farming practices.

UGANDA: SOUTHERN KARAMOJA WOMEN SEIZE THE OPPORTUNITY TO CONTROL THEIR OWN INCOME

According to the Resilience through Wealth, Agriculture and Nutrition (RWANU) project's 2012 baseline, 94% of the population in the project area of southern Karamoja live in poverty and only 27% had used any form of financial services. There are only two banks in southern Karamoja, both of which are located in Moroto town. Since 2012, RWANU has provided training in farming as a business and facilitated the formation of 338 saving and credit groups that have benefited 7,000 farming, livestock and honey producers. These groups pool savings from producers and provide a source of credit to members with minimum charges.

One beneficiary of the project is Helen Irega, who farms on four acres in Loperot parish, Namalu sub-county. She grows maize, beans and sorghum for subsistence and sale. In 2013, she joined 24 others to form the Aoyayelal village saving and credit group and was elected group chairperson.

By the end of the 2014 harvest, Helen had saved Ugx 265,000 (approximately US$104) as part of group savings of Ugx 4,175,000 (approximately US$1,670). Her savings came from sales of local brew and agriculture produce. Her access to this saving and credit group made a substantial difference she relates, "*I would have lost all my money, if I had not joined this group. We meet monthly to take individual savings. We encourage each other to prepare for future eventualities and investment needs.*"

ACDI/VOCA

Savings and credit group meeting

Women contribute about 80% of the group savings and have been empowered through the groups. Helen explains, *"Unlike before when men kept the money for women, we have now seized the opportunity to take control of our incomes. Nowadays I am more than just a housewife; I am also a member and chairperson of a village bank. I see a lot of opportunities to re-invest in my farm and double my income".* Many of the members have used credit for buying farm seeds, hiring tractors, oxen and transporting produce to markets, which will enable them to grow their business and increase their incomes.

The RWANU Project is a five-year USAID Food for Peace Development Food Assistance Program (DFAP), awarded to ACDI/VOCA on August 10, 2012. The project works to reduce food insecurity among vulnerable people in sixteen sub-counties in the Southern Karamoja region in Uganda. The program has two strategic objectives: 1) Improved access to food for men and women; and 2) Reduced malnutrition in pregnant and lactating mothers and children under five.

MALNUTRITION IS NOT NEW TO KARAMOJA, BUT RWANU OFFERS HOPE FOR THE HUNGRY

Loduk Anyakun was born on March 31, 2013 in the Aoyareng village, of the Loregae Sub-county, I the Nakapiripirit district. At nine months she was malnourished weighing only 3.9 kg, about half of the normal weight. Dehydrated and sad looking, her mother Alice Nakiru was begging for food, saying "akoro, akoro, akoro" (meaning "we are hungry") when met by members of the ACDI/VOCA Resilience through Wealth, Agriculture and Nutrition Project (RWANU) project team in South Karamoja. Her other three children were also malnourished and Alice struggled daily to feed the household.

Excitement and anxiety filled her face, when she was told that Loduk was eligible for a monthly food ration and an extra ration for her household starting in January 2014, under the RWANU food distribution program targeting pregnant and lactating women and children under two years. Every month, ACDI/VOCA provided Alice a corn-soy blend, green peas and vegetable oil. Thanks to the food rations and participation in the nutrition activities, four months later, Loduk weighed 5.4 kg. Alice proudly relates, "You can see the difference in my daughter's health. Loduk has enjoyed good health since joining the food distribution program." "Through the outreach at the food distribution point, Loduk has received all vaccinations including vitamin A and dewormers. I don't worry as much for my children, I am hopeful they will survive," she adds.

ACDI/VOCA

Alice and Laduk four months after participating in RWANU

Back in her village, Alice has joined the household caregivers group where lead mothers in the community provide advice. The knowledge she has gained through the project has empowered her, "Today I'm convinced about the need to control the size of my family and better ways of cooking without losing nutrition value in the food."

The RWANU project is a five-year USAID Food for Peace Development Food Assistance Program (DFAP), awarded to ACDI/VOCA on August 10, 2012. RWANU takes a holistic approach to reducing vulnerability to food insecurity, by integrating health and nutrition into agriculture. The program believes that improved farming practices will increase food availability and reduce malnutrition. Beneficiaries are given health education messages such as hygiene, child nutrition, sanitation, immunization, antenatal care, and family planning.

UGANDA: WEEDING OUT MALNUTRITION, ONE CHILD AT A TIME

Food insecurity in the Karamoja region leads to one of the highest child stunting and underweight rates in Uganda. Not only is the rainfall erratic but there is limited dietary diversity. Since August 2012, ACDI/VOCA in partnership with Concern Worldwide under the Resilience through Wealth, Agriculture and Nutrition (RWANU) project has provided a package of program activities to improve nutrition and access to food. The RWANU project is a USAID Food for Peace Development Food Assistance Program that focuses on preventing malnutrition during the first 1,000 days of life through a package of curative and preventative health care, behavior-change training activities, and consumption of micro- and macronutrients.

Maria Tiyan is a self-confessed promoter of community based nutrition assessment and participatory health education in the Nakobekobe village, in Nabilatuk sub county, of the Nakapiripirit district. When her training by RWANU started in November 2013, she joined 14 caregivers in her community and started a seemingly modest process of home visits to deliver health education and nutrition assessment for children in her community.

Although Maria has no formal education, she can measure and interpret the mid upper arm circumference for children to determine a child's nutrition status. *"I enjoy seeing children healthy and feeding well, if any mother does not know what to feed their children I will tell them,"* she states proudly.

The nutrition assessment sessions are repeated every three months to follow up on progress of individual children. "*We want the participation not only of fathers and mothers, but also of the whole community in analyzing why some seemed to thrive while others did not,"* Maria explains.

According to Maria, the experience in her village has found that *"the health education and subsequent home visits have improved women understanding of the nutrition well-being of children, and have helped men and women to plan a balanced diet and frequent feeding for children*".

ACDI/VOCA

RWANU caregivers deliver health education and nutrition assessments

Attachment H: ARR Technical Sectors Tracking Table

Revised October 14 2014

Country	Uganda
Awardee	ACDI/VOCA
Program Name	RWANU
Start Date of Award	Aug-12
End Date of Award	Aug-17

Instructions: For each technical sector and sub-sector in the drop-down menus please indicate whether the food assistance project worked on the specified activities during the reporting fiscal year. f the project did not implement activities in a particular sector or sub-sector during the FY the column for that sector or sub-sector should be marked "no " even if these activities were included in the project's approved PREP(s). Note that this is a tracking tool for FFP and that more boxes with "yes" responses is not better or even more desirable.

A.	Maternal Child Health & Nutrition	Works on Topic Area?
	Conditional Food Transfer	
1	Cash or food vouchers for nutrition	No
2	Supplementary Feeding P/L Women	Yes
3	Supplementary Feeding Prevention Kids 6-24 mos	Yes
4	Support for local production of specialized nutrition foods (i.e. fortified flours pastes etc.)	No
5	Household/Protection Rations	Yes
	Social and Behavior Change Communication	
6	Promotion of optimal breastfeeding during the first six months	Yes
7	Promotion of optimal complementary feeding starting at 6 months with continued breastfeeding to 2 years of age and beyond	Yes
8	Promotion of optimal nutritional care of sick children	No
9	Promotion of Optimal Women's Nutrition (15-49)	No
10	Prevention of Vitamin A deficiency in women and children	No
11	Promotion of adequate intake of IFA and prevention and control of anemia	No
12	Promotion of adequate intake of iodine	No
13	Baby WASH*	No
14	Essential Hygiene Actions	Yes
15	Care Group	Yes
16	Peer Support Groups (mothers mens grandmothers etc)	Yes
17	Positive Deviance Hearth	No
18	Community conversation/discussion groups	Yes
19	Early Childhood Development (ECD)	No
20	Mass communication campaigns	No
21	Home Visit/Outreach for nutrition counseling	Yes
22	Home Visit/Outreach for other MCH related outcomes	No
23	Other SBCC (Specify)	
	Health Services	
24	Child health days	No
25	Baby Friendly hospital Initiative	No
26	Integrated Management of Childhood Illness(IMCI)	No
27	Community Case Management	No
28	Growth Monitoring and Promotion (including height for age)	Yes
29	Community nutrition screening (MUAC or weight for height)	Yes
30	Mobile Outreach/clinics	Yes
31	Facility and Community Health Staff capacity building	Yes
32	Deworming	No
33	Iron FA Supplementation Reduce Iron Deficiency Anemia	No
34	Vitamin A Supplementation	No
35	Immunization	No
36	ORT for Diarrhea	No
37	Malaria Prevention	No
38	Newborn Care	No
39	Ante Intra Postpartum Care	No
	Family Planning Services	
40	Referral of Family Planning Services	Yes
41	Family Planning Education (i.e. methods)	No
42	Healthy Timing and Spacing of Pregnancy Education	No
	Community/Integrated Management of Acute Malnutrition	
43	Community based screening/detection	Yes
44	Referral to health center	Yes
45	Recuperative feeding for children under 5 with MAM	No
46	Counseling related to acute malnutrition	No
47	Follow-up of referred children	Yes
48	Other (Specify)	

B.	Integrated activities/sectors	Works on Topic Area?
49	Agriculture Livelihoods	Yes
50	Kitchen or Homestead Gardens	No
51	Natural Resource Management (NRM) Interventions	Yes
52	Disaster Risk Reduction (DRR)	Yes
53	Water Sanitation and Hygiene (WASH)	Yes
54	Gender Integration	Yes
55	Literacy/Adult Education	No
56	Other (Specify)	

C.	HIV	Works on Topic Area?
57	Food Insecurity Mitigation	No
58	Prevention of HIV: Promote VCT	No
59	Nutritional Assessment & Counseling	No
60	Direct Supplementary or Therapeutic Feeding Safety Net	No
61	Feeding for Children in Adversity	No
62	Clinic as entry or targeting point	No
63	Cookstoves	No
64	Other (Specify)	

D.	TB	Works on Topic Area?
65	Food Insecurity Mitigation	No
66	Prevention of HIV: Promote VCT	No
67	Nutritional Assessment & Counseling	No
68	Direct Supplementary or Therapeutic Feeding Safety Net	No
69	Feeding for Children in Adversity	No
70	Clinic as entry or targeting point	No
71	Other (Specify)	

E.	Uses of Food	Works on Topic Area?
72	Food for Work (FFW)	No
73	Monetization (MTZ)	No
74	School Feeding	No
75	Humanitarian Assistance (HA)	No
76	Other	

F.	Sustainability	Works on Topic Area?
77	Capacity Building (Training/Technical Assistance)	Yes
78	Transferring Functions to Local/National Governments	No
79	Economic Incentives	No
80	Recurring Costs Covered by End Users	Yes
81	Private Sector Used for Service and/or input Delivery	Yes
82	Long Term Partnerships Formed with other Development Actors	No
83	Environment of Investments and not Entitlements Fostered	No
84	Household and/or Community Resilience Enhanced	Yes
85	Other (Specify)	

G.	Program Approaches	Works on Topic Area?
86	Market-driven value chains	Yes
87	Village banking and other community savings arrangements	Yes
88	Development micro finance institutions	No
89	Micro enterprise development	Yes
90	Direct Distribution of Commodities	Yes

	Country	Uganda
	Awardee	ACDI/VOCA
	Program Name	RWANU
	Start Date of Award	Aug-12
	End Date of Award	Aug-17
91	Direct Distribution of Project Purchased Inputs	Yes
92	Fee-for-Service Models	No
93	Facilitation Approach	No
94	Village Savings and Loan Associates	Yes
95	Business Training Provided	Yes
96	Project Funded Extension Agents	Yes
97	Cash or Food voucher distribution	No
98	Strengthening Host Government Extension Systems	Select Y/N
99	Other (Specify)	
H.	**Types of Interventions**	**Works on Topic Area?**
100	Safety-Net	No
101	Community Strengthening	Yes
102	Infrastructure	No
103	Education	No
104	Other (Specify)	
I.	**Crop production**	**Works on Topic Area?**
105	Adaptive research	Yes
106	Transfer of improved technologies/practices	Yes
107	Input provision (seeds/fertilizers)	Yes
108	Post-Harvest Technologies	Yes
109	Aflatoxin (and other mycotoxin) reduction	No
110	Improved Seeds	Yes
111	Fertilizer	No
112	Compost	Yes
113	Pesticides	No
114	Implements (plows hoes etc)	Yes
115	Irrigation	No
116	Horticulture	No
117	Farmer Field Schools	No
118	Lead Farmers	No
119	Land Access for the Most Vulnerable	No
120	Other (Specify)	
J.	**Livestock production**	**Works on Topic Area?**
121	Animal health	Yes
122	Genetic improvements	Yes
123	Improved feeding and management practices	Yes
124	Animal donation/multiplication schemes	Yes
125	Cattle	No
126	Small Ruminants	Yes
127	Poultry	No
128	Eggs	No
129	Dairy	No
130	Community Animal Health Workers	Yes
131	Other (Specify)	
K.	**Natural Resource Management (NRM)**	**Works on Topic Area?**
132	Soil conservation	Yes
133	Water conservation	Yes
134	Watershed management	No
135	Forestry/agroforestry	No
136	Water Harvesting	No
137	Governance and Management of Common Assets	No
138	Other (Specify)	
L.	**Market and Input Access**	**Works on Topic Area?**
139	Market information systems	No
140	Market analyses	No
141	Facilitating market linkages e.g. trade shows/intro to buyers/other sales leads	Yes
142	Forward contracts	No
143	Product development including development of brands	No
144	Product certification	No
145	Producers/Marketing Associations	No
146	Business Training	Yes
147	Bulk Purchasing of Inputs	Yes
148	Bulk Sales of Products	Yes
149	Processing	No
150	Facilitating Private Sector Involvement	Yes
151	Other (Specify)	
M.	**Credit Provisioning**	**Works on Topic Area?**
152	Provided by awardee	No
153	Provided through collaboration with another source e.g. NGO specialized in credit; microfinance institution non-bank financial institution or commercial bank	No
154	Community-based revolving credit activities both cash and in-kind	Yes
155	Community-based savings groups; use of social fund loan funds or accumulated savings and dividend at share-out	Yes
156	Other (Specify)	
N.	**Water, Sanitation, and Hygiene (WASH)**	**Works on Topic Area?**
157	Water Supply-Groundwater (e.g. hand-dug or drilled wells/boreholes deep springs)	No
158	Water Supply-Surface Water (e g. e.g. rivers lakes shallow springs)	No
159	Water Supply-Rainwater	No
160	Water Supply-Other	No
161	Water Distribution-Handpumps and/or Community Taps	No
162	Water Distribution-Household Taps	No
163	Water Distribution-Household Plumbing	No
164	Water Distribution- Other	No
165	Water Treatment- Disinfection (e.g. chlorine UV)	No
166	Water Treatment- Other (e.g. coagulation/sedimentation contaminant removal)	No
167	Water Quality Monitoring (e.g. pathogen indicators turbidity heavy metals)	No
168	Sanitation- Unimproved Latrines (e.g. pit arborloo)	Yes
169	Sanitation- Improved Latrines (e.g. VIP pour-flush composting)	No
170	Sanitation- Flush Toilet or equivalent	No
171	Sanitation- Handwashing Stations (e.g. tippy tap formal structures)	Yes
172	Hygiene & Behavior- Educational or Community participation model (e.g. CLTS PHAST school-led programs)	Yes
173	Operations & Maintenance (O&M) for Systems- Community-led (e.g. Village Water Committee Irrigation User Associations)	No
174	O&M for Systems- External-led (e.g. partner-led O&M or private sector)	No
176	Usage Fees Established for Water/Sanitation	No
177	Other (Specify)	
O.	**Economic analyses**	**Works on Topic Area?**
178	Cost/benefit analyses	No
179	Farm budgeting	No
180	Other (Specify)	

	Country	Uganda
	Awardee	ACDI/VOCA
	Program Name	RWANU
	Start Date of Award	Aug-12
	End Date of Award	Aug-17
P.	**Disaster Risk Reduction (DRR)**	**Works on Topic Area?**
181	Early Warning and Response Systems	Yes
182	Vulnerability Analysis and Mapping	Yes
183	Safety Net Programs	No
184	Community Based Preparedness Plans	Yes
185	Climate Change Programming (including but not limited to climate smart agriculture)	No
186	Conflict Mitigation	Yes
187	Shelters	No
188	Strengthened Government Response Capacity	No
189	Other (Specify)	
Q.	**Infrastructure**	**Works on Topic Area?**
190	Roads	No
191	Irrigation systems	No
192	Soil conservation structures	No
193	Water conservation structures	No
194	Storage structures (e.g. silos)	No
195	Other family level infrastructure (greenhouses livestock shelters)	Yes
196	Other (Specify)	
R.	**Organization capacity building**	**Works on Topic Area?**
197	Producers/marketing associations	Yes
198	Irrigation users associations	No
199	Other (Specify)	

ANNUAL SURVEY FOR THE RESILIENCE THROUGH WEALTH, AGRICULTURE AND NUTRITION PROJECT

Final Survey Report Submitted to ACDI VOCA by Service for Generations (SFG) International

June 2014

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The contents of this report are the responsibility of Service for Generations (SFG) International and do not necessarily reflect the views of USAID or the U.S. Government.

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LIST OF ACRONYMS AND ABBREVIATIONS

BMI	Body Mass Index
DHS	Demographic and Health Survey
FANTA	Food and Nutrition Technical Assistance III Project
FFP	Office of Food for Peace
FTF	Feed the Future
HAZ	Height-for-Age Z-Score
HH	Household
HIV	Human Immunodeficiency Virus
IYCF	Infant and Young Child Feeding
KI	Key Informant
MAD	Minimum Acceptable Diet
MCC	Maternal Child Care
NGO	Non-Governmental Organization
NRM	Natural Resource Management
ORT	Oral Rehydration Therapy
PPS	Probability Proportional to Size
QA	Quality Assurance
RWANU	Resiliency through Wealth, Agriculture, and Nutrition in Karamoja
UGX	Ugandan Shilling
UNICEF	United Nations Children's Fund
USAID	U.S. Agency for International Development
USD	United States Dollar
VSG	Village Savings Group
WFP	World Food Program
WHO	World Health Organization
SFG	Service for Generations
MMR	Maternal Mortality Rate
DPT	Diphtheria, Pertusis and Tetanus
OPV	Oral Polio Vaccine
MCH	Maternal Child Health
WDDS	Women Dietary Diversity Score
CAG	Community Action Group
PLW	Pregnant and Lactating Women
FMNR	Farmer Managed Natural Regeneration Practices
SD	Standard Deviation
FAO	Food and Agricultural Organization
ANC	Antenatal Care

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Executive Summary

Introduction

The U.S. Agency for International Development (USAID) Office of Food for Peace (FFP) awarded funding to ACDI VOCA to design and implement a multi-year Title II development food assistance program referred to as Resiliency through Wealth, Agriculture, and Nutrition in Karamoja (RWANU). The program is implemented in partnership with Concern Worldwide and Welthungerhilfe, with the main purpose of improving long term food security in Karamoja. The project is implemented in sixteen sub counties in the South Karamoja districts of Amudat, Moroto, Napak and Nakapiripirit.

Following the baseline survey conducted in February 2013, an annual survey was conducted in March 2014 with the aim of assessing the extent to which the RWANU project has progressed in meeting its intended results. Specifically, the annual survey has provided data which can be used to track changes in the beneficiary-based performance indicators. The survey was used to specifically establish the current status of different key annual indicators which are prescribed in the performance monitoring plan for the RWANU program.[1] During the survey, information was collected on: agricultural related indicators, child's health and nutrition, women's health and nutrition, household sanitation practices and participation in community advocacy groups.

Methods

The annual survey was a cross sectional descriptive study which was conducted using quantitative methods of data collection within the four districts targeted by RWANU (Amudat, Napak, Nakapiripirit and Moroto). The survey was a beneficiary based assessment which was designed to be statistically representative of the beneficiary groups which had participated in the implementation of different project activities. The survey targeted beneficiaries being supported through the following program intervention categories: Horticulture, crop farming, livestock keeping, bee keeping, maternal child health and community advocacy group (CAG) members. Some beneficiaries received support for more than one area of project support, for example some farmers were supported in both horticulture and crop farming, while others were supported in both livestock keeping and MCH. Because of that overlap, 903 interviews (realized sample size) were conducted altogether with 893 project beneficiaries.

The sample for each beneficiary group was selected using a two-stage sampling approach which involved selection of beneficiary groups within each targeted district (first stage) and then selection of beneficiaries within each sampled beneficiary group (second stage). The sampling frame was constructed from the existing list of project beneficiaries in horticulture, crop farming, livestock keeping, bee keeping, MCH and community advocacy group members. Because of variation in the numerical

[1] The annual survey measurements will be used to calculate change in the annual program indicators and undertake a statistical test of differences in the indicators at completion of each annual program cycle, when the same survey is conducted again in the same program areas. Changes in the annual program indicators will be measured with the subsequent annual survey rounds, but it will not be possible to make statements about attribution or causation.

distribution of the beneficiary groups within the different project districts; different sampling procedures (mainly simple random sampling and systematic sampling) were used to select the required beneficiary groups.

Questionnaires and training materials were developed and finalized based on consultations with ACDI VOCA monitoring and evaluation (M&E) team. The fieldwork, including training, data collection, and data entry, began towards end of February 2014 and concluded in April 2014. Limitations and challenges experienced during the research process include difficulty recruiting experienced local interviewers in the Karamoja region, logistics and transportation constraints, difficulty accessing some villages, the length and complexity of the household survey questionnaire and limitations of self-reported data.

Key findings

The annual survey findings cover the following broad areas: Characteristics of the study population, agricultural related indicators, child's health and nutrition, women's health and nutrition, household sanitation practices and participation in community advocacy groups (CAGs).

Characteristics of the Population: The results of the household survey indicate that the average household in the program area includes 5 household members. Children ages 0-59 months are household members in nearly 82.3 percent of all households. Children aged 6-23 months were household members in 36.6 percent of all beneficiary households. The majority of household heads have no formal education (80.3 percent). Most households include an adult male and female (87.1 percent).

Agriculture: The most common crops grown are maize, sorghum, beans, cabbages, onions and Sukuma wiki, and the most common animals raised are goats, cattle and poultry. Overall, 26.9 percent of farmers used financial services in the form of savings, agricultural credit, and/or agricultural insurance in the past 12 months. The survey showed that 78.2 percent of livestock farmers accessed government or private sector veterinary services. Most of the veterinary services were utilized by mainly livestock farmers who rear goats (98.4 percent) and cattle (18.9 percent).

The survey showed that; most (91.7 percent) farmers practiced at least one value chain activities promoted by the project in the last 12 months, 52.5 percent of farmers used improved storage practices in the past 12 months mainly in the form of sacks or bags on pallets, granary with rat guard and plastered walls, and drying crib.

Survey results showed that among crops; tomatoes had the highest gross margin (USD 500/hectare), followed by groundnuts (USD 384/hectare) while the crop with the least gross margin was sorghum (USD 79 per hectare). These results indicate that growing tomatoes within the study area is more profitable in comparison to the other crops. Tomatoes have the highest gross margin because their input costs in comparison to other crops was very low at USD 68.

For animals, cattle had the highest gross margin of USD 273 and USD 0.2 per animal for meat and milk, while poultry had the lowest gross margin of zero. Sheep had the second highest gross margin of 15.7, while honey had a gross margin of 13. The survey results indicate that poultry is the least profitable animal farming business for the beneficiaries since the farmer gets a zero net income for every unit of poultry sold.

The survey also showed that only 15.6 percent of surveyed farmers practice Farmer Managed Natural Regeneration Practices (FMNRs). Most farmers are engaged in the following: soil bunds (18.4 percent), retention of plant residues in crop fields (18.9 percent) and construction of water catchments (11.6 percent).

Child health and nutrition: A total of 27.4 percent of children under 5 years of age in the survey population show signs of being moderately or severely underweight (less than two SDs below the median). Male children are slightly more likely to be underweight than female children (29.6 percent versus 25.0 percent). A total of 36.5 percent of children under 5 years of age in the survey population show signs of being moderately or severely stunted (less than two SDs below the median). The prevalence of stunting is higher in male children (40.0 percent) than in female children (32.8 percent). in comparison to the 2013 baseline survey, 38 percent and 20 percent of children under five years of age were stunted and underweight respectively.

Only 11 percent of children aged 6-23 months are receiving a minimum acceptable diet (MAD). This result is largely driven by the lack of a diverse nutritional diet. Only 26.9 percent of children 6–23 months of age received foods from 4 or more food groups. Only 20 percent of children ages 0-6 months are exclusively breastfed.

Overall, 36.7 percent of all children under 5 years of age had diarrhoea in the two weeks preceding the survey (higher than the 2013 baseline survey rate of 23 percent). Among children with diarrhoea, caretakers reported that 13.5 percent had blood in their stools. Children in households with toilet facilities at home (37.5 percent) are less likely to get diarrhoea than those without toilet facilities (41 percent)). Caretakers reported seeking advice or treatment for 82 percent of the children with diarrhoea, and 60 percent of those children were provided with oral rehydration therapy (ORT).

Women's Health and Nutrition: The nutritional status of women aged 15-49 years, as measured by the Body Mass Index (BMI), is generally good despite a lack of dietary diversity. The majority of women aged 15-49 years in the survey population (78 percent) have a BMI within the normal range (18.5-24.9), while 21.1 percent are considered underweight (BMI less than 18.5). Dietary diversity for women aged 15-49 years is low and most of them consume, on average, 3.3 food groups of the nine basic food groups. Starchy staples (97 percent), dark green leafy vegetables (82 percent), vitamin A rich fruits and vegetables (42 percent) are the most frequently consumed food groups, while organ meat (4 percent) and eggs (8 percent) are the basic food groups that women consume least often.

The survey showed that 65 percent of women aged 15-49 years and currently living with a man reported that they make decisions either jointly with their husbands regarding seeking health services for their own health; seeking health services for their children's health; how to spend money they have earned; and how to use productive assets. Only 4 percent of women make such decisions alone without involvement of their husbands. Overall women are more likely to make decisions jointly with their husbands than when alone.

Three-quarters (75 percent) of mothers of children aged 0-23 months, reported attending four or more antenatal visits and 61 percent of the mothers were accompanied by their spouses to the antenatal clinics.

Household sanitation practices: Whereas 28.3 percent of the beneficiaries who were visited had an observable hand washing areas in their homes; only 45.2 percent had water and soap at the hand washing station. The survey also showed that 20.2 of the beneficiaries had a day time toilet facility. When asked about the most important times to wash their hands, 42 percent of household survey respondents named at least three of five critical moments for hand washing, with most of them (92 percent) correctly reporting "before eating" (8 percent) and 40 percent reporting "before preparing food" and 27 percent "after defecation or urination." Only 31 percent of the respondents reported critical moments for hand washing before breast feeding or feeding the child.

Participation in community advocacy groups (CAGs): Participation in CAGs was assessed during the survey and results showed that; 72.1 percent of surveyed beneficiaries were members of CAGs and 88.9 percent of CAG members believe that the groups are highly relevant to the community. Most of the CAG members (76.9 percent) believe that the groups are highly relevant and help in achieving the intended objectives. The survey also showed that most groups (77.8 percent) have a very good relationship with the local leaders.

Table 1 provides a summary of the indices for the annual RWANU program indicators (compared to the 2013 baseline survey findings). The baseline survey was a population based survey and the annual survey was a beneficiary based assessment. The two surveys were done using different sample designs and therefore, all comparisons of baseline and annual survey findings should be interpreted with caution because they have limited validity.

Table 1: Status at a glance table of the 2014 annual survey findings compared to the 2013 baseline survey findings

#	Indicator	Baseline Survey, 2013 (%)	2014 annual survey Values			N (Denominator)
			Male (%)	Female (%)	Total (%)	
1	Percentage of farmers who practiced the value chain activities promoted by the project in the last 12 months	77	91	92	92	700
2	Percentage of farmers who used improved storage practices in the past 12 months	52	51	53	53	238
3	Percentage of livestock owners accessing government or private sector veterinary services (diseases diagnosis and drugs) and livestock vaccination	69	71	82	78	156
4	Percentage of farmers who used financial services (savings, agricultural credit, and/or agricultural insurance) in the past 12 months	27	30	25	27	631
5	Prevalence of stunted children under five years of age	38	40	33	37	241
6	Prevalence of underweight children under five years of age	20	27	25	27	241
7	Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age (WDDS)	2.6		3.2	3.2	234
8	Prevalence of exclusive breastfeeding of children under six months of age	56	15	25	20	36
9	Percentage of children 6-23 months receiving a	7	9	13	11	147

	minimum acceptable diet (MAD)					
10	Percentage of caregivers who know at least 4 of 6 IYCF and 3 of 8 MCH practices[2]	36	-	17	17	236
11	Percentage of respondents who know at least 3 of the 5 critical moments for hand washing	71	-	42	42	236
12	Percentage of households with soap and water at a hand washing station commonly used by family member	4	-	9	9	236
13	Percentage of mothers with children aged 0-23 months who had four or more antenatal visits when they were pregnant with their youngest child	75	-	75	75	165
14	Percentage of children under age of five who had diarrhoea in the prior two weeks	23	38	35	37	267
15	Percent of children under five years old with diarrhoea treated with Oral Rehydration Therapy (ORT)	83	65	71	68	98
16	Percentage of children aged 12-23 months who are fully immunized (BCG, DPT3B, polio3/OPV3, measles/MMR)		10	9	9	216
17	Percentage of farmers adopting Farmer Managed Natural Regeneration practices	16	31	31	31	631
18	Percentage of women ages 15-49 and currently living with a man reporting that she makes decisions either by herself or jointly with the man regarding seeking health services for her own health; seeking health services for her children's health; how to spend money she herself has earned; and how to use productive assets			65	65	414
19	% of CAG members reporting that its meetings are useful and achieving their objective				76.9	36
20	Gross margin per unit of land, crop or animal of selected product (crops/animals/ honey)					
	Crops	**(Gross Margin per ha in USD)**				
	Maize	192				
	Beans	127				
	Ground nuts	384				
	Sorghum	79				
	Cabbage	140				
	Tomatoes	500				
	Sukuma wiki	188				
	Onions	339				
	Animals	**(Gross Margin per ha in USD)**				
	Cattle	272.6				
	Cattle milk (litres)	0.2				
	Goats	8.8				
	Goat milk (litres)	0				
	Sheep	15.7				
	Poultry	0				

[2] **The baseline indicator is different and is "Percentage of caregivers who know at least 7 of 14 IYCF and MCH practices**

	Honey	13

CHAPTER ONE: INTRODUCTION

1.1 Background

The U.S. Agency for International Development (USAID) Office of Food for Peace (FFP) awarded funding to ACDI VOCA to design and implement a multi-year Title II development food assistance program referred to as Resiliency through Wealth, Agriculture and Nutrition in Karamoja (RWANU). The program is implemented in partnership with Concern Worldwide and Welthungerhilfe, with the main purpose of improving long term food security in Karamoja.

RWANU was designed to respond to FFP's overall strategic objective for the Title II program in Uganda, which is to: reduce food insecurity among chronically food insecure households. The project is implemented in sixteen sub counties in the South Karamoja districts of Amudat, Moroto, Napak and Nakapiripirit. The program operates in three livelihood zones, namely: the agro-pastoral Karamoja (for livestock and sorghum); the agricultural —green belt Eastern lowland zone (for maize, beans and rice); and the central and southern Karamoja pastoral zone.

1.2 Program results framework

The program implements a comprehensive package of nutrition, health, hygiene and livelihood interventions to households and communities which are expected to result in food security and sustainable livelihoods. Figure 1 shows the results framework which highlights the program goal, strategic objectives and intermediate results.

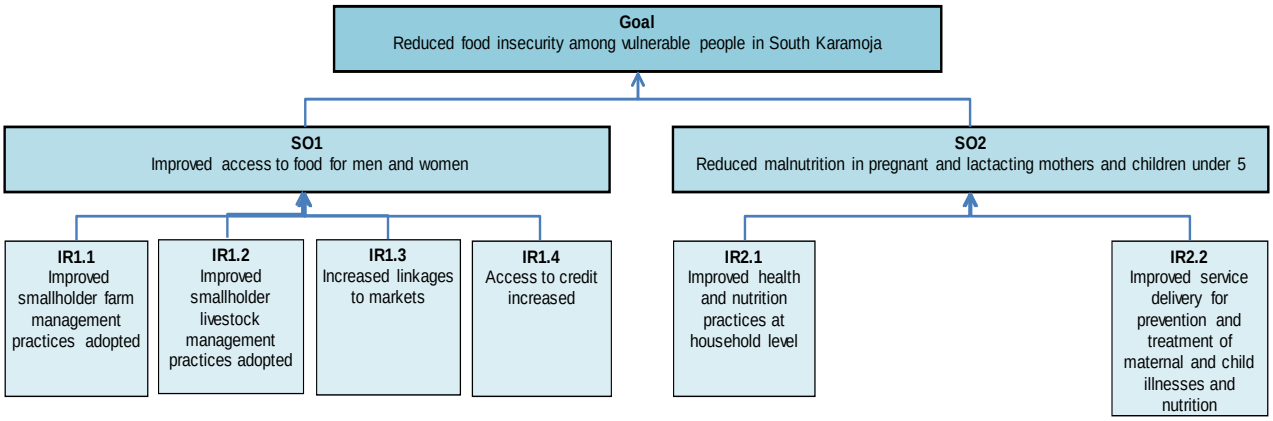


Figure 1: Program results framework

Strategic objective 1: RWANU implements interventions which are tailored to the three different livelihood zones in order to increase access to food for men and women.

The program activities aim at reducing the risks associated with rain-fed agriculture, identifying and promoting low-risk, higher-return commodities and increasing livestock ownership while at the same time drawing households into market systems. RWANU builds the capacity of farmer groups and small producer groups through training in technical skills, savings mobilization, basic business skills and marketing.

Strategic objective 2: In order to reduce malnutrition among pregnant and lactating mothers and children under five years of age, activities which focus on preventing malnutrition during the first 1,000 days of life through a package of curative and preventative health care, behavior change activities, and improved consumption of micro- and macronutrients, are being implemented. RWANU implements activities aimed at; promoting proper infant and young child feeding practices, addressing the nutritional needs of pregnant and lactating women (PLW) and children under 2 years of age. The activities are being implemented through the mother care groups (MCG), male change agents, livelihood trainings, opinion leaders and social behavior change activities.

The program also supports **cross-cutting activities** which promote gender equity by including *both* men and women in project activities, facilitating women's participation without overburdening them, and ensuring that both men and women engage in remunerative production for the market. Conflicts are mitigated through stakeholder engagement and community dialogues. The program supports the existing regional early warning system and introduces innovative natural resource management technologies.

1.3 Purpose and objective of the annual survey

Following the baseline survey conducted in February 2013, an annual survey was conducted in March 2014 with the aim of assessing the extent to which the RWANU project has progressed in meeting its intended results. Specifically, the annual survey has provided data which can be used to track changes in the beneficiary-based performance indicators. This study was a representative *beneficiary-based (and not a population based)* survey which was used to collect data about RWANU annual indicators (Table 1). During the survey, information was collected on: agricultural related indicators, child's health and nutrition, women's health and nutrition, household sanitation practices and participation in community advocacy groups. Specifically, the survey established the current status of the following key annual indicators for the RWANU program:

a) Percentage of farmers who practiced the value chain activities promoted by the project in the last 12 months
b) Percentage of farmers who used improved storage practices in the past 12 months
c) Gross margin per unit of land, crop or animal of selected product (crops/animals/ honey)
d) Percentage of livestock owners accessing government or private sector veterinary services (diseases diagnosis and drugs) and livestock vaccination
e) Percentage of farmers who used financial services (savings, agricultural credit, and/or agricultural insurance) in the past 12 months
f) Prevalence of stunted children under five years of age
g) Prevalence of underweight children under five years of age
h) Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age (WDDS)

i) Prevalence of exclusive breastfeeding of children under six months of age
j) Percentage of children 6-23 months receiving a minimum acceptable diet (MAD)
k) Percentage of caregivers who know at least 4 of 6 IYCF and 3 of 8 MCH practices
l) Percentage of respondents who know at least 3 of the 5 critical moments for hand washing
m) Percentage of households with soap and water at a hand washing station commonly used by family member
n) Percentage of mothers with children aged 0-23 months who had four or more antenatal visits when they were pregnant with their youngest child
o) Percentage of children under age of five who had diarrhoea in the prior two weeks
p) Percent of children under five years old with diarrhoea treated with Oral Rehydration Therapy (ORT)
q) Percentage of children aged 12-23 months who are fully immunized (BCG, DPT3B, polio3/OPV3, measles/MMR)
r) Percentage of farmers adopting Farmer Managed Natural Regeneration practices
s) Percentage of women ages 15-49 and currently living with a man reporting that she makes decisions either by herself or jointly with the man regarding seeking health services for her own health; seeking health services for her children's health; how to spend money she herself has earned; and how to use productive assets
t) % of CAG members reporting that its meetings are useful and achieving their objective

CHAPTER TWO: SURVEY METHODOLOGY

2.1 Study design:

This was a cross sectional descriptive study which was conducted using quantitative methods of data collection with the main aim of assessing the current status of the 20 key program beneficiary indicators for the RWANU program.

2.2 Study sites and population

The survey was conducted within the four districts, specifically, with in the sub-counties where RWANU is being implemented, as shown below:

Table 2: Districts and sub-counties targeted for the 2014 annual survey

District	Sub counties
Amudat	Karita
Moroto	Nadunget
Nakapiripirit	Kakomongole, Lolachat, Moruita, Nabilatuk, Namalu and Loregae, Lorengedwat,
Napak	Iriiri, Lokopo, Lopeei, Matany, Lotome, Lorengechora and Ngolereit

The survey targeted beneficiaries being supported through the following program intervention categories: Horticulture, crop farming, livestock keeping, bee keeping, maternal child health (MCH) and community advocacy group (CAG) members.

2.3 Sampling plan

2.3.1 Sample size estimation

The normal approximation to the hyper geometric distribution was used to estimate the sample size because all the targeted beneficiary groups were small sized populations. The formula shown below, for small (hypergeometric) populations was used to estimate the sample size for each beneficiary group:[3]

Hypergeometric

$$n = \frac{N^2 p(q)}{(E^2(N-1) + N p(q))}$$

[3] http://uregina.ca/~morrisev/Sociology/Sociology.htm, accessed on February 3rd, 2014.

Where;

- n is the required sample size
- N is the population size
- p and q are the population proportions (q=1-p). For horticulture, crop and animal farmers, the value for the proportion of farmers practicing at least two value chain activities in the past twelve months as reported in the baseline survey for southern Karamoja was 77%. For MCH, the prevalence of underweight women in southern Karamoja which was 27%. There were no values of proportions for bee keepers and CAG members and therefore a proportion of 50% was considered.
- z is the value that specifies the level of confidence which is desired in the confidence interval. Typical levels of confidence for surveys are 95%, in which case z is set to 1.96
- E sets the accuracy of the sample proportions (5%)
- The overall sample was inflated by 10% to cater for the anticipated non-response

Table 3 shows the estimated and realized sample sizes for each beneficiary group that was assessed in the annual survey.

Table 3: Estimated and realized sample size for each beneficiary group

Area of project support	Number of beneficiaries (N)	Estimated sample size	Realized sample size	Response Rate (%)
Horticulture	399	163	146	89.6
Crop farming	4082	256	238	93.0
Livestock keeping	519	179	156	87.2
Bee keeping	200	132	101	76.5
Maternal and Child Health (MCH)	6099	261	226	86.6
Community advocacy group (CAG) members	54	36	36	100
Total	**11,353**	**1,027**	**903**	**87.9**

Some beneficiaries received support for more than one area of project support, for example some farmers were supported in both horticulture and crop farming, while others were supported in both livestock keeping and MCH. As a result, 10-20 percent of the beneficiaries were interviewed twice for different modules (depending on the project support they received). Because of that overlap, 903 interviews (realized sample size) were conducted altogether with 893 project beneficiaries. The variance between the estimated and realized sample size is attributed to the failure to reach some beneficiaries who had either crossed over in to Kenya, were not available at home, or had moved to the food distribution points to receive food.

2.3.2 Sampling procedures

The sample for each beneficiary group was selected using a two-stage sampling approach which involved selection of beneficiary groups within each targeted district (first stage) and then selection of beneficiaries within each sampled beneficiary group (second stage). The sampling frame was constructed from the list of project beneficiaries in horticulture, crop farming, livestock keeping, bee keeping, MCH and community advocacy group members. The sampling frame showed the locations of the project beneficiaries by district, sub-county, parish and village, in addition, it also showed the dates

when the beneficiaries were enrolled on the project services. Because of variation in the numerical distribution of the beneficiary groups within the different project districts; different sampling procedures were used to select each beneficiary group as shown below:

Crop farmers

- The total sample size of 256 was allocated to each targeted district in proportion to the total population of beneficiary farmers in each district; with Amudat and Moroto having the lowest number of farmers of 11 and 9 respectively.
- Secondly, a geographically ordered list of beneficiary groups was prepared by sub-county and district. Because 7 farmers per group were needed, 256/7 (36) farmer groups were selected and finally included in the sample
- The 36 farmer groups were proportionally allocated to each district as follows (2 in Moroto, 2 in Amudat, 17 in Nakapiripirit and 15 in Napak)
- Final selection of the farmers groups was done using simple random sampling for Moroto and Napak, while for Nakapiripirit and Napak, systematic sampling was used.

Bee keepers

All the bee producer groups were included in the sample. However, for each group, 13 individuals were selected using simple random sampling and included in the sample.

Livestock farmers

- Geographically ordered list of beneficiary groups was prepared by sub-county and district. Because 7 farmers per group were needed, 179/7 (25) farmer groups were selected and finally included in the sample
- The 25 farmer groups were proportionally allocated to each district as follows (3 in Napak, and 22 in Nakapiripirit)
- Final selection of the farmers groups was done using simple random sampling for Napak, while for Nakapiripirit, systematic sampling was used.

Horticultural farmers

Similar to the bee keeper groups, all the 20 horticulture groups were included in the sample. However, for each group, 13 individuals were selected using simple random sampling and included in the sample.

Maternal Child Health beneficiaries

- From the computed sample size of 261 beneficiaries, an assumption was made to interview 13 beneficiaries per village which translated to 261/13 (20) villages.
- Geographically ordered list of beneficiary villages was prepared by sub-county with a corresponding measure of size(number of food beneficiaries)
- Starting at the top of the list, the cumulative number of beneficiaries was calculated and entered next to the column for number of beneficiaries.
- Sampling interval (S.I) was computed by dividing the total cumulative number of beneficiaries (6099) by the number of villages that were selected (20).
- Random start (RS) was selected by randomly selecting a number in the cumulative beneficiaries' column between 1 and the sampling interval (305). This number was then compared with the

cumulative number of the column. The village within which the selected number (81) fell in the cumulative number of beneficiaries column was the first village that was selected.

- Subsequent villages were chosen by adding the sampling interval to the number identified in step 4 above; ie RS+S.I, RS+2S.I, RS+3S.I etc.
- This procedure was followed until the required number of villages (20) was exhausted.

At the second stage of sampling, within the selected villages, 13 beneficiaries were selected using simple random sampling approach, in cases, were the village had more than 13 beneficiaries; oversampling was done to compensate for villages with less than 13 beneficiaries.

Community advocacy group members

Due to logistical considerations, we interviewed all the CAG members from Amudat and Moroto district, while we sampled half of those CAG members from Napak (12) and Nakapiripirit (9) district. This yields a total sample size of 36 CAG members. All the sampled CAG members were randomly selected for the interviews.

2.4 Survey questionnaire

The survey questionnaire included 10 modules which were identified as Modules A – K, as shown below:

- Module A – Beneficiary identification cover sheet and informed consent
- Module B – Beneficiary roster and demographics
- Module C – Livelihood beneficiary information
- Module D – Crop farmer beneficiaries
- Module E – Livestock beneficiary questions
- Module F – Horticulture crops beneficiaries
- Module G – Apiary management questions
- Module H – Household assets and labour patterns
- Module I1 – Children's nutritional status and dietary practices
- Module I2 – Women's nutritional status and dietary diversity
- Module I3 – Program indicators (Care givers)
- Module I4- Child immunization
- Module J- Community action group members
- Module K- Children and women anthropometry

The questionnaire was translated into NKaramjong, a local language spoken in the study districts and the individual interviews lasted between one to one and half hours.

2.5 Field Procedures

2.5.1 Training

Training of field interviewers on the survey questionnaires was done using both the English and the translated versions of the survey questionnaire. For training and fieldwork purposes, two training manuals were developed based on the Food for Peace (FFP) and Demography and Health Survey (DHS) guidelines, as shown below:

a). **Interviewer's manual** – included guidelines and procedures for; survey implementation, conducting fieldwork, completing survey questionnaires and interview techniques. This manual also included detailed explanations and instructions for each survey question.

b). **Anthropometry manual** – included procedures which were adapted from the DHS biomarker manual for all of its surveys worldwide. The anthropometry manual was used to train field interviewers on how to weigh and measure children and women.

The research team was trained for three days and the training took place in Moroto towards the end of February (24-28th 2014). The training covered the following topics: RWANU program design, survey objectives, sampling procedures, techniques for administering each individual item of the questionnaire and survey management. Training techniques were as participatory as possible and involved role-play and mock interviews.

2.5.2 Pre-testing

The field pre-testing was done on the fourth day of training and covered the survey process and questionnaire particularly the translated version. The pre-test was used to correct any areas of inconsistency and ambiguity in the survey questionnaires. Additionally, it was also used to test the data entry and capture systems screens before entering the actual completed questionnaires.

2.5.3 Field work

Fieldwork commenced 3 days after the conclusion of the training and pretest in early March and completed after 18 days of field data collection. During the first few days of fieldwork, SFG field managers worked closely with all interview teams in the four districts to oversee the interviews and to assist the teams in identifying and correcting mistakes. For quality control purposes, each team had a team supervisor who conducted spot checks and verified the following information in at least 30 percent of the interviews: that actually the interview was conducted, interview duration, information on the beneficiary roster, proper administration of the various sections of the questionnaires including informed consent. In addition, field supervisors edited all completed questionnaires to check for completion of all required questionnaire field items, presence of missing data and legibility of open-ended items. Interviewers were required to make corrections and sometimes returned to re-interview survey respondents whenever it was deemed necessary.

2.6 Data management

The survey data management commenced concurrently with the questionnaire design. During the questionnaire design process, the data manager was consulted on the draft questionnaire and assessed it for any flaws in the definition of units of observation and skip patterns. The data was subjected to range checks, skip checks and consistency checks. The data was entered using the MS-access database which was designed with the range and consistency checks.

The range checks ensured that every variable in the questionnaire generated data within a limited domain of valid values. Skip checks were used to verify whether the question skip patterns were followed appropriately. Consistency checks were used to verify whether information from one question is consistent with values from another question. Checks were also used to verify that the right modules of the questionnaire were completed for each respondent.

The following steps were taken in order to ensure quality data sets:

- Before 'live' data was entered, all the data entry clerks underwent a trial of 10 questionnaires on the pretext of testing the data entry screens. Only those data entry clerks who achieved a high level of entry accuracy were retained.
- Quality 'spot checks' were conducted to quickly assess the entered data for any inconsistencies and provided feedback for continuous improvement of data entry clerk performance

2.7 Data analysis

Sampling weights: The final samples for each beneficiary group were self-weighing and therefore, sample weights were not computed for each indicator.

Indicator definitions and tabulations: Most of the indicators assessed during the annual survey are FFP indicators which were calculated using tabulation methods as currently documented in the FFP Standard Indicators Handbook.[4]. Child stunting and underweight indicators were derived using the World Health Organization (WHO) Child Growth Standards and associated software.[5]

These indicator definitions were discussed during meeting that will be held prior to fieldwork. Data for all indicators was tabulated as program total. Point estimates and variance estimation were derived using Taylor series expansion, taking into account the design effect associated with the complex sampling design. The 95 percent confidence intervals were provided for all FFP indicators at the program level.

Handling of missing or erroneous data: Missing data points were excluded from both the denominator and the numerator for calculation of all program specific indicators. Don't Know" responses were recorded to the null value and were included in the denominator. For example, for the household dietary diversity component, "Yes," "No," and "Don't Know" responses were included in the denominator, but only "Yes" responses were counted in the numerator.

For anthropometry indicators, biologically implausible cases were flagged by the WHO software according to WHO criteria[6] and only those children with valid weight and height scores were included in the analysis for both stunting and underweight indicators. Implausible cases were excluded from the analysis, but were left in the dataset.

2.8 Ethical considerations

Ethical approval was obtained from the Uganda National Council for Science and Technology, and from The AIDS Support Organization Research and Ethics Committee in Mulago. The study commenced only after IRB approval was obtained from each of the above institutions. The rights of Human Subjects in research was respected and incorporated into the study protocol. Investigators (PI, and Co-I) on the study are certified in research ethics, and training in ethical issues for field research was included in the

[4] FFP Standard Indicators Handbook (Baseline-Final Indicators). (December 2011). Available at http://pdf.usaid.gov/pdf_docs/pnadz580.pdf
[5] WHO Anthro and macros, version 3.2.2. (January 2011). Available at http://www.who.int/childgrowth/software/en/
[6] Ibid.

training workshop content for the local research team, including the importance of ensuring subject confidentiality.

Verbal informed consent was obtained before each interview. The objectives of the study were explained to the respondents to enable them make verbal informed consent. At the initial contact with the respondents, the study team obtained verbal informed consent using consents forms which were inserted at the beginning of data collection tools.

The study presented **minimal risks** to the participants as they did not undergo any invasive procedures. As indicated above, the study did not include any identifying information. In addition, the study carried a relatively low burden. Respondents were not interviewed for more than two hours. Respondents did not incur transportation or other costs as a result of participating in the survey.

2.9 Study limitations and challenges

The study limitations and challenges which were encountered during the annual survey are summarized below:

Recruitment and training difficulties: To address cultural and language barriers, field interviewers were recruited from Karamoja and, where possible, from specific districts. Recruiting a sufficient number of qualified interviewers for such a large-scale and complex study in what is arguably the least developed region of Uganda presented challenges for implementing quality controls for the survey. Some interviewers were disqualified during the training and field data collection.

Logistics and transportation constraints: Karamoja has limited transportation, energy infrastructure, and logistical support (e.g., administrative supplies and, cash to pay for logistics, bank trips, etc.). Electricity is available for only a few hours, via generator, in most parts of the region; and Internet and cell phone coverage are unstable and sparse. As a result, questionnaires had to be printed and transported from Kampala, which is a 12-hour drive from Karamoja, by car. Moreover, the geography and road conditions made transportation a daunting challenge. The field teams spent hours travelling from one village to another.

Difficulty accessing the villages: Despite the teams' best efforts, they found some villages inaccessible. For instance, a village in the mountains in the Amudat district was only accessible via rock climbing. This made it logistically challenging and dangerous for interviewers to reach the village, especially with heavy and bulky anthropometry equipment. Sometimes, we would go to the villages only to find that almost all the beneficiaries sampled were away in the local markets for an extended period of time.

The length and complexity of the questionnaire: This made interviews difficult and interviewers often needed to explain survey questions verbally. To maintain consistency, each interviewer carried a printed manual that was used as a reference.

Validity and reliability of self-reported data: Most of the data collected for the indicators rely on self-reporting which has several limitations such as the; possibility of exaggeration or omission of information; inaccurate recollection of experiences or events; social-desirability bias or reporting of untruthful information; and reduced validity when respondents do not fully understand a question.

CHAPTER THREE: SURVEY FINDINGS

The annual survey findings are presented according to key outcome indicators which are prescribed in the project performance monitoring plan, with a specific focus on the following content categories; characteristics of the study population, agricultural indicators, child's health and nutrition, women's health and nutrition, household sanitation practices and participation in community advocacy groups.

3.1 Characteristics of the study population

This section presents the characteristics of the study population which include the socio-demographics (Table 4) and the other characteristics of the; crop and horticultural farmers (Table 5), bee keepers (Table 6) and livestock farmers (Table 7).

3.1.1 Socio demographics characteristics duplicates

A total of 893 beneficiaries were interviewed. Majority of survey respondents were females (62 percent). Males comprised only 38 percent of all the surveyed beneficiaries.

Table 4: Socio-demographic characteristics

Characteristic	Frequency (N)	Percentage (%)
Beneficiary sex		
Male	339	38.0
Female	554	62.0
Age-groups of household members		
Women aged 15-49 years (for beneficiaries only)*	457	82.4
Children aged 0-59months**	891	19.4
Children aged 12-23 months**	359	7.8
Households with children 0-59	735	82.3
Households with children 6-23 months	329	36.8
Marital status of beneficiaries		
Married or living together	815	91.3
Divorced/ separated	12	1.3
Widowed	36	4.0
Never-married and never lived together	30	3.4
Level of Education		
None	716	80.2
Primary	147	16.5
Secondary	27	3.0
Higher/tertiary	3	0.3
Category of Beneficiary Type ***		
Crop farmers	238	26.7
Bee keepers	101	11.3
Horticulture farmers	146	16.3
MCHN	226	25.3
CAG members	36	4.0
Livestock farmers	156	17.5
District		
Moroto	14	1.6
Amudat	50	5.6
Napak	170	19.0
Nakapiripirit	659	73.8
Household size and gendered household type		
Average household size (sd)	5 (1.8)	
Adult Female No Adult Male	58/893	6.5
Adult Male No Adult Female	24/893	2.7
Male and Female Adults	778/893	87.1

*Denominator is total number of beneficiaries. ** Denominator is total number of children staying in the same households as the beneficiaries.
***Some beneficiaries received more than one form of project support and therefore were interviewed more than once.

Age-groups of the household members: Among all women beneficiaries, 82.4 percent were aged 15-59 years. Among all children who reside in the same households as the sampled beneficiaries, 19.4 percent were children aged 0-59 months and 7.8 percent were children aged 12-23 months. Children aged 0-59 months were household members in 82.3 percent of all beneficiary households. Children aged 6-23 months were household member s in 36.6 percent of all beneficiary households.

Marital status: Most of the surveyed beneficiaries were married or living together (90.8 percent) and very few beneficiaries were; divorced/separated (1.3 percent), widowed (4.3 percent) and never married or have never lived together with a spouse (3.6 percent).

Level of education: Most of the surveyed beneficiaries never attended school (80.2 percent). Only 16.5 percent attained primary education, 3 percent attained secondary education and less than 1 percent attained secondary/tertiary education.

Beneficiary categories: Some project beneficiaries received more than one form of project support and therefore were interviewed more than once. Most of the survey respondents were beneficiaries of project support in crop farming (26.7 percent); maternal child health and nutrition (25.3 percent), livestock rearing (17.5 percent) and horticultural farming (16.3 percent). The CAG members comprised the smallest proportion (4 percent) of survey respondents because very few individuals had been reached with conflict mitigation activities by the time of the first annual survey round.

District: Most of the sampled project beneficiaries were from Nakapiripirit (73.8 percent) and Napak (19.0 percent). There were very few project beneficiaries in Amudat (5.6 percent) and Moroto (1.6 percent). The sampling frame which was used had most project beneficiaries from Nakapiripirit (79%) and Napak (18%) and very few were from Amudat (2%) and Moroto (1%).

Household structure: The average household included 5 household members. The survey showed that 87.1 percent of all households have both male and female adults, and 6.6 percent of all households are headed by females without males. Only 2.7 percent of all beneficiary households were headed by males without females. There were slight differences with the baseline survey which showed that 89 percent of all households had both male and female heads, 9.9 percent of all households had an adult female and no male and 1.1 percent of all households had an adult male and no adult female.

3.1.2 Other characteristics of crop and horticultural farmers

Most of the crop farmers grow maize (80.7 percent), beans (74.5 percent) and sorghum (64.9 percent). Very few crop farmers grow ground nuts (13.0 percent). Most of the horticultural farmers grow cabbage (70.6 percent), onions (77.4 percent) and Sukuma wiki (62.3 percent).

The main sources of seeds grown by the crop farmers are; RWANU (58.8 percent) and markets (26.9 percent). Very few crop farmers obtain their seeds from government sources (3.7 percent), NGOs (5.1 percent) and the local seeds saved from harvest (5.6 percent). In terms of land preparation, most crop farmers use hand tools (90.9 percent), and very few use the ox plough (5.8 percent) and the tractor (1.3%).

Table 5: Characteristics of crop and horticultural farmers		
Characteristic	**Number, n**	**Percent, %**
Crop farmers*(N=238)		
Maize	192	80.7
Ground nuts	31	13.0
Beans	177	74.5
Sorghum	155	64.9
Horticulture farmers*(N=146)		
Cabbage	103	70.6
Tomatoes	70	48.0
Onions	113	77.4
Sukuma wiki	91	62.3
Plots		
Total number of plots**	534	
Average number of plots per farmer (sd)	0.55 (0.33)	
Mean plot sizes	1.36 (0.82)	
Source of seeds (N=384)		
Bought from market	116	26.9
NGO	22	5.1
RWANU	254	58.8
Government	16	3.7
Local seeds saved harvest	24	5.6
Land preparation method* **		
Hand tools	472	90.9
Ox Plough	30	5.8
Donkey or Horse Plough	2	0.4
Tractor	7	1.3
None, not cultivated	8	1.5

* Some farmers grow more than one crop
**Some farmers have more than one plot.
***Some farmers apply more than one method of land preparation.

3.1.3 Other characteristics of bee keepers

Most bee keepers use the Kenya Top Bar (KTB) bee-hive (58.3 percent) and Langstroth (36.5 percent). Very few bee keepers use the log hive (5.2 percent). Most farmers reported to have received their bee hives from the RWANU program (91.1 percent) and very few farmers received bee hives from other non-governmental organizations (6.9 percent) and government sources (1 percent).

Table 6: Characteristics of the bee keepers		
Characteristic	**Number, n**	**Percent, %**
Types of bee hives		
KTB(Kenya Top Bar)	56	55.4
Langstroth	35	34.6
Log Hive	5	4.9
Others	5	4.9
Source of bee hives		
Bought from market	1	1.0
NGO	7	6.9
RWANU	92	91.1
Government	1	1.0
Districts		
Moroto	2	2.0

Napak	2	2.0
Nakapiripirit	93	92.0
Amudat	4	4.0

3.1.4 Other characteristics of livestock farmers

Most livestock farmers rear goats (96.8 percent) and few farmers rear cattle (16.7 percent), sheep (11.8 percent) and poultry (7.1 percent). Most livestock farmers access animal drugs from the community animal health worker (30.2 percent), private veterinary drug shop (35.7 percent). Few livestock farmers access animal drugs from the private veterinarian (19.4 percent) and government veterinarian (9.3 percent). Considerable proportion of livestock farmers (17.3 percent) did not purchase drugs.

Table 7: Characteristics for the livestock farmers

Characteristic	Number, n	Percent, %
Types of animals kept (N=156)		
Cattle	26	16.7
Goats	151	96.8
Sheep	11	7.1
Poultry	11	7.1
Source of drugs		
Gov't veterinarian	12	7.7
Private veterinarian	25	16.0
Private veterinary drug shop	46	29.5
Community animal health worker	39	25.0
Other sources	7	4.5
Did not purchase drugs	27	17.3

*Some farmers rear more than one type of animal.

3.3 Agriculture-related indicators

3.3.1 Utilization of financial services

Financial services are referred to as services provided by formal or non-formal groups for the management of money. This includes credit (loans), savings, and insurance schemes run by for-profit, non-profit, and governmental organizations. Examples of financial services for farmers include, but are not limited to, loans, savings schemes, and insurance plans obtained from: private banks, microfinance institutions for start-up business and business expansion, credit unions, savings and loan facilities within farmer associations, cooperatives society, village savings and loan associations, and other types of communal/social funds. During the survey, farmers were asked about the financial services (savings, agricultural credit, and/or agricultural insurance) which they used in the past 12 months.

The survey showed that over half of the farmers (71.2 percent) belong to a village saving scheme or group and 48.8 percent saved cash in the past 12 month. The average amount of cash per person that was saved was 64,137 Uganda Shillings. Over one-third (37.2 percent) of the farmers accessed agricultural credit in the past 12 months and the average amount of credit that was borrowed was 78,454 Uganda Shillings.

Overall, 26.9 percent of farmers used financial services in the form of savings, agricultural credit, and/or agricultural insurance in the past 12 months (Table 8). There were more female farmers (62.9 percent) compared to male farmers (37.1 percent), who used financial services in the past 12 months.

Table 8: Percent who used financial services (savings, agricultural credit, and/or agricultural insurance) in the past 12 months.

Characteristic	Percent who saved any cash in the past 12 months	Percent that belong to a village saving scheme or group	Average amount saved	Percent who accessed agricultural credit in the past 12 months	Average amount borrowed	Percent who used financial services (savings, agricultural credit, and/or agricultural insurance) in the past 12 months
Sex						
Male	56.3	75.0	72,608	41.6	88,598	30.3
Female	45.2	69.3	55,666	35.2	68,309	25.3
Type of farmer						
Crop farmers	56.4	78.4	64,790	48.5	70,175	35.2
Horticulture farmers	61.1	80.6	37,167	51.8	79,266	36.8
Livestock farmers	34.2	55.9	88,945	17.8	60,423	13.8
Bee keepers	55.5	77.2	50,173	36.6	82,847	26.7
MCHN	16.7	27.8	74,648	16.7	87,089	5.6
District						
Moroto	36.4	81.8	68,500	27.3	186,666	27.3
Napak	44.6	68.1	47,220	30.1	84600	22.9
Nakapiripirit	51.4	72.4	69,488	39.7	72046	28.6
Amudat	44.9	69.4	45,000	43.7	68190	26.5
Total/Average	**48.8**	**71.2**	**64,137**	**37.2**	**78,454**	**26.9**

The financial services were used mainly by the bee keepers (34.7 percent) and there was no major difference in the utilization of financial services by the other beneficiary groups.

Figure 1 shows that most farmers saved money and accessed credit from the village saving and loan associations (46.6percent), farmer associations (8.7 percent) and SACCOs (5.1 percent). Very few farmers saved money and also accessed credit from microfinance institutions (0.2 percent), commercial banks (0.5 percent), money lenders (0.3 percent), family members (1.1 percent) and NGOs (0.6 percent). There are no farmers who saved and accessed credit from employers and religious institutions.

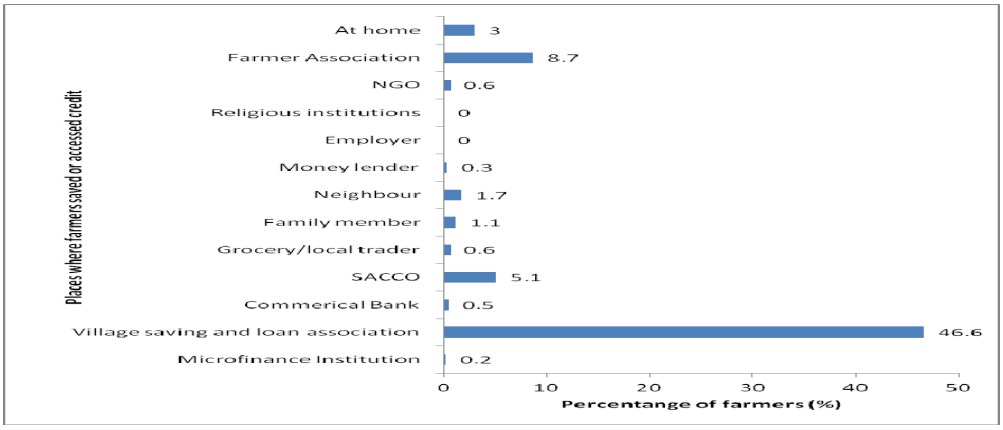


Figure 1: Places where farmers saved or accessed credit.

3.3.2 Utilization of veterinary services (disease diagnosis and drugs)

Livestock farmers were asked during the survey about the use of government or private sector veterinary services (diseases diagnosis and drugs) and livestock vaccination. The survey showed that 78.2 percent of livestock farmers accessed government or private sector veterinary services (Table 9). There were more females (82 percent) than male farmers (71.4 percent) who accessed veterinary services. Most of the veterinary services were utilized by mainly livestock farmers who rear goats (98.4 percent) and cattle (18.9 percent). Very few farmers who rear sheep (6.6 percent) and poultry (8.2 percent) utilized veterinary services. Vaccinations (58.2 percent), de-worming (44.3 percent) and purchase of animal drugs/medicines (41 percent) and, diagnosis and treatment (31.2 percent), comprised the largest proportion of veterinary services that were utilized by livestock farmers.

Table 9: Percentage of livestock owners accessing government or private sector veterinary services (diseases diagnosis and drugs) and livestock vaccination.

Characteristic	n	Percent (%)
Sex		
Male	40	71.4
Female	82	82.0
Types of animals kept		
Cattle	23	18.9
Goats	120	98.4
Sheep	8	6.6
Poultry	10	8.2
Veterinary services accessed		
Vaccinations	71	58.2
Diagnosis and treatment	38	31.2
De-worming	54	44.3
Purchased drugs/medicines to give to animals	50	41.0
Used a community animal health worker	21	17.2
District		
Moroto	3	2.5
Napak	12	9.8
Nakapiripirit	101	82.8
Amudat	6	4.9
Total	**122**	**78.2**

Some farmers keep more than one type of animal and also accessed more than one veterinary service.

3.3.3 Values chain activities practiced by the beneficiary farmers

RWANU program promotes different value chain activities during the pre-production and post production of crops and other agricultural products. The program promotes the selection of market preferred crop varieties, joint purchase of inputs, and timing of planting to capture market during the pre-production stage. During the post-production stage, the program promotes; bulking, drying to market specified moisture contents, transportation, sorting, grading, processing, timing of sales, and trading/ marketing. The percentage of farmers that are practicing these specific value chain activities was measured during the annual survey.

The survey showed that 91.7 of farmers practiced at least one value chain activities promoted by the project in the last 12 months (Table 10). There were more females (92.2 percent) compared to males 91.2 percent) who practiced value chain activities in the past 12 months. For each of the different categories of farmers groups, over three-quarters of the farmers practiced value chain activities,

Table 10: Percentage of farmers who practices value chain activities promoted by the project in the last 12 months by background characteristics. . keepers show district dissagregation

Sex	Number, n	Percent, %
Male	285	91.2
Female	356	92.2
Beneficiary categories		
Crop farmers	238	84.1
Horticulture farmers	146	93.2
Livestock farmers	156	98.1
Bee keepers	101	98.0
District		
Moroto	9	64.3
Napak	143	384.1
Nakapiripirit	397	60.2
Amudat	40	80.0
Total	**641**	**91.7**

Table 11 shows the percentage distribution of the value chain activities undertaken by each beneficiary category. Most livestock farmers practice the following: Use of animal shelters (59.6 percent), kraals (41.7 percent), vaccinations (58.2 percent and deworming (44.3 percent). Very few livestock farmers practice; making of home-made animal feeds using locally available materials (7.1 percent) and cultivation of fodder trees/grass (2.6 percent).

Table 11: Among farmers who reported use of value chain activities, percentage distribution of the value chain activities undertaken by each beneficiary category.

Value chain activities practiced*	**n**	**Percent**
Value chain activities practiced by farmers		
Livestock farmers		
Animal shelters	93	59.6
Kraals	65	41.7
Vaccinations	71	58.2
Diagnosis and treatment	38	31.2
De-worming	54	44.3
Homemade animal feeds made of locally available products	11	7.1
Use the services of community animal health workers	21	17.2
Purchased drugs/medicines to give to animals	50	41.0
Spraying for ticks	42	26.9
Cultivation of fodder trees/grass	4	2.6
Bee keepers	**n**	**Percent**
Use of modern bee hive; KTB and Langstroth	91	90.0
Use of bee suits or beehive brush or smokers	23	22.8
Used harvesting buckets	2	1.9
Slashing grass, pruning trees around the apiary	43	42.6
Cleaned dirty bee hives	26	26.0

Created fire lines to prevent fire hazards	10	10.0
Used pesticides to destroy pest habitants	-	-
Used baiting material during sitting e.g. bees wax, catch box	1	1.0
Used fine cloth for filtering honey under room temperature	3	3.0
Filled shortly after extraction in glass jars with screw-on lids or food grade plastic buckets	-	-
Packaged and branded the honey	-	-
Collectively marketed the honey	-	-
Applied wood ash, or locally made organic chemicals	1	1.0
Fed bees with fine cassava flour, soy bean flour and honey	-	-
Others	-	-
Crop farmers	**n**	**Percent**
Use of improved seed varieties	144	60.7
Tillage of land	131	55.2
Use of pesticides	6	2.5
Use of fertilizers or composite manure	47	19.7
Use of herbicides	1	0.4
Bulk transporting of inputs, or produce	-	-
Sorting or grading produce	11	4.6
Drying or processing produce	6	2.5
Trading or marketing (wholesale, retail, or export)	2	0.8
Inter- cropping	41	17.2
Crop rotation	19	8.0

*Value chain activities for each beneficiary were assessed using multiple response questions, because of the overlap; the overall n for each beneficiary category has not been presented.

Most bee keepers use the modern bee hive (90 percent) and practice slashing grass and pruning trees around the apiary (42.6 percent). There was no bee keeper who reported to practice the following; use of pesticides to destroy pest habitants, filling honey in glass jars shortly after extraction, packaging and branding of honey, collective marketing of honey and feeding bees with fine cassava flour, soya bean flour and honey. The survey showed that there are very few bee keepers who; use harvesting buckets (1.9 percent), use baiting materials (1.0 percent) and apply wood ash, or locally made organic chemicals (1.0 percent).

3.3.4 Use of improved storage practices

Improved storage techniques are methods for storing crops, animal feed, and aquaculture products that are cost-effective and allow for long-term storage. Improved" storage techniques allow a farmer to safely store excess harvest from the plot where the farmer has decision-making power for subsequent sale and/or consumption. Improved storage techniques should minimize post-harvest losses and maximize profits by allowing farmers to sell their products later in the season when excess product supply has diminished.

The following improved storage practices were assessed during the survey: drying to recommended moisture content; use of hydrometers; sorting of damaged products; storage in sacks/bags on pallets or improved granary with rat guards and plastered granary walls; and use of mats or plastic sheets for drying.

Table 12: Percentage of farmers who used improved storage practices in the past 12 months.		
Percentage of farmers who used improved storage practices in the past 12 months	**Number, n**	**Percent, %**
Sex		
Male Farmers	44	51.0
Female Farmers	80	53.0
Category of farmer/beneficiary		
Crop farmers	236	
District		
Amudat	14	11.2
Moroto	5	4.0
Napak	42	33.9
Nakapiripirit	63	50.8
Total	**124**	**52.5**

The survey showed that 52.5 percent of farmers used improved storage practices in the past 12 months (Table 12) mainly in the form of sacks or bags on pallets, granary with rat guard and plastered walls, and drying cribs. There were more female farmers (53percent) than male farmers (51 percent) who practiced improved storage practices. Most of the farmers who practiced improved storage practices were found in Nakapiripirit (58.8 percent) and Napak (33.9 percent).

Figure 2 shows that most farmers store crop products in sacks or bags (but not on pallets), for example, 53.4 percent of beans farmers stored their products in sacks or bags which were not placed on pallets compared to 16.4 percent who used pallets. Most farmers use improved granaries, for example, 18.8 percent of groundnut farmers used granaries with rat guards and plastered walls, compared to 6.3 percent who store in granaries without rat guards and plastered walls.

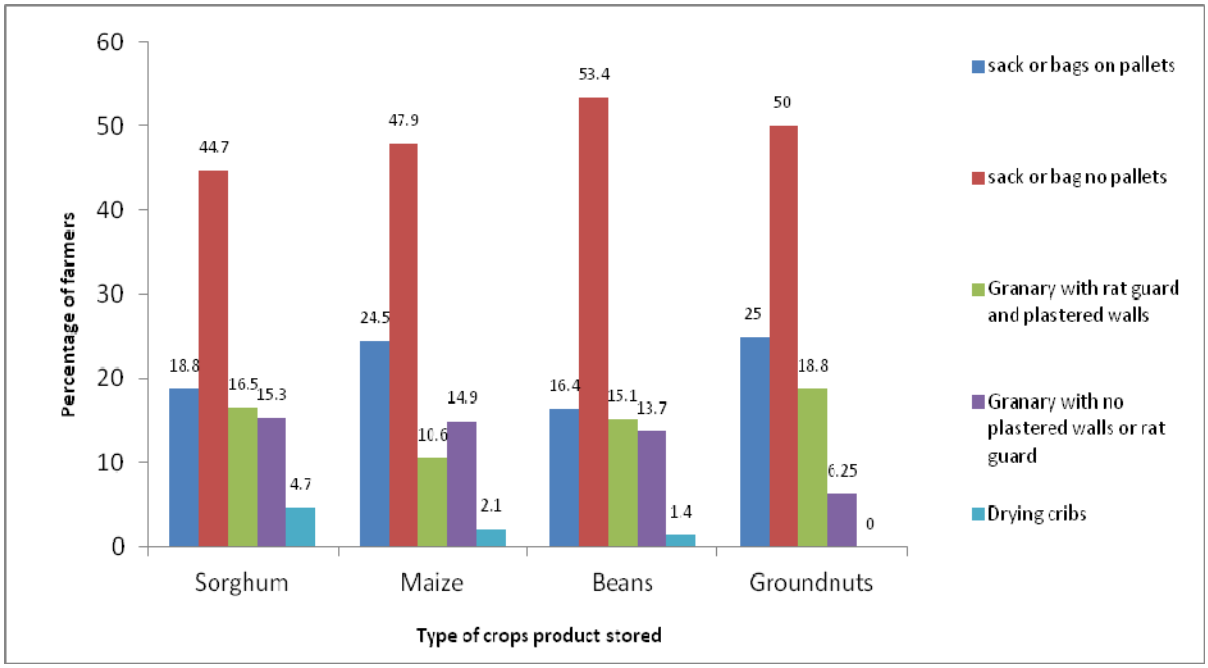


Figure 2: Improved storage practices used for the different crop products

3.3.5 Gross margin

The gross margin is the difference between the total value of production of the agricultural product (crop, milk, eggs, fish, etc) and the cost of producing that item, divided by the total number of units in production (hectares of crops, number of animals for meat and milk, number of bee hives). Gross margin was estimated for each beneficiary group in addition to the aggregate gross margin. Gross margin per hectare, per animal, per bee hive is a measure of net income for that farm/livestock/apiary-use activity. Gross margin was calculated from 5 data points shown below:

a) Hectares planted (for crops); Number of animals (for milk, sale); and number of bee hives. During the data collection exercise, we collected information on acres planted per plot. So we converted these into hectares.
b) Total production during reporting period: for crops, we computed the total number of kilograms. Since in Karamoja, they use other units to measure quantities produced, we converted the local units into kilograms. For vegetables, we also covered the units into kilograms. For animals, we computed the quantities produced in liters.
c) Value of sales (USD) during the reporting period. This was simply derived by multiplying the quantities sold by the unit price for each crop, animal and bee hives.
d) Quantity of sales during reporting period; the computation was similar to total production but we only considered what the beneficiaries sold.
e) Purchased input costs during the reporting period. This was computed by adding the amount of money spent on the following: Buying fertilizers, equipment, herbicides and pesticides; hired labour for grazing; clearing the land; weeding; tending to bee hives; milking; harvesting; guarding and threshing; buying feeds for animals; water for irrigating crops and for animals; veterinary services and amount spent on buying animals if any. This computation was done separately for animals, crops, bee keepers and horticulture and then an aggregate cost was computed. Therefore, in computing the gross margin, the following values were computed using the above data points:

    - Average price = value of sales divided by quantity of sales
    - Gross revenue = average price x total production
    - Net revenue = gross revenue - purchased input cost
    - Gross margin (per hectare, per animal, per pond area, per crate) = net revenue divided by area planted/in production, by animals, by apiary, etc

In computing the gross margin, unpaid labor and other in-kind inputs, and capital investments were not included. Commodity specific gross margin for commodities grown in the past twelve months preceding the survey was computed and is presented in table 13 shown below.

Results indicate that among crops, tomatoes had the highest gross margin (USD 500/hectare), followed by groundnuts (USD 384) while the crop with the least gross margin was sorghum with USD 79 per hectare. These results imply that growing tomatoes within the study area is more profitable in comparison to the other crops.

Tomatoes have the highest gross margin because the input cost in comparison to other crops was very low at USD 68. The gross margin values should be cautiously interpreted because it was difficult for the

farmers interviewed to provide very accurate cost and sales data due to poor record keeping and therefore the final results could have been affected by recall bias. Almost all the farmers provided cost and sales data using recall and not review of records

Table 13: Gross Margin for crops

	Total Production in Kgs[1] (A)	Quantity of sales in Kgs (B)	Value of sales in USD[2] (C)	AV Price (USD)	Total cost of inputs in USD (D)	Gross Revenue	Net Revenue in USD ((C/B)*A-D) **(E)**	Unit of Production in Has **(F)**	Gross Margin per ha in USD (G) **(E/F)**
Maize	14,191	5,029	1,908	0.379	1,315	5,384	4,069	21	192
Beans	3,661	1,161	481	0.414	587	1517	930	7	127
Ground nuts	1,798	96	114	1.188	105	2,135	2,036	5	384
Sorghum	6,600	175	376	0.52	1,119	3435	2317	29	79
Cabbage	3,625	288	91	0.316	59	1,145	1,092	8	140
Tomatoes	5,422	663	241	0.363	68	1,971	1,901	4	500
Sukuma wiki	2,905	1,477	311	0.211	215	612	395	2	188
Onions	3,385	1,379	516	0.374	46	1,267	1,222	4	339

For animals, cattle had the highest gross margin of USD 273 and 0.2 USD per animal for meat and milk respectively while poultry had the lowest gross margin of zero. Sheep had the second highest gross margin of 15.7, while honey had a gross margin of 13. So this means that poultry is the least profitable animal farming business for the beneficiaries since the farmer gets a zero net income for every unit of poultry sold.

While computing the net revenue, the unit used to get the net revenue was kilograms, and yet when computing the gross margin, the unit used was number of animals or bee hives owned. Therefore the final gross margin should be interpreted to represent gross margin per animal or bee hive. For instance for beef with a gross margin of 273, it means that if a farmer was to sale all the animals, for every cow sold by the farmer in a year, the net income would be USD 273 on average (Table 14).

Table 14: Gross Margin for animals									
	Total Production in Kgs (A)	Quantity of sales in Kgs (B)	Value of sales in USD (C)	AV PRICE USD	Gross Revenue USD	Total cost of inputs in USD (D)	Net Revenue in USD ((C/B)*A-D)	Unit of Production **(F)**	Gross Margin per unit in USD (G) **(E/F)**
Cattle	65,880	1,560	3,579	2.29	151,143.9	1,766	149,358	548	272.6
Cattle milk (litres)	330	330	131	0.40	131.0	0	131	548	0.2
Goats	4,050	270	429	1.59	6,441.0	192	6,249	710	8.8
Goat milk (litres)	5	5	2	0.40	2.0	0	2	710	0
Sheep	2,475	105	110	1.05	2,589.9	7	2,582	165	15.7
Poultry	795	795	56	0.07	56.00	51	5	148	0
Honey	12	10	20	2	24	11	13	01	13

3.3.6 Farmer managed natural resource regeneration practices

Farmer-managed natural regeneration practices are low-cost, sustainable land-restoration techniques used to combat poverty and hunger amongst poor subsistence farmers by increasing food and timber production, and resilience to climate extremes. It involves the systematic regeneration and management of trees and shrubs from tree stumps, roots and seeds.[8] FMNR practices are especially applicable, but not restricted to, the dry land tropics. As well as returning degraded croplands and grazing lands to productivity, they can be used to restore degraded forests, thereby reversing biodiversity loss and reducing vulnerability to climate change.

The natural regeneration practices which are being promoted in Karamoja include; tree stump regeneration;[9] soil bunds, retention of plant residues on crop fields, use of wind breakers such as Acacia scorpioides and use of live fences such as Prosopis juliflora and Ephorbia spp. The survey showed that 15.6 percent of surveyed farmers practice FMNRs, with more involvement of females (20.9 percent) when compared to the males (10.3 percent). Most farmers are engaged in the following: soil bunds (18.4 percent), retention of plant residues in crop fields (18.9 percent) and construction of water

[8] Rinaudo, T 2012, Natural Resources Advisor, World Vision Australia and pioneer of Farmer Managed Natural Regeneration in Niger in 1983; and Francis, R 2012, Project Manager, Farmer Managed Natural Regeneration, World Vision Australia.

[9] Facilitating the regeneration or planting of beneficial trees such as Acasia Albida, cassia siamea etc.

catchments (11.6 percent). Most of the surveyed farmers (68.8 percent) do not practice any of the targeted FMNR practices in the last 12 months (Table 15).

Table 15: Farmer managed natural regeneration practices

Among surveyed beneficiaries, (crop, horticulture and MCHN), percentage that practiced farmer managed natural regeneration practices.

	Number, n	Percent,%
Sex		
Male	65	10.3
Female	132	20.9
Type of farmer managed natural regeneration practice*		
Soil bunds	116	18.4
Retention of plant residue in crop fields	119	18.9
Management of watershed or reforestation	25	3.9
Agro-forestry	27	4.3
Cultivation of fruit trees (fruit trees, wind breakers or tree fencing)	19	3.0
Management of forest plantation	14	2.2
Management of natural regeneration (tree and stump regeneration)	9	1.4
Soil conversation on hillsides	26	4.1
Construction of water catchments	73	11.6
Did not practice any of these activities for the past 12 months	434	68.8
Type of farmer/beneficiary		
Crop farmers	57	9.0
Horticulture farmers	18	2.9
Livestock farmers	0	0
Bee keepers	24	3.8
MCHN	91	14.4
District		
Amudat	0	0
Moroto	3	0.4
Napak	74	11.7
Nakapiripirit	120	19.0
Total/Average	**197(N=631)**	**15.6**

*Some farmers undertake more than one farmer managed natural regeneration practice.

3.3.7 Drying practices

During the survey farmers were asked about the different practices they use to dry different crops. The survey showed (Table 16) that most farmers lay their produce on the floor or bare ground (58.4 percent). Very few farmers use mats or plastic sheets (10.9 percent) and drying racks (10.9 percent). Only 5.5 percent of the farmers sort their produce to remove damaged products.

Table 16: Drying practices.					
Among the different crop farmers (maze, beans, sorghum and groundnuts), percentage that are engaged in the different drying practices.					
Drying practices*	**Maize**	**Beans**	**Sorghum**	**Groundnuts**	**Total**
Use of mats or plastic sheets	9.2	6.7	5.4	-	**10.9**
Sorting to remove damaged products and crops	3.8	2.9	1.3	1.3	**5.5**
Use of hydrometer to measure moisture content	-	-	-	-	**-**
Drying racks	7.6	3.4	6.7	2.1	**10.9**
Lays on floor or bare ground	43.7	38.2	38.7	12.6	**58.4**
Others(specify)	22.3	22.7	18.9	10.1	**30.7**
Did not grow any crop	13.9	13.8	16.8	55.5	**56.7**
*Some farmers grow more than one crop and may use the same drying practice for more than one crop.					

3.3.8 Knowledge of modern farming methods

Crop and horticultural farmers were asked about the knowledge of modern farming methods and Table 17 shows that less than half of the farmers are very knowledgeable in crop genetics (44 percent), pest management (15.3 percent), disease management (25.1 percent) and irrigation (27.9 percent). The survey showed that most farmers (63 percent) have little knowledge about pest management.

Table 17: Knowledge of modern farming methods.			
Among surveyed crop and horticultural farmers, percentage who report knowledge of modern farming methods;			
	Very knowledgeable (N=359)	Somewhat knowledgeable (359)	Little or no knowledge (359)
Crop genetics	158 (44.0)	119 (33.2)	76 (21.2)
Pest management	55 (15.3)	75 (20.9)	226 (63.0)
Disease management	90 (25.1)	85 (23.7)	182 (50.7)
Soil related	211 (58.8)	137 (38.2)	10 (2.8)
Irrigation	100 (27.9)	133 (37.1)	122 (34.0)

3.3.9 Livestock management

Livestock farmers were asked about the type of animals which they rear and table 18 shows most farmers rear goats (97.4 percent) and cattle (16.7 percent). There are very few farmers who rear sheep (7.1 percent) and poultry (7.1 percent).

Table 18: Animal species raised/cared for and made decisions about during the past 12 months.		
Characteristic	**n**	**percentage**
Cattle	26	16.7
Goats	152	97.4
Sheep	11	7.1
Poultry	11	7.1

3.4 Child health and nutrition

3.4.1 Breast feeding

Breastfeeding is an important factor in predicting the future health of children. There is a strong link between breastfeeding and the development of a child's immune system. UNICEF and WHO recommend that children be exclusively breastfed (no other liquid or solid food or plain water) during the first 6 months of life and that children be given solid/semisolid complementary food in addition to continued breastfeeding beginning when the child is 6 months old and continuing to 2 years and beyond. Introducing breast milk substitutes to infants before 6 months of age can contribute to limiting breastfeeding, which has negative implications for a child's health and development.

The percentage of children 0-5 months of age who were exclusively breastfed during the day preceding the survey was measured. Exclusive breastfeeding means that the infant received breast milk (including milk expressed or from a wet nurse) and might have received oral rehydration solution (ORS), vitamins, minerals and/or medicines, but did not receive any other food or liquid. Table 20 shows that 20 percent of children under six months of age were exclusively breastfed.

3.4.2 Minimum Acceptable Diet (MAD)

Adequate nutrition during the period from birth to 2 years of age is critical for a child's optimal growth, health, and development. Adequate nutrition requires a minimum dietary diversity, which is measured in terms of seven key food groups. In addition to dietary diversity, feeding frequency (i.e., the number of times the child is fed) and consumption of breast milk (or other types of milk or milk products) needs to be considered. All three dimensions are aggregated in the MAD indicator. This indicator measures the percentage of children 6-23 months of age who receive a MAD, apart from breast milk. The MAD indicator measures both the minimum feeding frequency and minimum dietary diversity, as appropriate for various age groups. If a child meets the minimum feeding frequency and minimum dietary diversity for his or her age group and breastfeeding status, the child is considered to be receiving a MAD. The survey showed that 11 percent of children 6-23 months received a MAD (Table 19).

Table 19: Core indicators for Infant and young child feeding.

	Percent (%)	Number of children (N)
Prevalence of exclusive breastfeeding of children under six months of age		
Sex of child		
Male	15.0	20
Female	25.0	16
Total	**20.0**	**36**
Proportion of children 6–23 months of age who received foods from 4 or more food groups.*	26.9	147
Proportion of children 6–23 months of age who are fed breast milk.	85.0	147

Percentage of children 6-23 months receiving a minimum acceptable diet (MAD)		
Breastfed	16.0	125
Non breastfed	0	22
Sex**		
Male	9.0	75
Female	13.0	72
Total	**11.0**	**147**

*Threshold was obtained from guidelines for measuring IYCF indicators by World Health Organization (WHO), Food and Nutrition Technical Assistance (FANTA) and International Food Policy Research Institute (IFPRI) as well as the Feed the Future (FTF) indicator guidelines.
**75 and 72 are the number of children aged 0-23 whose caretakers responded to the question and not those that met the criteria.

3.4.3 Nutritional status among children

Anthropometric indicators for children under 5 years of age provide outcome measures of nutritional status. Height (length) and weight measurements were taken using standardized procedures and compared with the 2006 WHO Child Growth Standards, which are based on an international sample of ethnically, culturally, and genetically diverse healthy children living under optimum conditions conducive to achieving a child's full genetic growth potential. Use of the 2006 WHO Child Growth Standards is based on the finding that well-nourished children of all population groups for which data exist follow similar growth patterns before puberty.

Weight-for-age takes into account both chronic and acute malnutrition and is often used to monitor nutritional status on a longitudinal basis. Children who are less than two standard deviations (SDs) below the median of the WHO Standards population in terms of weight-for-age were considered underweight.

The height-for-age index provides an indicator of linear growth retardation (stunting) among children. Children who are less than two (2) SDs below the median of the WHO Standards population in terms of height-for-age were considered short for their age ("stunted") or chronically malnourished. Severe linear growth retardation ("stunting") reflects the outcome of a failure to receive adequate nutrition over a number of years and is also affected by recurrent and chronic illness. Height-for-age, therefore, represents a measure of the long-term effects of malnutrition in a population and does not vary appreciably according to the season of data collection. Age, height, and weight measurements were obtained for a total of 241 children ages 0-59 months. These measurements were used to calculate two indicators:

- Prevalence of underweight children 0-59 months (weight-for-age)
- Prevalence of stunted children 0-59 months (height-for-age)

Table 20 provides the results for the anthropometric indicators. A total of 27.4 percent of children under 5 years of age in the survey population show signs of being moderately or severely underweight (less than two SDs below the median). Male children are slightly more likely to be underweight than female children (29.6 percent versus 25.0 percent). A total of 36.5 percent of children under 5 years of age in the survey population show signs of being moderately or severely stunted (less than two SDs below the median). The prevalence of stunting is higher in male children (40.0 percent) than in female children (32.8 percent). When compared with the 2013 baseline survey, 38 percent and 20 percent of children under 5 years of age are stunted and underweight respectively. When compared with the 2011 UDHS,

45% of children aged under 5years in Karamoja were classified as stunted, while 32% were classified as underweight.

Table 20: Percentage of children under five years classified as malnourished according to two anthropometric indices of nutritional status: height-for-age and weight-for-age, by background characteristics.

	Height-for-age			Weight-for-age			Number of children ,N
	Percent below -3 SD	Percent below -2 SD	Mean Z score (SD)	Percent below -3 SD	Percent below -2 SD	Mean Z score (SD)	
Sex							
Male	28.8	40.0	2.3	13.6	29.6	2.6	125
Female	25.0	32.8	2.4	10.3	25.0	2.6	116
Age	17.6						
0-24 months	55.827	25.3	2.6	8.8	20.3	2.7	182
24-59 months		73.1	1.7	23.1	48.1	2.3	52
Total		36.5	2.4	12	27.4	2.6	241

3.4.4 Diarrhoea and oral rehydration therapy (ORT)

Dehydration caused by severe diarrhoea is a major cause of morbidity and mortality among young children, although the condition can be easily treated with oral rehydration therapy (ORT). Exposure to diarrhoea-causing agents is frequently related to the use of contaminated water and to unhygienic practices in food preparation and disposal of excreta.

Caretakers were asked whether any children under age 5 had diarrhoea at any time during the two-week period preceding the survey. If the child had diarrhoea, the caretaker was asked about feeding practices during the diarrhoeal episode, whether they sought advice or treatment, and whether ORT was given to the child. Caretakers were also asked whether there was blood in the child's stools. Table 21 shows the results for the two indicators—the percentage of children with diarrhoea in the past two weeks and the percentage of children with diarrhoea treated with ORT.

Table 21: Percentage of children under age of five who had diarrhoea in the prior two weeks.

	Diarrhoea in the two weeks preceding the survey		Number of children, N
	All Diarrhoea	Diarrhoea with blood	
Sex			
Male	38.3	14.8	128
Female	35.2	12.2	139
Availability of toilet facility*			
Available	30.6	12.2	49
Not available	36.1	9.833.3	183
Missing	50		36
		13.5	
Total	**36.7**		**267**

*For availability of toilet facilities, 35 children aged 0-59 months had missing values and are not included as in the table.

Overall, 36.7 percent of all children under age 5 had diarrhoea in the two weeks preceding the survey. Among children with diarrhoea, caretakers reported that 13.5 percent had blood in their stools. Children in households with toilet facilities at home (37.5 percent) are less likely to get diarrhoea than those without toilet facilities (41 percent)). Caretakers reported seeking advice or treatment for 82 percent of the children with diarrhoea, and 60 percent of those children were treated with ORT (Table 22).

Table 22: Percent of children under five years old with diarrhoea treated with Oral Rehydration Therapy.

Among children under age five who had diarrhoea in the two weeks preceding the survey, the percentage for whom advice or treatment was sought from a health facility or provider, the percentage given oral rehydration therapy (ORT), the percentage given increased fluids, and the percentage given ORT or increased fluids by background characteristics, 2014*

	Percentage of children with diarrhoea for whom advice or treatment was sought from a health facility or provider	Oral rehydration therapy (ORT)					Number of children , N
		Fluid from ORS packet or prepackaged ORS fluid	Recommended Home fluids (RHF)	Either ORS or RHF	Increased fluids	ORT or increased fluids	
Sex							
Male	82	59	12	65	10	71	49
Female	82	61	14	71	6	73	49
Type of diarrhoea							
Non-bloody	85	65	16	74	8	77	62
Bloody	78	53	8	58	8	61	36
Total	**82**	**60**	**13**	**68**	**8**	**71**	**98**

*Data cannot be disaggregated by district because all MCHN beneficiaries are from one district (Nakapiripirit). The sampling frame that was used had all MCHN beneficiaries from Nakapiripirit and diarrhoea questions were asked only to MCHN beneficiaries.

3.4.5 Immunization status of children

The percentage of children aged 12-23 months who are fully immunized (BCG, DPT3B, polio3/OPV3, measles/MMR) was measured; first by asking to see the child's vaccination card, and second by asking the mother if the vaccination card is not available. The survey showed that only 9 percent of children received the basic vaccinations (Table 23).

Table 23: Percentage of children aged 12-23 months who are fully immunized (BCG, DPT3B, polio3/OPV3, measles/MMR).

Percentage of children age 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report), and percentage with a vaccination card, by background characteristics

		DPT			Polio				Measles	All basic vaccinations	No Vaccinations	Percent with a vaccination card seen	Number of children, N
	BCG	1	2	3	0	1	2	3					
Sex													
Male	64.0	16.0	21.0	13.0	63.0	56.0	56.0	48.0	45.0	9.0	18.0	69.0	112
Female	67.0	18.0	18.0	18.0	58.0	54.0	47.0	48.0	35.0	10.0	15.0	64.0	104
Total	**65.0**	**17.0**	**20.0**	**15.0**	**60.0**	**55.0**	**52.0**	**48.0**	**40.0**	**9.0**	**17.0**	**67.0**	**216**

3.5 Maternal health and nutrition

3.5.1 Women's dietary diversity Score

The Women's Dietary Diversity Score (WDDS) was computed based on nine critical food groups. The WDDS aims to measure the micronutrient adequacy of the diet and reports the mean number of food groups consumed in the previous day by women of reproductive age (15-49 years).The indicator was tabulated by averaging the number of food groups consumed (of the nine food groups) across all women as recommend by the Food and Agriculture Organization guide for measuring individual and household dietary diversity[10]. The nine food groups included in the computation of the indicator were starchy staples, dark green leafy vegetables, other vitamin A rich fruits and vegetables, other fruits and vegetables, organ meat, meat and fish, eggs, legumes, nuts and seeds, milk and milk products. Research has shown that the fats and oils food group does not contribute to the micronutrient density of the diet and this food group is not part of the WDDS. The indicator is tabulated by averaging the number of food groups consumed (of the nine food groups) across all women (Table 24).

Table 24: Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age (WDDS).

Indicators		
Women's dietary diversity score mean (SD) (*Mean number of food groups consumed by women of reproductive age*)		3.3
	Number, n	**Percent, %**
Proportion of women consuming starchy staples	227	97.0
Proportion of women consuming dark green leafy vegetables	192	82.0
Proportion of women consuming other vitamin A rich fruits and vegetables	98	42.0
Proportion of women consuming other fruits and vegetables	73	31.0
Proportion of women consuming organ meat	9	4.0
Proportion of women consuming meat and fish	40	17.0
Proportion of women consuming eggs	19	8.0
Proportion of women consuming legumes, nuts and seeds	91	39.0
Proportion of women consuming milk and milk products	28	12.0

During the survey women aged 15-49 years were asked about the different foods they consumed on the day before the study. The survey results indicate that women consume, on average, 3.3 food groups of the 9 basic food groups. This is higher than the 2.7 food groups consumed by women sampled during

[10] Food and Agriculture Organization (FAO), 2013. Guidelines for Measuring Household and Individual Dietary.

the 2013 baseline survey. Starchy staples (97 percent), dark green leafy vegetables (82 percent) and vitamin A rich fruits and vegetables (42 percent) are the most frequently consumed food groups, while organ meat (4 percent) and eggs (8 percent) are the basic food groups that women consume least often.

3.5.2 Women's nutritional status

The nutritional status of women was assessed with two anthropometric indicators: BMI and height. These indices were derived from the height and weight measurements of women aged 15-49 years who were not pregnant. Short stature reflects poor socioeconomic conditions and inadequate nutrition during childhood and adolescence. A woman is considered to be at risk if her height is below 145 cm. Only 1.7 percent of the women in the survey population are less than 145 cm tall.

BMI, expressed as the ratio of weight in kilograms to the square of height in meters (kg/m^2), was used to measure the prevalence of underweight among women. Using the WHO international classification of adult underweight, overweight and obesity according to BMI, a BMI below 18.5 indicates underweight or acute malnutrition, and a BMI of 25.0 or above indicates overweight, while a BMI above 30 indicates obesity. A BMI below 17 indicates moderate and severe malnutrition and is associated with increased mortality. Results from the survey showed (Table 25) that the majority (78 percent) of women in the survey population have a BMI within the normal range (18.5-24.9); 21.1 percent can be considered underweight (BMI < 18.5), and 2.4 percent are in the moderately to severely underweight range (BMI < 17.0).

Table 25: Prevalence of underweight women in the reproductive age group.

Among women age 15-49, mean Body Mass Index (BMI), and the percentage with specific BMI levels, by background characteristics.

	Body Mass Index							
	Normal	Thin			Overweight or obese)			No. of women
	18.5-24.9 (total normal)	<18.5 (total thin)	17.0-18.4 (mildly thin)	<17 (moderately and severely thin)	≥25.0 (total overweight or obese)	25.0-29.9 (over weight)	≥30.0 (obese)	
Age								
15-19	75.0	25	8.3	16.7	0	0	0	12
20-29	80.5	18.7	17.4	1.3	1	1	0	149
30-39	76.0	22.7	20.0	2.7	1	1	0	75
40-49	56.0	0	0	0	0	0	0	9
Total	**78.0**	**21.1**	**18.7**	**2.4**	**1**	**1**	**0**	**246**

3.5.3 Decision making regarding productive assets, food security and nutrition

Three key aspects of women's empowerment for Title II programs were assessed during the survey, namely: women own health, her children's health and a proxy of financial independence (who decides how to spend income she has earned). During the survey, married women age 15-49 years were asked to describe who usually makes decisions regarding the following three topics; seeking health services for their own health, seeking health services for their children's health, how to spend money they earn themselves, and how to use productive assets (e.g. goats, crop inputs and agricultural land)

The survey showed that 65 percent of women aged 15-49 years and currently living with a man reported that they make decisions either jointly with their husbands regarding seeking health services for their own health; seeking health services for their children's health; how to spend money they have earned; and how to use productive assets (Table 26). Only 4 percent of women make such decisions alone without involvement of their husbands. Overall women are more likely to make decisions jointly with their husbands than when alone.

Table 26: Decision making by women of reproductive age.

Percentage of women ages 15-49 and currently living with a man reporting that she makes decisions either by herself or jointly with the man regarding seeking health services for her own health; seeking health services for her children's health; how to spend money she herself has earned; and how to use productive assets.

	Decision making by		Number, N
	Self (%)	Jointly (%)	
Health Care Seeking Decision Making			
Percentage making decisions about health care for themselves	11.0	74.0	414
Percentage making decisions about health care for children 0-59	8.0	85.0	414
Percentage making decisions about spending money that the she herself has earned	9.0	81.0	414
Percentage making decisions about how to use productive assets (e.g. goats, crop inputs, agricultural land)	7.0	81.0	414
Percentage making decisions either by herself or jointly with the man regarding seeking health services for her own health; seeking health services for her children's health; how to spend money she herself has earned; and how to use productive assets	4.0	65.0	414

3.5.4 Antenatal care practices

During the survey, women with children 0-23 months were asked whether they had seen a skilled provider four or more times during last pregnancy, as recorded on the mother's ANC card. The survey showed that 75 percent of mothers of children 0-23 months, reported attending four or more antenatal visits and 61 percent of the mothers were accompanied by their spouses to the antenatal clinics (Table 27).

Table 27: Antenatal care practices.

Percentage of mothers with children aged 0-23 months who had four or more antenatal visits when they were pregnant with their youngest child.

	Number, n	Percent, %
Antenatal care among mothers of children 0-23 months		
Percent of women that received antenatal care for their last child	173	96.0
Proportion of respondents whose partners accompanied them to the health facilities during antenatal visits	110	61.0
Percentage attending 4 or more antenatal care visits with youngest child	135	75.0
Number of ANC visits	2172662597	
1		1.0
2		10.0
3		15.0
4		36.0
5		34.0
6+		4.0

Knowledge of MCH Practices among female caretakers

Female caretakers of children under 5 years old were also asked to give as many examples as they could of important maternal and child health (including IYCF) practices. A total of 17 percent of caretakers of children under 5 years of age were able to identify at least seven of 7 of the 14 important IYCF and MCH practices (Table 28).

Table 28: Percentage distribution of knowledge of IYCF and MCH practices among women aged 15-49 years.

	Number, n	Percent, %
Initiate breastfeed within 1 hour of delivery	106	45.0
Exclusive breastfeed for six months	146	62.0
Introduction of appropriate, safe, and adequate complement foods at 6 months up to 2 years and beyond	59	25.0
Breastfeed frequently on demand, both day and night	116	49.0
Promotion of use of variety of nutritious, locally available foods for infants and young children	59	25.0
Continue breastfeeding for 2 years	43	18.0
Pregnant/lactating women who receive appropriate care and encouraged to consume adequate quantity of nutritious foods		**18.0**
Continue or increase breastfeeding when mother or child is sick	52	22.0
When infant unable to suckle, expressed breast milk fed by cup or tube	19	8.0
Mother maintains health card to monitor growth and development of child	87	37.0
Take children to health promotion sessions or health facility	73	31.0
Ensure timely immunizations	161	68.0
Ensure child sleeps under treated mosquito net (ITN)	33	14.0
Feeding frequent meals and snacks	14	6.0
Feeding foods rich in iron	17	7.0
Percentage of caregivers who know at least 7 of 14 IYCF and MCC practices	40	17.0
Percentage of caregivers who know at least 3 of 8 MCH practices	71	30.1
Percentage of caregivers who know at least 4 of 6 IYCF practices	47	20.0
Percentage of caregivers who know at least 4 of 6 IYCF and 3 of 8 MCH practices	21	9.0

3.5.4 Hand washing practices and sanitation facilities

Survey respondents were asked about the presence of sanitation facilities and hand washing practices. Whereas 28.3 percent of the beneficiaries who were visited had an observable hand washing areas in their homes; only 45.2 percent had water and soap at the hand washing station. The survey also showed that 20.2 of the beneficiaries had a day time toilet facility (Table 29).

When asked about the most important times to wash their hands, 42 percent of household survey respondents named at least three of five critical moments for hand washing, with most of them (92 percent) correctly reporting “before eating” (8 percent) and 40 percent reporting “before preparing food” and 27 percent “after defecation or urination.” Only 31 percent of the respondents reported

critical moments for hand washing before breast feeding or feeding the child. The five critical moments included in the computation of the indicator are shown in the table below with asterisks and they include before eating, before feeding a child, after defecation, after cleaning a child and before preparing food.

Table 29: Hand washing practices and sanitation facilities.

Characteristic	Number, n	Percent, %
Proportion of beneficiaries with observed areas for washing hands	67	28.3
Proportion of hand washing places with water available	36	15.2
Percentage of households with soap and water at a hand washing station commonly used by family member	21	8.9
Proportion of beneficiaries with daytime toilet facility	48	20.2
Proportion of respondents who know at least 3 of the 5 critical moments for hand washing	100	42.0
Critical hand washing moments		
Before eating*	215	92.0
After eating	18	7.6
Before praying	70	29.8
Before breastfeeding or feeding a child*	73	31.0
Before cooking or preparing foods*	92	39.5
After defecation or urination*	63	27.0
After cleaning a child*	126	54.0
When my hands are dirty	37	16.0
Number of women reporting		

*Are the five critical hand washing moments

3.6 Participation in community advocacy groups

RWANU program has supported the formation of pilot community action groups (CAGs), each with its own objectives, such as; to provide an outlet for community members to gather and discuss issues affecting the community, whether project-related or not. Participation in CAGs was assessed during the survey and results showed that; 72.1 percent of surveyed beneficiaries were members of CAGs and 88.9 percent of CAG members believe that the groups are highly relevant to the community.

The survey also showed that most groups conduct meetings weekly (52 percent), monthly (20 percent) and bi-weekly (16 percent). Most of the CAG members (76.9 percent) believe that the groups are highly relevant and help in achieving the intended objectives. The survey also showed that most groups (77.8 percent) have a very good relationship with the local leaders (Table 30).

Table 30: Participation in community advocacy groups.

Characteristic	Number, n	Percent,%
Proportion of respondents that are members of community action groups	27	72.2
Relevancy of the roles or tasks that community group member play to community		
Very relevant	24	88.9
Somewhat relevant	3	11.1
Not relevant	-	-
Frequency of meetings held by the community action groups		
Weekly	13	52.0
Twice every month	4	16.0
Monthly	5	20.0
Quarterly	1	4.0
Every 6 months	1	4.0
Never	1	4.0
Relevance of meetings		
Very relevant and achieving their objective	20	76.9
Somewhat relevant	6	23.1
Not relevant	0	0
Relationship of community action group and local leaders		
Very good	21	77.8
Good	5	18.5
Fair	1	3.7
How respondents feel about accomplishment got from the CAG work		
Worthwhile	16	59.3
Very worthwhile	9	33.3
Fairly worthwhile	2	7.4
Not sure	-	-

REFERENCES

Action Against Hunger. (2012). Nutrition surveillance, Karamoja region, Uganda, round 8, May 2012. Retrieved from: http://www.actionagainsthunger.org/sites/default/files/publications/DHO-

ACF_Karamoja_Nutrition_Surveillance_Round_8_-_Final_Report_2012.05.pdf

Action Against Hunger. (2012). Nutrition surveillance, Karamoja region, Uganda, round 8, May 2012. Retrieved from: http://www.actionagainsthunger.org/sites/default/files/publications/DHO-ACF_Karamoja_Nutrition_Surveillance_Round_8_-_Final_Report_2012.05.pdf

FANTA III Sampling Guide (1999) and Addendum (2012).Retrieved from http://www.fantaproject.org/monitoring-and-evaluation/sampling.

FFP Standard Indicators Handbook (Baseline-Final Indicators). (December 2011). Available at http://pdf.usaid.gov/pdf_docs/pnadz580.pdf.

Food and Agriculture Organization (FAO), 2013. Guidelines for Measuring Household and Individual Dietary.

Government of Uganda, Office of the Prime Minister. (2009).

http://uregina.ca/~morrisev/Sociology/Sociology.htm, accessed on February 3rd, 2014.

Resiliency through Wealth, Agriculture and Nutrition (RWANU) Project, 2013. Project Performance Monitoring Plan.

Rinaudo, T 2012, Natural Resources Advisor, World Vision Australia and pioneer of Farmer Managed Natural Regeneration in Niger in 1983; and Francis, R 2012, Project Manager, Farmer Managed Natural Regeneration, World Vision Australia.

USAID.(2011). FFP Standard Indicators Handbook (Baseline-Final Indicators). Retrieved from http://pdf.usaid.gov/pdf_docs/pnadz580.pdf.

WHO Anthro and macros, version 3.2.2. (January 2011).Available at http://www.who.int/childgrowth/software/en/ Ibid.

WHO Multicentre Growth Reference Study Group. WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development. Geneva: World Health Organization, 2006 (312 pages).

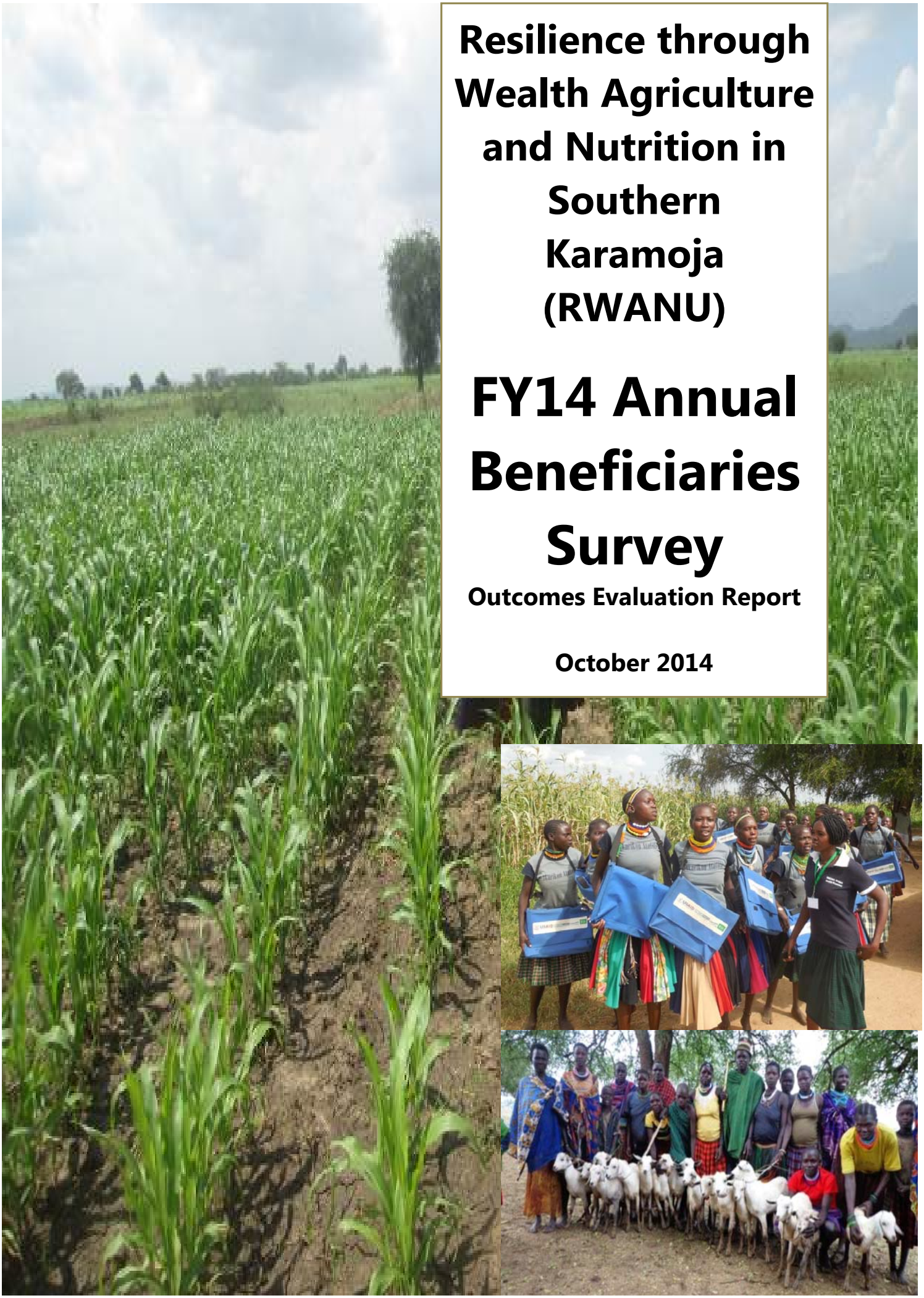
WHO.(2011).WHO Anthro and macros, version 3.2.2. Retrieved from http://www.who.int/childgrowth/software/en/

Resilience through Wealth Agriculture and Nutrition in Southern Karamoja (RWANU)

FY14 Annual Beneficiaries Survey

Outcomes Evaluation Report

October 2014



Annual Beneficiaries Survey 2014

Outcomes Evaluation Report

The RWANU annual survey in Uganda was designed and implemented by the Monitoring and Evaluation team between August and September 2014. This survey was made possible by the generous support of the American people through the support of the Office of Food for Peace (FFP) of the U.S. Agency for International Development (USAID). The contents of this report are the responsibilities of the RWANU program team and do not necessarily reflect the views of USAID or the U.S. Government.

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Acronyms and Abbreviations

ANC	Antenatal Care
CAG	Community Action Group
CAHW	Community Animal Health Workers
DPT	Diphtheria, pertussis and tetanus
FANTA	Food and Nutrition Technical Assistance
HAZ	Height-for-Age Z-Score
IPTT	Indicator Performance Tracking Table
IR	Intermediate Result
IYCF	Infant and Young Child Feeding
MAD	Minimum Acceptable Diet
MAD	Minimum Acceptable Diet
MCH	Maternal Child health and Nutrition
ODK	Open Data Kit
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PPS	Population proportionate to size
RWANU	Resiliency through Wealth, Agriculture, and Nutrition in Karamoja
SO	Strategic Objective
SPSS	Statistical Package for the Social Sciences
SPSS	Statistical Package for the Social Sciences
UBOS	Uganda Bureau of Statistics
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USD	United State Dollar
VHT	Village Health Team
VHTs	Village Health Teams
WASH	Water Hygiene and Sanitation activities
WDD	Women Dietary Diversity
WDD	Women Diet Diversity
WHO	World Health Organization
WHO	World Health Organization

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Table 1: Summary of key findings

		Baseline Survey 2013	FY13 annual survey	FY14 annual survey		
#	**Indicator**	(%)	**Total** (%)	**Male (%)**	**Femal e** (%)	**Total** (%)
1	Percentage of farmers who practiced the value chain activities promoted by the project in the last 12 months	77	92	98.5	99.0	98.7
2	Percentage of farmers who used improved storage practices in the past 12 months	52	53	51.5	46.8	48.4
3	Percentage of livestock owners accessing government or private sector veterinary services (diseases diagnosis and drugs) and livestock vaccination	69	78	-	76.4	76.4
4	Percentage of farmers who used financial services (savings, agricultural credit, and/or agricultural insurance) in the past 12 months	27	27	33.0	42.4	39.22
5	Prevalence of stunted children under five years of age	38	37	33.5	32.5	33.0
6	Prevalence of underweight children under five years of age	20	27	22.3	23.0	22.7
7	Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age (WDDS)	2.6	3.2	-	-	3.16
8	Prevalence of exclusive breastfeeding of children under six months of age	56	20	32.1	22.3	27.0
9	Percentage of children 6-23 months receiving a minimum acceptable diet (MAD)	7	11	7.7	-	7.7
10	Percentage of caregivers who know at least 4 of 6 IYCF and 3 of 8 MCH practices	36	17	-	53.1	53.1
11	Percentage of respondents who know at least 3 of the 5 critical moments for hand washing	71	42			33.1
12	Percentage of households with soap and water at a hand washing station commonly used by family member	4	9			8.9
13	Percentage of mothers with children aged 0-23 months who had four or more antenatal visits when they were pregnant with their youngest child	75	75	-	76.1	76.1
14	Percentage of children under age of five who had diarrhoea in the prior two weeks	23	37	34	34	34
15	Percent of children under five years old with diarrhoea treated with Oral Rehydration Therapy (ORT)	83	68	80.3	58.3	71.1
16	Percentage of children aged 12-23 months who are fully immunized (BCG, DPT3B, polio3/OPV3, measles/MMR)			20.4	30.7	25.8

17	Percentage of women ages 15-49 and currently living with a man reporting that she makes decisions either by herself or jointly with the man regarding seeking health services for her own health; seeking health services for her children's health; how to spend money she herself has earned; and how to use productive assets	-	65	-	70.5	70.5
18	% of CAG members reporting that its meetings are useful and achieving their objective		76.9	73.9	64.0	68.75
19	**Gross Margin Calculation**					
	Crops per Hectare		**US Dollars**			
	Maize		$32.31			
	Beans		$18.20			
	Ground nuts		-			
	Sorghum		$8.78			
	Non Crops produces					
	Goats		$13.87			
	Apiary per bee hive		$2.15			
	Male		$113.10			
	Female		$77.52			
	Other Context indicators					
20	Boreholes are the most common source of water accessed, representing of the households interviewed.		85.7%			
21	Average time taken to reach a safe water source		37 minutes			
22	Households reported treating drinking water at home		21.0%			
23	Households with access to pit latrines		7.9%			

1.1 Introduction

The Resiliency through Wealth, Agriculture, and Nutrition in Karamoja (RWANU) program is (Cooperative Agreement Number AID-FFP-A-12-00011), a five-year USAID Food for Peace Development Food Assistance Program (DFAP). The overall goal of the program is reduced food insecurity among vulnerable people in Southern Karamoja and the program has two strategic objectives (SO): 1) Improved access to food for men and women; and 2) Reduced malnutrition in pregnant and lactating mothers and children under five.

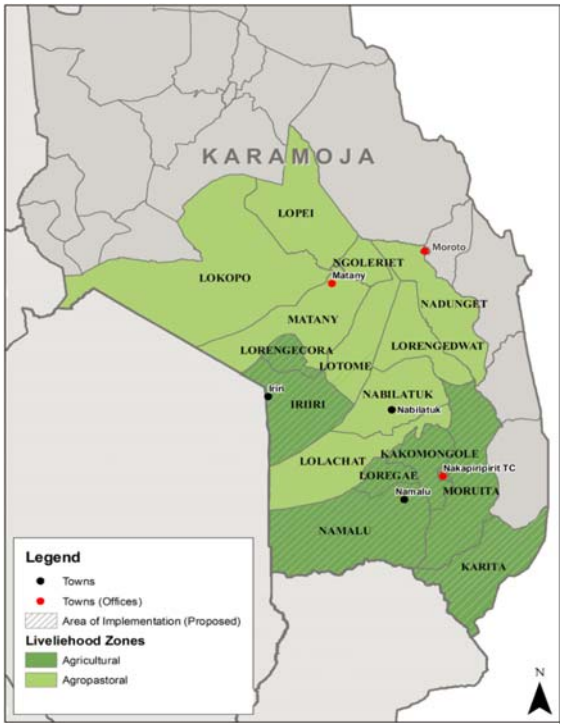


Figure 1: Districts and sub-counties served by RWANU

ACDI/VOCA is the prime partner responsible for overall program management and leads implementation of most activities under SO1, and in particular activities related to crop production, alternative livelihoods, increasing resiliency through the promotion of group savings and improving market linkages. Welthungerhilfe (WHH) carries out the technical training and input provision related to livestock. Concern Worldwide (Concern) has primary responsibility for the nutrition, health and hygiene activities covered under SO2, while ACDI/VOCA manages the distribution of food rations. ACDI/VOCA and partners work together to ensure integration across activities and promotion of gender equity and women's empowerment, environmental stewardship, and conflict mitigation.

This report highlights the implementation progress of the ACDI/VOCA's Resilience through Wealth, Agriculture and Nutrition in Karamoja (RWANU) development food assistance program funded by USAID under Cooperative Agreement over the period April to June 2014. During this quarter, actual implementation of planned program activities under SO1 were achieved following the preparation earlier done in the first quarter. The report presents progress in the implementation of activities related to specific program outcomes reflected under the intermediate results areas in strategic objectives one (SO1) and outlines achievements, challenges, and planned activities for the following quarter – July to September 2014.

1.2 Objectives of the Survey

The overall objective of the annual survey was to provide accurate and comprehensive information in line with project indicators to generate data about food security. Furthermore, the annual survey will provide insight into the existing health systems in place, Mother Child Health and Nutrition practices as well as sanitation and hygiene practices. The results of the annual data will provide reference data against which changes can be measured. Specifically, the objectives of the annual study were:

- Assessing the extent to which the RWANU project has progressed in meeting its targets
- Provide RWANU with current indicator values that can be compared with baseline data to track changes in the beneficiary-based performance indicators.
- Establish the current status of 20 key annual indicators in the RWANU PMP

1.4 Methodology

The study population primarily consisted of RWANU beneficiary farmers who live across the villages in the targeted sub counties, mothers of children 0-59 months, Honey beneficiaries, Women Livestock beneficiaries. The survey obtained data from Households with in the 4 RWANU districts i.e. Amudat, Napak, Moroto and Nakapiripirit districts for farmers. Data on Health and Nutrition was not collected from Amudat District.

Table: Showing the estimated sample and realized samples

Area of project support	Estimated sample size	Realized sample size	Response Rate (%)
1. Crop farming	270	306	113.3
2. Livestock keeping	120	97	80.8
3. Bee keeping	120	89	74.2
4. Maternal and Child Health (MCH)	385	341	88.6
5. Community action group (CAG)	50	48	96.0

1.4.2 Measurement units and respondents

Measurement units were the farmers, honey , goats and ration food to whom the survey data refer, and respondents are the program beneficiary farmers, honey beneficiaries, goats beneficiaries and ration food beneficiaries who have children aged 0-59 months from whom the information were obtained.

1.4.3 Level of precision

The magnitude of error in the survey estimates that was considered tolerable is 5%. This level will give 95 percent confidence that the observed statistics would not have occurred by chance.

1.4.4 Sample size computations

The size of the sample depended on the size of the estimate, that is, it's expected proportion of the total beneficiaries. A choice was made in calculating the sample size from among the many estimates that were measured in the survey. Since there were many key indicators a convention often used was to calculate the sample size needed for each and then use the one that yields the largest sample. The following formula (Basic Equation) may be used to calculate the required sample size for indicators expressed as a percentage.

Where:
N = sample size;
Z = value corresponding to a given confidence level (1.96 for a confidence level of 95%-value commonly used);
P = percentage of the primary indicator, expressed as a decimal (default 0.5);
C = standard error, expressed as a decimal (0.05 or 0.10 in general).

Table 2 Sample size determination

	Baseline values (P)	Sample size	Add non response (10%)**
Percentage of farmers who practiced value chain activities promoted by the project in the past 12 months	77%	270	297
Percentage of livestock owners accessing government or private sector veterinary services	69%	108	120
Percentage of caregivers who know at least 4 of the 6IYCF and 3 of 8 MCH practices	36%	350	385

**The sample size will be adjusted for non-response by 10%.

For farmers, the sample was calculated basing on the percentage of farmers that practiced the value chain activities promoted by the project. The sample size was calculated at 270 farmers with a 10% non response making it 297. Sampling of farmers was done within the groups of farmers.

For Health and Nutrition, the sample was calculated basing on the percentage of caregivers who know at least 4 of the 6 IYCF and 3 of 8 MCH practices. The sample size calculated was at 385 ration food beneficiaries who have children aged 0-59 months.

Bee keepers

All the bee producer groups (33) were included in the sample. However, for each group, 3-4 individuals were selected using simple random sampling and included in the sample. A total of 120 were sampled

Livestock farmers

Geographically ordered list of beneficiary groups was prepared by sub-county and district and 5 farmers per group were needed. Out of the 120 existing women livestock groups 120/5 (24) farmer groups were randomly selected and finally included in the sample

1.5 Data Collection Tools

The survey questionnaires were structured to obtain data from specific beneficiary sub populations, which included 5 sets of questionnaires as shown below:

1. – Beneficiary identification cover sheet and informed consent
2. – Crop farmer beneficiaries questionnaires
3. – Livestock beneficiary questionnaires
4. – Apiary management questionnaires
5. – Women and Children's questionnaires covering nutritional status, dietary diversity and dietary practices, Child immunization, and WASH
6. - Community action group members

No translation of the questionnaire was done since all the data collectors were Ngakarimojong speakers and were able to read and easily translate the English version of the questionnaire without difficulty for the local Karimojong respondents. The questionnaires were uploaded onto the smart phones using ODK software. All data collection was done through mobile hand held phones and data was transmitted directly for review.

1.6 Team Supervision, Training and Pre-testing

The data collection was conducted by 6 survey teams each consisting of 15 interviewers and one team leader. The teams were divided into the different beneficiary categories i.e. farmers, livestock, apiary and Community Action Groups and Health and Nutrition beneficiaries'. Training on survey methodologies and measuring techniques took two days. Team leaders closely supervised the work of the teams during the entire period of the survey. During the training, the interviewers and supervisors reviewed the questionnaire and other basic survey methodology, practiced using the questionnaire, and had the opportunity to pre-test during the last day of training.

The questionnaire was pretested during the field practice phase of the survey training to ensure that respondents in local communities understood the questions, and to give the interviewers additional practice in the field and a last chance to discuss questions not clearly understood, answer categories, skip patterns, etc. After pre-testing, changes were made to the original script to reflect the practical reality from the feedback and final copies of the questionnaires were prepared and uploaded into the mobile phones using ODK software in readiness for the field survey.

1.7 Data Collection

The survey was conducted over the eleven day period. Supervisors of each team led in overall survey team management. The supervisors also checked at random at least three quarters completed interviews by each surveyor each day. Questionnaires were randomly checked for completeness before the survey team left the survey area, so that -- in the case of missing or contradictory information -- the respondent could be

visited again that time before the interviewer leaves the place. No interviewers were refused interviews by the respondents.

1.8 Data Analysis

Data collected during the day were uploaded from ODK. Data cleaning was done. Analysis was done following the analysis plan that was prepared earlier. Analysis was done using both SPSS and STATA softwares.

1.9 Study Limitations

Weak recall of data on Gross Margin. Many farmers were not able to recall accurately data on Gross Margin. Some inflated the input costs. To counter the bias, farmers were asked depending at each every stage of production. The inflated input costs was dealt with considering the input costs that are more than 5% of the total costs as prescribed in the Feed the Future Handbook. In the future, RWANU should find around 300 farmers who can be able to read and write and gives them counter books so that they note down the different data that can be used to compute gross margin and gross margin data should be collected from those farmers only.

Measurement of garden size: Self-reported garden size measurements were inaccurate, as farmers used different methods to estimate the garden size. The survey team verified the measurement using hand held mobile phones installed with an android field area measurement application.

Inaccessible villages: Most of the roads in the sampled areas were impassable by cars and rains disrupted movement in some areas. To counter this and makes the sampling relevant, enumerators have to walk for long hours to get to the sampled beneficiaries and return the next day in case the place was not reached that day.

2.0 Overview of the Food Security in Karamoja

Karamoja is generally characterized by poor rainfall distribution and reliability manifested through prolonged dry spells and flash floods. The magnitude, frequency and severity of these hazards have increased over the past decades seriously eroding the productive assets and traditional coping capacities that support livelihoods.

The region can be classified into three livelihood zones linked to the degree of aridity and associated dependence on livestock: 1) Pastoral – semi arid zone characterized by a prolonged dry season and erratic rainfall. It comprises parts of Moroto and Amudat districts. Livestock production is the main economic activity supplemented by opportunistic farming; 2) Agro-pastoral covering Moroto, Napak Amudat and Nakapiripirit districts. The zone is highly dependent on livestock production and rain-fed crop production; and 3) Green belt – running along the western side of Karamoja, capable of supporting most tropical food crops. In the green belt areas of southern Nakapiripirit District and Iriiri sub county (Napak), a wide variety of crops are grown, including sorghum, maize, beans, groundnuts, and cowpeas

Agriculture is largely subsistence characterized by; wide spread use of rudimentary tools by over 90% of the farmers in the region, inadequate supply of clean drought tolerant and quick maturing crop varieties, crop pests and diseases and poor pre and post-harvest management practices. These threaten the communities' capacity to cope with the effects of climate change and increase food production.

Most inhabitants of the region, even those who are predominantly pastoralist, participate to some degree in agriculture. The most common crops are maize and sorghum, sometimes complemented with beans and groundnuts. However, agriculture in Karamoja is a high-risk endeavor due to the frequency of droughts and floods and low productivity. Weather in the region has been particularly erratic since 2001, with frequent dry spells (2002, 2004, 2006, 2007, 2008, 2009, 2010, and 2011). Although most of Uganda is bimodal, Karamoja experiences only one rainy season and a single harvest per year. This weather pattern limits the supply of food and increases the length of the lean period. Improved agricultural extension services are needed to improve practices. Farmers are limited in their ability to buy inputs such as improved seeds due to the lack of cash and of availability in the marketplaces. Crop diseases are also a common problem. The result is a very low quality and quantity of agricultural productivity, which contributes to the cycle of food insecurity

3.0 Annual Survey Findings

The annual survey findings are presented according to key outcome indicators which are described in the project performance monitoring plan, with a specific focus on the following content categories; characteristics of the study population, agricultural indicators, child's health and nutrition, women's health and nutrition, household sanitation practices, women decision making and participation in community action groups.

3.1 Characteristics of the study population

This section presents the characteristics of the study population which include the socio-demographics and the other characteristics of the; farmers, bee keepers and livestock farmers.

3.1.1 Socio demographics characteristics

A total of 893 beneficiaries were interviewed. Majority of farmers survey respondents were females (66.3%). Males comprised only 33.7% of all the farmers' surveyed beneficiaries.

Table 3 Beneficiaries' characteristics

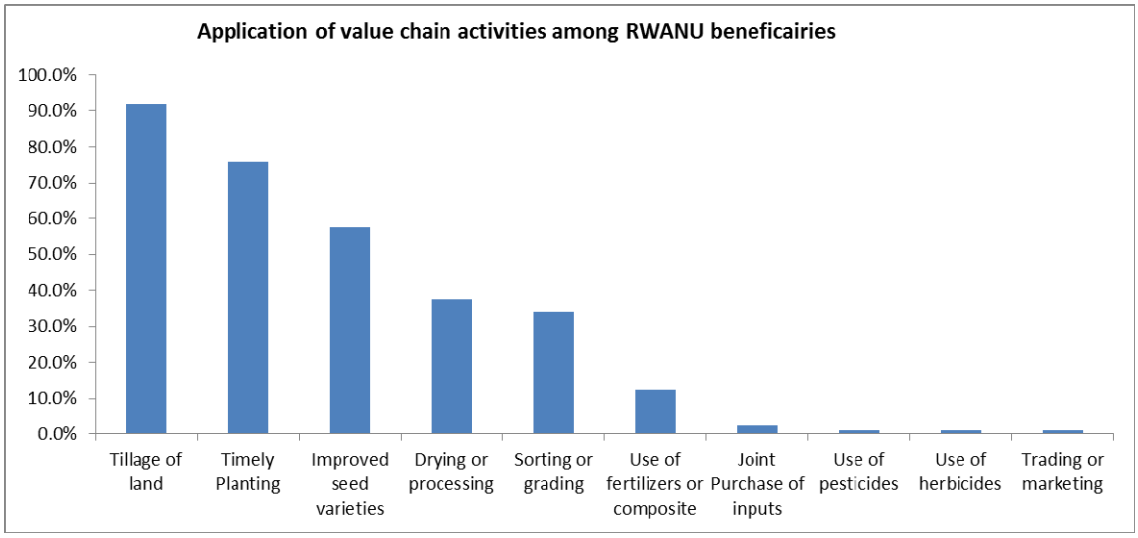
District:	**Crop Farming**		**Maternal Child health and nutrition**		**Livestock**	
	Observations	Percent	Observations	Percent	Observations	Percent
Napak	133	43.5	78	22.9	36	37.1
Nakapiripirit	154	50.3	196	57.5	49	50.5
Amudat	4	1.3	-	-	12	12.4
Moroto	15	4.9	67	19.7	-	-
Sex						
Female	203	66.3	341	100	97	100
Male	103	33.7	-	-		
Education						
None	285	93.1	301	88.3	96	98.9
Primary	15	4.9	28	8.2	1	1.1
Secondary	6	2.0	5	1.5	0	0
Tertiary and above	0	0	0	0	0	0

3.1.2 Other characteristics of crop farmers

Most of the crop farmers grow sorghum (69.5%), maize (62.4%) and beans (40.8%). Very few crop farmers grow ground nuts (7.1%). The main sources of seeds grown by the crop farmers are; markets (74.6%) and RWANU (57.3%). Very few crop farmers obtain their seeds from government sources (3.3 %, the local seeds saved from harvest (22.2%). In terms of land preparation, most crop farmers use hand tools (92.6%) followed by ox plough (28.9 %, and very few use the tractor (6.4%).

3.2. The Value Chain Activities

The value chain activities included as part of the survey and promoted by RWANU were purchase of inputs; tillage of land; sorting produce; grading produce; drying or processing produce; timely planting and trading or marketing (wholesale, retail, or export). There were 98.7% (98.5% male, 99.0% female) of farmers surveyed practiced the value chain activities promoted by the project in the last 12 months. The most common value chain activities practiced are tillage of land (91.8 %, timely planting (75.8 % and improved seed varieties (57.5 %. The finding shows that there was no difference between men and women when it comes to the practice of the value chain activities.



3.2.1 Value Chain Activity per Crop, District and Gender

Table 4 Value chain analysis by crop and gender

Value Chain	Improved seeds	Timely planting	Joint purchase	Tillage land	Fertilizers composite	Sorting grading	Drying processing	Trading marketing
Maize	54.5%	79.0%	4.8%	91.9%	16.1%	31.5%	33.1%	1.6%
Beans	55.3%	71.1%	6.0%	89.2%	15.7%	39.8%	28.9%	.0%
Groundnuts	70.0%	81.2%	.0%	87.5%	12.5%	37.5%	50.0%	.0%
Sorghum	50.4%	76.7%	3.5%	91.2%	11.9%	29.5%	35.2%	1.3%
Sex								
Male	57.4%	73.8%	3.9%	92.2%	14.6%	31.1%	37.9%	2.9%
Female	57.6%	76.8%	2.0%	91.6%	11.3%	35.5%	37.4%	.0%
Total	**57.5%**	**75.8%**	**2.6%**	**91.8%**	**12.4%**	**34.0%**	**37.6%**	**1.0%**

Table 5 Other value chain activities practiced by livelihood category

Livestock		**Bee keeping value chain practices**	
Use of animal shelters	79.4%	Use the modern bee hive	92%
Vaccinations	44.3%	Practice slashing grass and pruning trees around the apiary	33.8%
deworming	62.9%	Use of bee suits or beehive brush or smokers	15.5%
cultivation of fodder	13.4%	Created fire lines to prevent fire hazards	2.8%
		Cleaned dirty bee hives	26.8%,

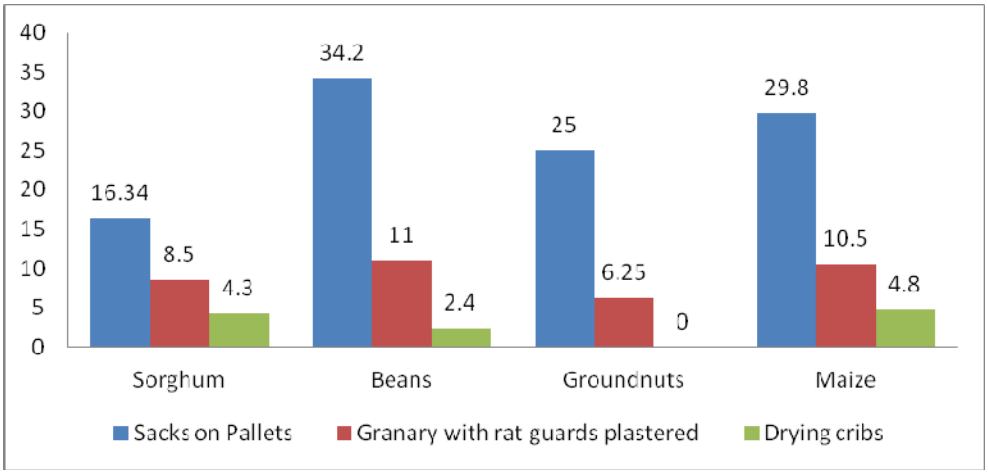
3.3 Improved Storage and Drying Practices

Improved storage techniques are methods for storage that are cost-effective and allow for long-term storage. Improved storage techniques allow a farmer to safely store excess harvest from the plot where the farmer has decision-making power for subsequent sale and/or consumption. It minimizes post-harvest losses and maximizes profits by allowing farmers to sell their products later in the season when excess product supply has diminished. Examples of cost-effective storage techniques that are promoted by RWANU include, but are not limited to:

- Drying to recommended moisture content,
- Use of Hydrometers,
- Sorting of damaged products,
- Storage in sacks/bags on pallets or improved granary (improved= use of rat guards,+ plastered granary walls),
- Use of mats or plastic sheets for drying

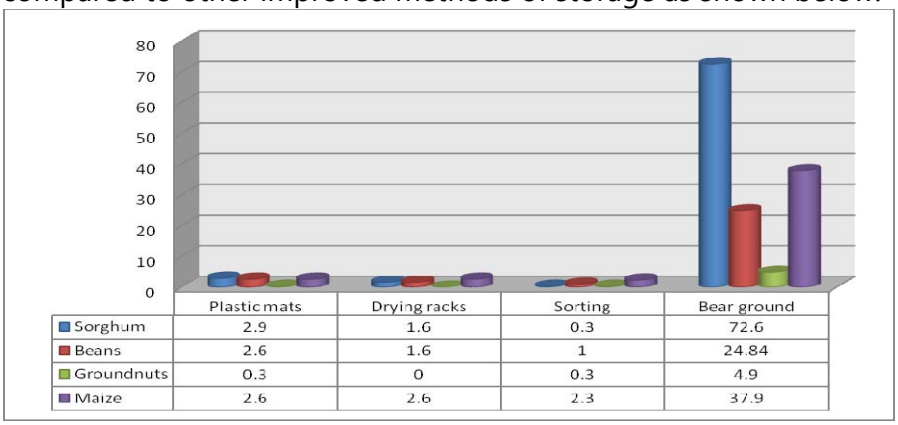
The survey result showed that 48.4% of farmers used improved storage practices in the past 12 months (Male=51.5%, Female=46.8%). The mostly common improved storage techniques practiced by farmers are; use of sacks on pallets (58.8%), Granary with rat guards improved (23.0%).

The table below shows that most crops are stored using sacks on pallets and granary with rat guards that has plastered walls as shown below;



3.3.1 Drying practices

Most of the farmers in the project areas dry their crops on the bare ground compared to other improved methods of storage as shown below.



	Plastic mats	Drying racks	Sorting	Bear ground
Sorghum	2.9	1.6	0.3	72.6
Beans	2.6	1.6	1	24.84
Groundnuts	0.3	0	0.3	4.9
Maize	2.6	2.6	2.3	37.9

3.4 Gross Margin

The gross margin is the difference between the total value of production of the agricultural product (crop, milk, eggs, fish, etc) and the cost of producing that item, divided by the total number of units in production (hectares of crops, number of animals for meat and milk, number of bee hives). Gross margin was estimated for each beneficiary group in addition to the aggregate gross margin. Gross margin per hectare, per animal, per bee hive is a measure of net income for that farm/livestock/apiary-use activity.

Gross margin was calculated from 5 data points shown below:

1. Hectares planted (for crops); Number of animals (for milk, sale); and number of bee hives. During the data collection exercise, we collected information on acres planted per plot. So we converted these into hectares.
2. Total production during reporting period: for crops, we computed the total number of kilograms. Since in Karamoja, they use other units to measure quantities produced, we converted the local units into kilograms. For

vegetables, we also covered the units into kilograms. For animals, we computed the quantities produced in liters.

3. Value of sales (USD) during the reporting period. This was simply derived by multiplying the quantities sold by the unit price for each crop, animal and bee hives.
4. Quantity of sales during reporting period; the computation was similar to total production but we only considered what the beneficiaries sold.
5. Purchased input costs during the reporting period. This was computed by adding the amount of money spent on the following: Buying fertilizers, equipment, herbicides and pesticides; hired labour for grazing; clearing the land; weeding; tending to bee hives; milking; harvesting; guarding and threshing; buying feeds for animals; water for irrigating crops and for animals; veterinary services and amount spent on buying animals if any. This computation was done separately for animals, crops, bee keepers and horticulture and then an aggregate cost was computed. Therefore, in computing the gross margin, the following values were computed using the above data points:

    - Average price = value of sales divided by quantity of sales
    - Gross revenue = average price x total production
    - Net revenue = gross revenue - purchased input cost
    - Gross margin (per hectare, per animal, per pond area, per crate) = net revenue divided by area planted/in production, by animals, by apiary, etc

In computing the gross margin, unpaid labor and other in-kind inputs, costs for tools was not included, only input cost more than 5% of the total cost was included. Commodity specific gross margin for commodities grown in the past twelve months preceding the survey was computed and is presented in the table below. Results showed that maize ($32.31) has the highest Gross Margin followed by beans ($18.20). Male ($113.10) has the highest Gross margin compared to Women ($77.52) because of the following reasons;

- Men have better bargaining power over a unit price of an item compared to women
- Men incur little input costs on production than women that incur a lot of input costs

Table 6 Gross Margin analysis by crops per hectares, goats and honey per bee hive

Value Chain	N	Hectares	Total production	Value of sales	Quantity of sales	Revenue	Input costs*	Gross margin in UGX	Gross margin in USD
Maize	154	81.1	23,923	4,121,300	5,237	18,826,40	12,273,300	80,785	32.31
Beans	102	41.1	6,477	1,177,500	910	8,381,470	6,511,100	45,490	18.20
Sorghum	249	163.6	32,374	1,646,000	2,640	20,184,947	16,594,648	21,946	8.78
Goats	97	-	97	345,000	6	208,000	137000	34,666	13.86667
Honey	76	-	59	452400	57	468273	61,000	5358	2.143546
Female	3.85	4,667,600	5,370	64,997	31,856,225	193,804	77	193,804	77.52
Male	189	5370	64997	31,856,225	23,308,148	77	193,804	77	113.1023
Total	193	4,672,970	70,368	31,921,223	55,164,373	193,881	193,881	193,881	190.62

*Only input cost more than 5% were included in the computation.

** Ground nuts: the was no sufficient respondents to compute gross margin

3.4 Livestock Management Practices Improved

The mean numbers of goats owned by the livestock farmers are 3 goats, 46% of the goats owned fell sick in past 12 months and 17% of the total goats died. The average quantity of milk produced by a goat was 0.53 of a cup. Women (31%) reported that milk was consumed by infants and 76.2% by other children. About one fifth reported that milk was consumed by all household members.

Access to Veterinary Services: Many livestock farmers accessed veterinary services from community animal health workers (CAHW), local experienced persons, or Kraal leaders.

Table 7 Access to Veterinary Services

Provider	Vaccination	Diagnosis / Treatment	Deworming
DVO	1%	1%	2%
CAHW	19%	38%	29%
Kraal Leader	33%	8%	32%

Overall, 76.4% of livestock owners accessed government or private sector veterinary services and livestock vaccination during the past 12 months preceding the survey.

3.5 Health and Nutrition

Women's Health and Nutrition

3.5.1 Women Dietary Diversity

The Women's Dietary Diversity Score is computed based on nine critical food groups. This validated indicator aims to measure the micronutrient adequacy of the diet and reports the mean number of food groups consumed in the previous day by women of reproductive age (15-49 years). The indicator is tabulated by averaging the

number of food groups consumed (of the nine food groups) across all women. The survey results indicated that women consumed on average, 3.16 foods of the nine basic food groups. Women diet diversity (WDD) score of **3.16** indicates poor dietary diversity, with only three to four of the 9 food groups consumed by women on average. The most consumed food groups consumed by women are as below;

Table 8 Most consumed food groups by women

Food Groups	Percentage
Starchy staples	99.7%
Dark green leafy vegetables	87.9%
Vitamin A rich fruits and vegetables	28.7%
Fruits and vegetables	31%
Milk and milk products	19.1%
Consuming eggs	1.2%
Legumes, nuts and seeds	63.9%

3.5.2 Antenatal Care Services (ANC for mothers with children 0-23 months)

Close to all women (99.1%) interviewed reported to have seen a skilled health professional during their pregnancy for antenatal care service. Skilled health professionals referred to included doctors and nurse/midwives. Unskilled health workers can be categorized as traditional health attendants and community health workers.

Table 9 Antenatal Care of mothers of children (0-23 months)

Antenatal Care Personnel	Observations	Percentage
Skilled Health Professionals Visited		
Doctor	31	9.09
Nurse/Midwife	337	98.8
Unskilled Health Workers Visited		
Traditional Birth Attendant	71	20.8
Village Health Worker	12	3.5

The WHO recommends that pregnant women should make at least four ante-natal care visits to skilled health practitioners. Results showed that about three quarters (76%) of the women in the program made 4 visits for ante antenatal care during their last pregnancy. Interesting results from the field shows that women are seeing one or more ANC service providers. Very few people are accessing ANC services from Doctors (9.1%) compared to the midwife at 98.83%

Table 10 ANC per individual

	Number of ANC visits	Frequency	Percent
Valid	**1**	3	0.9
	2 to 3	78	23.0
	4 +	258	76.1
		339	100.0

76.1% of mothers with children aged 0-23 months had four or more ANC visits with their youngest child. 23.0% of the women had 2-3 ANC visits and 0.9% had one ANC visit.

3.5.3 Knowledge of IYCF and MCH Practices among female caretakers

Female caretakers of children under 5 years old were also asked to give as many examples as they could of important maternal and child health (including IYCF) practices. A total of 53.08 percent of caretakers of children under 5 years of age were able to identify at least seven of 7 of the 14 important IYCF and MCH practices as shown in the table below.

Table 11 Distribution of knowledge of IYCF and MCH practices among women aged 15-49 years.

	Number, n	Percent
Initiate breastfeed within 1 hour of delivery	154	45.2
Exclusive breastfeed for six months	51	27.0
Introduction of appropriate, safe, and adequate complement foods at 6 months up to 2 years and beyond	236	69.2
Breastfeed frequently on demand, both day and night	291	85.3
Promotion of use of variety of nutritious, locally available foods for infants and young children	229	67.2
Pregnant/lactating women who receive appropriate care and encouraged to consume adequate quantity of nutritious foods	197	**57.8**
Continue or increase breastfeeding when mother or child is sick	103	30.2
When infant unable to suckle, expressed breast milk fed by cup or tube	40	11.7
Mother maintains health card to monitor growth and development of child	177	51.9
Ensure timely immunizations	208	61.0
Ensure child sleeps under treated mosquito net (ITN)	166	48.7
Feeding frequent meals and snacks	152	44.6
Feeding foods rich in iron	41	12.0
Percentage of caregivers who know at least 7 of 14 IYCF and MCC practices	181	**53.1**
Percentage of caregivers who know at least 3 of 8 MCH practices	239	**70.0**
Percentage of caregivers who know at least 4 of 6 IYCF practices	241	**70.7**
Percentage of caregivers who know at least 4 of 6 IYCF and 3 of 8 MCH practices	181	**53.1**

3.5.4 Children's Health and Nutrition Indicators

3.5.5 Exclusive Breast Feeding Practice

Breastfeeding is an important factor in predicting the future health of children. Research indicates a strong link between breastfeeding and the development of a child's immune system. UNICEF and WHO recommend that children be exclusively breastfed (no other liquid or solid food or plain water) during the first 6 months of life and that children be given solid/semisolid complementary food in addition to

continued breastfeeding beginning when the child is 6 months old and continuing to 2 years and beyond. Introducing breast milk substitutes to infants before 6 months of age can contribute to limiting breastfeeding, which has negative implications for a child's health and development. Substitutes such as formula, other kinds of milk, and porridge are often watered down and provide too few calories. The lack of appropriate complementary feeding may lead to malnutrition, frequent illnesses, and possibly death The survey result reveals that below half (27%) of the mothers exclusively breast-fed their children for the first six months as recommended by the Ministry of Health as shown in the table below.

Table 12 Children 0-5 who are Exclusive Breastfeeding

	Frequency	Percent
No	138	73.0
Yes	51	27.0
Total	189	100.0

3.5.6 Children Nutrition Status

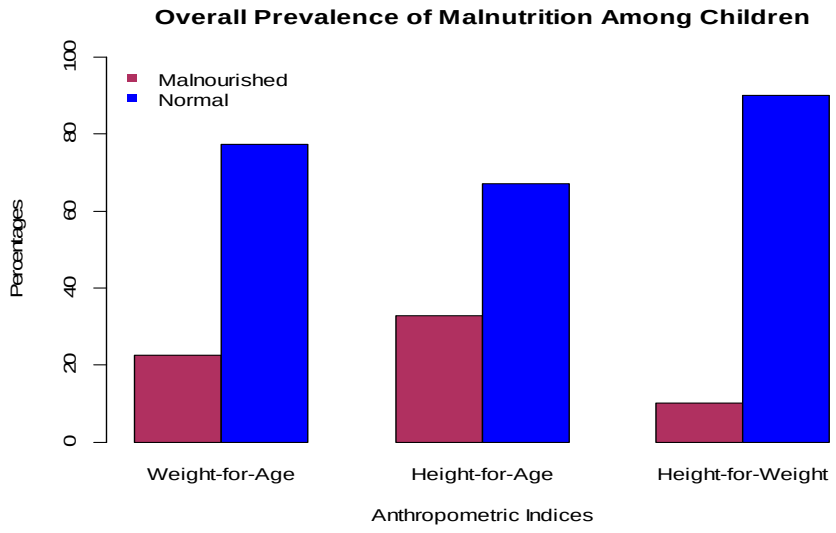
The most critical time in a child's development is the first 1,000 days from conception to their second birthday. These first days are the window of opportunity to ensure that children survive, flourish and fulfill their potential. A total of 471 children were included in the anthropometric analysis. Overall, there was an equal representation of male and female children attesting to effective sampling procedures. The anthropometrics measurements were taken for the children aged 0-59 months. The height-for-age, weight-for-age, and weight-for-height were used to determine under nutrition (Severe and moderate acute malnutrition).

Table 13 Sex Ratio and Distribution of Sampled Children

District	Sex ratio of sampled children			Distribution of sampled children by age			
	Boys	Girls	Boys:Girls Ratio	6-8 months	9-23 months	24-59 months	Total
Moroto	14	18	0.8	5	9	17	31
Nakapiripirit	114	107	1.0	10	69	129	208
Napak	108	108	1.1	13	52	143	208
Amudat	17	11	1.5	3	5	16	24
South Karamoja	253	244	1.0	31	135	305	471

The overall level of prevalence of malnutrition shown in Figure 3.9.1 must be addressed to enable children to attain their full growth potential. The high levels of

stunting 32.9% among the beneficiaries show chronic lack of nutrients during a child's first 1,000 days, from conception to their second birthday.



The stunting levels shade a clear picture of poor feeding practices, poor food quality, and frequent infections (incidence of diarrhea) among the beneficiaries. The high wasting 22.7% among the beneficiaries can be indicating a major food shortage.

Prevalence of Malnutrition among Children

The stunting distribution levels within sexes (boys and girls) are high. There is significant difference in stunting and underweight within sexes. The wasting levels were found to be higher in girls than boys at 12.2% versus 7.7% respectively, with no significant difference (= t=2.11; p = 0.145). The finding of this survey suggests that wasting is independent of gender.

Table 14 Nutrition status of children under five years of age (0-59 months)

Sex	Stunted (≤ -2 Z scores)	Underweight (≤ -2 Z scores)	Wasted (≤ -2 Z scores)
Male (boys)	33.5%	22.3%	7.7%
Female (girls)	32.5%	23.0%	12.2%
Overall prevalence	**33.0%**	**22.7%**	**10.0%**

The results in show that children aged between 24 -59 months had the highest level (35.6%) of stunting. The prevalence of wasting, stunting and underweight ranges from poor to critical according to WHO category expect for wasting 24-59months that is within the acceptable range. The overall GAM prevalence among children 6-59 months in among the beneficiaries is 22.8%, (95% CI 0.8 - 0.14. Wasting/acute

malnutrition is characterized by a rapid deterioration in nutritional status over a short period of time, and mostly due to food shortage.

Table 15 Prevalence of malnutrition by age among children 0-59 months

Age group (months)	Height-for-age (≤ -2 Z scores)	Weight-for-age (≤ -2 Z scores)	Weight-for-height (≤ -2 Z scores)
6-8	21.7	16.7	21.74
9-23	29.4	23.4	14.42
24-59	35.6	22.9	7.0

Generally, all age categories among children of the beneficiaries show highest rates of malnutrition. Therefore, proper feeding practice needs to be emphasized by the health promoters during Lead mother meeting in the different Mother Care groups.

Prevalence of Stunting

A deficit in height-for-age is referred to as stunting and a low height-for-age index reflects past under-nutrition or chronic malnutrition and is an indicator of general growth failure. Slow growth of a child results in a failure to achieve expected height as compared to a healthy, well-nourished child of the same age. The level of stunting among children was found to be 33%, of which 14.7% where severely stunted. The results are comparable to the stunting levels of 42.2%, 31.6%, 47.2% and 25.1% of Moroto, Nakapiripirit and Amudat respectively found by UNICEP and WFP (June 2014) report among children 6-59 months in southern Karamoja region.

Nevertheless, this stunting result was lower than the Uganda National stunting level of 38.1% among children under five (UBOS, 2006). According to WHO (2006) classification guidelines, this value is a severe (30^{+} %) degree of stunting in the program coverage area. The results indicate a considerable problem of stunting among the children in the program area. The findings suggest that children are exposed to poor nutrition in their early childhood.

Table 16 Height-for-Age nutrition index for children age 0 - 59 months

Age group (months)	Sever stunting (<-3 Z-score)		Moderate Stunting (≥-3 and <-2 Z-score)		Normal (≥-2 Z-score)	
	No	**%**	**No**	**%**	**No**	**%**
6-23	15	11.4	22	16.7	95	71.9
24-59	41	16.4	48	19.2	161	64.4
Total	**56**	**14.7**	**70**	**18.3**	**256**	**67.0**

Prevalence of Underweight

Underweight, defined as weight-for-age, is a composite measure of both stunting and wasting. It identifies the condition of being underweight for a specific age and

reflects both chronic and acute-under nutrition. The prevalence of underweight was 22.6% of which 6.9% children were severely underweight (Table 17).

Table 17 Weight -for-Age nutrition index for children aged 0-59 months.

Age groups in months	Sever under weight (<-3 Z-score)		Moderate under weight (≥-3 and <-2 Z-score)		Normal (≥-2 Z-score)	
	Number	%	Number	%	Number	%
6-23	9	6.7	21	15.6	105	77.8
24-59	18	7.1	40	15.8	195	77.1
Total	27	6.9	61	15.7	300	77.3

Prevalence of Wasting

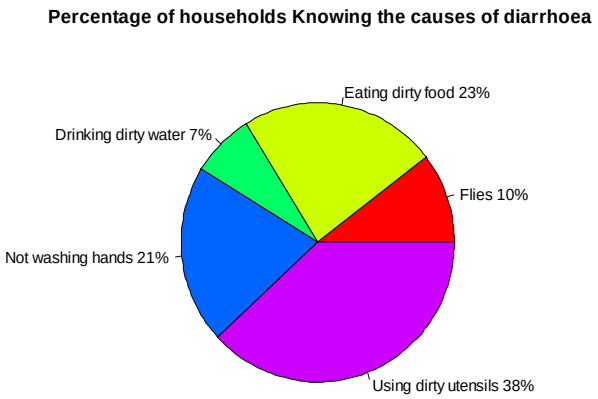
Wasting in children is an indicator of acute malnutrition resulting from failure to gain weight or actual weight loss and is used to reflect the overall severity of under nutrition. The wasting is 9.9% were 2.9% children were severely wasted. The children aged between 6 - 23 months are the most affected. This wasting can be attributed to food availability or disease prevalence to which the measurement is very sensitive. The 9.9% wasting value indicates a serious problem within the program coverage area.

Table 18 Weight-for- height nutrition index for children.

Age group	Sever wasting (<-3 Z-score)		Moderate wasting (≥-3 and <-2 Z-score)		Normal (≥-2 Z-score)	
	No	%	No	%	No	%
6-23 months	8	6.3	12	9.5	107	84.3
24-59 months	3	1.2	14	5.8	226	93.0
Total	11	2.9	26	7.0	333	90.0

3.5.7 Diarrhea and ORT

The diarrhea incidence was high, with 56.3% of the household reported to have had at least a member affected with diarrhea in the past 2 weeks preceding the survey. Diarrhea has direct effect on poor health and contributes to malnutrition, reduced resistance to infections, and sometimes impaired growth and development. Among the respondent, 89.5% knew the causes of diarrhea as shown in figure below.



The organisms causing diarrhea can be transmitted from infected faeces to people through food and water, person-to-person contact, or direct contact. Most of the household said

diarrhea can be avoided as follows:- 71.3% Cleaning hands before handling food, Cleaning 13.7% hands after contact with faeces, 8.3% Boiling drinking water and 6.7% did not know.

Diarrhea infection (for children 0-23.9 months)

Dehydration caused by severe diarrhea is a major cause of morbidity and mortality among young children, although the condition can be easily treated with oral rehydration therapy (ORT). Exposure to diarrhea-causing agents is frequently related to the use of contaminated water and to unhygienic practices in food preparation and disposal of excreta. Caretakers were asked whether any children under age 5 had diarrhea at any time during the two-week period preceding the survey. A total of 114 caregivers with children between 0 and 23.9 months participated in the survey. The percent of the children were reported to have had diarrhea during the two weeks preceding the survey were 34.3%.

If the child had diarrhea, the caretaker was asked about feeding practices during the diarrheal episode, whether they sought advice or treatment, and whether ORT was given to the child. Types of ORT type included fluids made from a special packet (Zinkid or RESTORE), reconstituted ORT liquid provided through government health facilities, and a government-recommended homemade fluid. Caretakers were also asked whether there was blood in the child's stools. The percent of children less than 5 years of age with diarrhea were treated with ORT were 71% (80.3% male, 58.3% female).

Table 19 Children's Diarrhea Treatment

Diarrhea and Treatment Status	Number	Percentage
Fluid from ORS packets	39	35.8
Homemade fluid	11	10.2
Pill or syrup Zinc	81	71.0
Home remedies	6	1.3
Others	13	3.8

The levels of diarrhea could be linked to the poor environmental sanitation and linked to weather changes.

3.5.8 Minimum Acceptable Diet (MAD)

Adequate nutrition during the period from birth to 2 years of age is critical for a child's optimal growth, health, and development. This period is one marked for growth faltering, micronutrient deficiencies, and common childhood illnesses such as diarrhea and acute respiratory infection (ARI). Adequate nutrition requires a minimum dietary diversity, which is measured in terms of seven key food groups. In addition to dietary diversity, feeding frequency (i.e., the number of times the child is

fed) and consumption of breast milk (or other types of milk or milk products) needs to be considered. All three dimensions are aggregated in the MAD indicator. This indicator measures the percentage of children 6-23 months of age who receive a MAD, apart from breast milk. The MAD indicator measures both the minimum feeding frequency and minimum dietary diversity, as appropriate for various age groups. If a child meets the minimum feeding frequency and minimum dietary diversity for his or her age group and breastfeeding status, the child is considered to be receiving a MAD.

Minimum dietary diversity for breastfed children 6-23 months is defined as four or more food groups out of the following seven food groups: (1) Grains, roots, and tubers, (2) Legumes and nuts, (3) Dairy products (milk, yogurt, cheese) (4) Flesh foods (meat, fish, poultry, and liver/organ meats), (5) Eggs, (6) Vitamin A-rich fruits and vegetables, (7) Other fruits and vegetables.

Minimum meal frequency for breastfed children is defined as two or more feedings of solid, semi-solid, or soft food for children 6-8 months and three or more feedings of solid, semi-solid, or soft food for children 9-23 months. For the MAD indicator, minimum dietary diversity for non-breastfed children is defined as four or more food groups out of the following six food groups: (1) Grains, roots, and tubers, (2) Legumes and nuts, (3) Flesh foods (meat, fish, poultry, and liver/organ meats), (4) Eggs, (5) Vitamin A-rich fruits and vegetables; and (6) Other fruits and vegetables.

Mothers of children aged 6-23 months were asked if their children have eaten the food groups mentioned above during the day or at night yesterday.

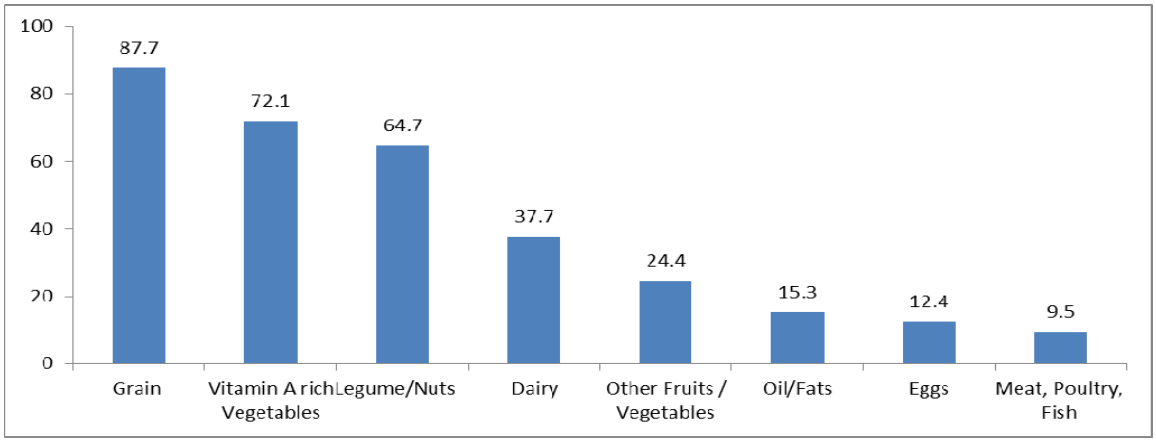
Table 20 Type of foods fed to the child aged 6 to 23 months

Foods	**Percentage**
Breast Milk	98.5
Plain Water	91.4
Commercially produced infant formula	2.9
Other (porridge or gruel)	87.6

A total of 138 caregivers participated in the feeding practice survey. Almost all the respondents (98.5%) reported to have ever breastfed their children while 91.4% gave plain water. 87.6% of the caregivers reported feeding porridge/gruel to the children. Commercial foods and fortified infant and younger foods were the least fed.

The most commonly consumed solid complementary food group for children within six to 23 months was grain (87.7%), followed by Vitamins A rich vegetables (72.1%) and legumes/nuts (64.7%). Foods of animal origin such as meat and fish (9.5%) and eggs (12.4%), were the least consumed food groups. The result of this survey predicts the likelihood of insufficient high biological value protein and micronutrient intake among children in the program area.

Figure: Complementary solid foods by food groups fed to children aged 6 to 23 months



In general, 7.7% of the children 6-23 months received Minimum acceptable diet.

3.5.9 Immunization

The percentage of children aged 12-23 months who are fully immunized (BCG, DPT3B, polio3/OPV3, measles/MMR) was measured; first by asking to see the child's vaccination card, and second by asking the mother if the vaccination card is not available. The survey showed that 25.8 percent of children received the basic vaccinations. The table below shows the survey results of children age 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report).

Table 21 Percentage of children aged 12-23 months who are fully immunized (BCG, DPT3B, polio3/OPV3, measles/MMR).

		DPT			Polio				Measles	All basic vaccinations	Percent with a vaccination card seen
	BCG	1	2	3	0	1	2	3			
Sex											
Male	95.4	7.7	7.9	7.9	95.6	93.5	91.3	93.5	80.4	20.4	97.9
Female	97.8	14.3	16.7	16.7	87.7	92.4	89.2	92.3	80.0	30.7	100
Total	**96.5**	**11.6**	**13.0**	**13.0**	**90.9**	**92.8**	**90.1**	**92.7**	**80.1**	**25.8**	**99.2**

3.5.10 Water Hygiene and Sanitation (WASH)

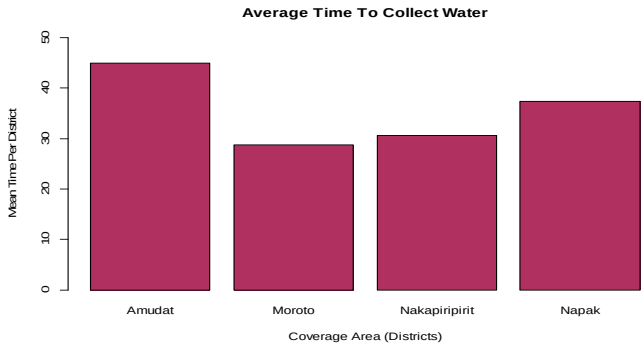
3.5.11. Access to Water

RWANU beneficiaries were asked about their main source of drinking water, 85.7% had access to safe drinking water sources that included (borehole, pipe water, protected wells or springs). Borehole was the most commonly reported source with 91.2% and rain water with 1.5% of the sample.

Table 22 Sources of water used in households

Safe water	**n = 363 (%)**	**Unsafe water**	**n = 363 (%)**
Borehole	331 (91.2)	Surface water	38 (10.5)
Piped water Taps	25 (6.7)	Shallow Wells	10 (2.8)
Protected wells or springs	14 (3.9)	Open wells or springs	4 (1.1)
Sand dug wells	7 (1.9)		
Rain Water	5 (1.4)		
Overall safe water	**311 (85.7)**	**Overall unsafe water**	**52 (14.3)**

The average time taken to collect was within a walkable distance of 37 minutes. Observation during the survey by the enumerators reveal that all the villages have safe water source within an estimated distance of 800m from the Manyattas except in Losidok parish where the average distance to the source is 1.4Km and the time is 3 hours to and from the source.



Respondent were asked whether they treat their drinking water and 21.3% of the sampled were practicing safe methods of water treatment. The most practiced method to make water safe was boiling (31.9%). Otherwise many households would do nothing (25.5 %) or let the water stand and settle before its drunk (34.0%). This type of approach exposes the household members to a risk of contracting a number of disease associated water.

Table 23 **Making water safe (treatment of drinking water)**

Safe procedures	n = 47 (%)	Unsafe Procedures	n = 47 (%)
Boil	15 (31.9)	Let it stand and settle	16 (34.0)
Chlorinate	1 (2.1)	Nothing	12 (25.5)
		Filter	8 (17.0)
		Strain through a cloth	3 (6.4)
Overall Safe procedures	10 (21.3)	Overall unsafe procedures	37 (78.7)

3.5.12 Water transportation, storage and consumption

Ninety seven (97.5%) of the program beneficiaries used jerry cans to transport water and 2.75% used pots. Further, 84.5% of the respondents used jerry cans, 15.9% used pots, and 1.7% used buckets for storing drinking water in the households across all the RWANU coverage area.

Table 24 Water transportation and storage

Type of container	***Water transportation n = 363 (%)***	***Water storage n =*** 363 ***(%)***
Jerry can	354(97.5)	307 (84.6)
Bucket		6 (1.7)
Pot	10 (2.75)	58 (15.9)
Saucepan		

Transportation and storage - Household were asked how water is stored and over 80% of the beneficiaries stored their water in Jerry cans.

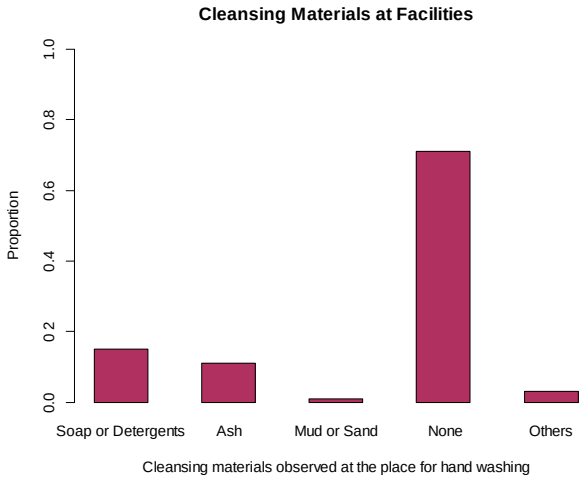
Table 25 Water handling cycle and contamination points

		n = 311 (%)	% (95% CI)
a.	Proportion of households using an improved /safe drinking water source	85.7%	0.81 - 0.88
b.	Percent of households covering water containers	22%	0.17 - 0.27
c.	Percent of households that wash water storage containers	82%	0.77 - 0.86
d.	Percent of households that practice proper methods of drawing drinking water from the storage containers	84%	0.78 - 0.86

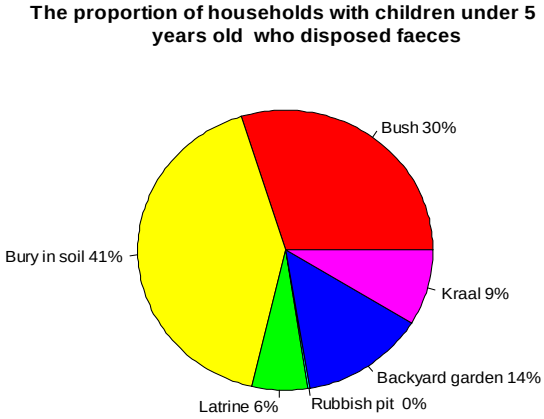
Coverage of water storage containers: Among the 85.7% of the households that obtained water from a safe source, the percentage that kept water in covered containers was 21.4%. There was high number that reported cleaning the water storage container (82%) and those that practices proper water drawing methods before drinking (84%). The percentage of the households washing water storage containers/ vessels before filling them with water is 81%. Households frequency of washing water storage vessels is categorized as follows; 37.2% each time before adding water, 11.5% twice-week, 25.4% once a week, 6.9% once a day and 18.9% once in a month or more. The respondent was requested to demonstrate how they draw drinking water from a water vessel/container. 83.7% of households practiced proper methods of drawing drinking water from the storage containers. The methods included;- 82.9% pouring, 12.1 % dipping with a drinking cup, 4.1% drink direct from the container and 3.6% double Cup.

Contamination of Safe water: Further investigation was made to find out the possible source of contamination at the households during consumption by assessing the way each household draw water from the storage container. The result shows that 95% of the respondents practices proper method of drawing water from the storage container (pouring from the storage or using tap). About 5% uses inappropriate methods such as dipping with drinking cup, drinking directly from the container.

Hand washing knowledge and practice: Hand washing is part of a broader package of hygiene promotion interventions and one way of preventing faeco-oral disease transmission. The respondents were asked the type of facilities they used, 97.3% of the household had hand washing facility at their places of defecation. The type of hand washing facilities included 91.5% open water container, 4.1% tippy tap, 1.7% closed water container with tape and 2.7% none at all. The women, children and any other household members in the different households were responsible for refilling hand washing facilities with water. However 34.7% households had cleansing material at their facilities. Approximately 70% of the households did not have hand cleaning material after defecation.



Disposal of children feacle matter: The respondents were asked how they disposed off faeces for children under 5 years. Results showed that 47% disposed off children faeces safely mainly (41% bury in soil and 6% latrine). Below the figure shows the different methods practiced in disposing children feacal matter.



3.5.13 Personal Hygiene and Hand Washing

Hand washing aims to decontaminate the hands and prevent cross transmission. The practice of hand washing and the factors that influence hand washing behaviour among individuals in communities are complex. The respondents were asked of the 5 critical hand washing moments. The proportion of respondents who know at least 3 of the 5 critical moments for hand washing was 33.1%. The graph below shows most of the respondents knew that it's important to wash hands before eating food (94.2%) and majority were less knowledgeable about before feeding a child (14.9%).

Beneficiaries were asked how the households members wash their hands before eating food for example, washing hands with water only or with soap may be influenced by both knowledge of best practice and availability of water and soap. Washing hands with soap was reported among 8.9% of the households. Other washing practices included; washed hands without soap (35.3%), running water with/ without soap 32.5% and dip hands in shared open container (22.7%). These practices are likely to contribute to food contamination as germs present on unwashed hands and may be transferred to those who subsequently dip their hands in the same bowl

Figure X: Critical Hand Washing Moments

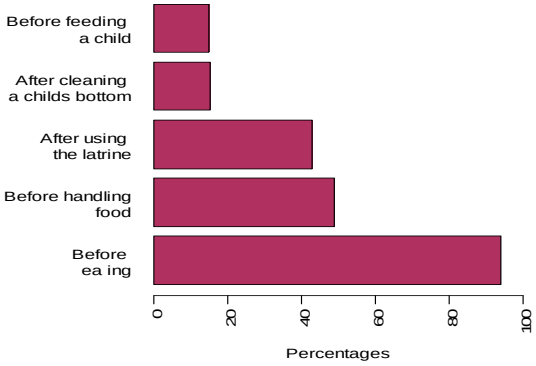
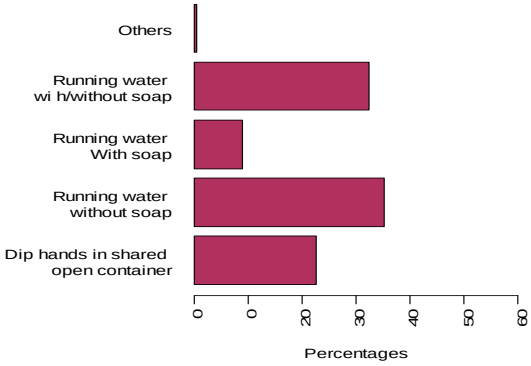


Figure Y: Hand Washing Before Eating Practices By Household Members



of water.

Disposal of Household Refuse: Waste management was one of the many hygiene promotion interventions, however among the respondents, approximately 6% had rubbish pit for disposing off their households refuse. Most of the respondents practiced open dumping (73.6%), river (0.3), burning (8.3%), Gardens (7.7%) road side (4.7%) and kraal 10.5%).

Environmental Hygiene:

Figure 1: Diseases Caused by Poor Household Hygiene and Sanitation

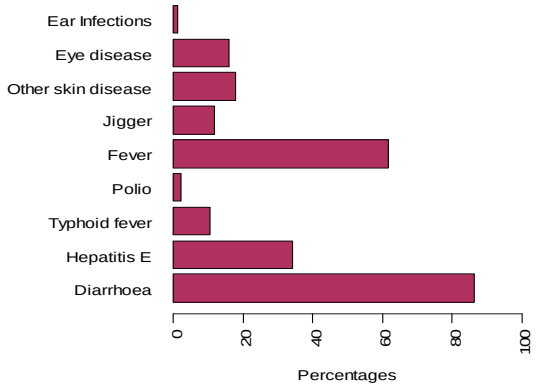
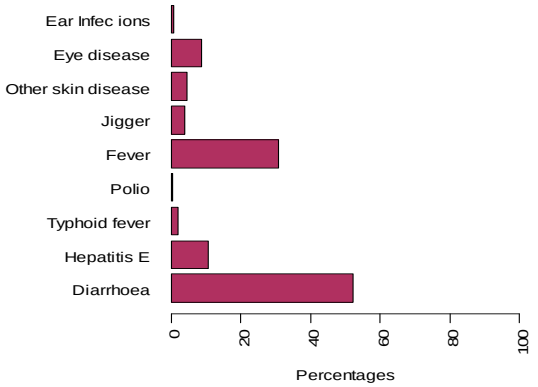


Figure 2: Household Member suffered from any Diseases Past 2 Weeks



3.6.1 Decision Making for Women

Women are more likely to make decisions jointly with their husbands than when alone. Spending and the use of assets are the areas women are not yet empowered on.

Table 26 decision making for women on health and use of productive assets

Decision Making	Percent
About health care for themselves	85.4
About health care for children 0-59	85.8
About spending money that the she herself has earned	69.3
About how to use productive assets	41.5
Over all Total in Decision Making	70.5

3.6.2 Disaster risk reduction and natural resource management

Households' means of coping with food insecurity has led to practices that threaten the environment. Many households supplement income by collecting wood and producing charcoal for sale. The increased reliance on natural resources contributes to the rapid degradation of the environment in Karamoja, and this trend is expected to increase food insecurity. RWANU farmers were interviewed on the soil and vegetation conservation practice. Nearly all farmers practices tree stump regeneration and planted protective trees. This may not be attributed directly to project intervention, but rather a community own means of adaptation to harsh weather changes. There were also several other agencies that have supported communities to implement natural rejoices management and disaster risk reduction in Karamoja.

Farmer Managed Natural Resource Management

Soil conservation	Tree stump regeneration	96.8%
	Soil bands	23%
	Water diversion channels	16.5%
Vegetation conservation	Protective trees	96.8%
	Bush burning	10%
	Fodder trees planted	0.3%

3.6.3: Community Action Groups:

Community Action Groups (CAGs) were the key mechanism to address community concerns that arose and to mitigate potential conflict. Through the CAGs, project staff engaged communities in planning and mobilization of beneficiary groups. CAGs were mobilized as part of RWANU start-up once livelihoods and health and nutrition field activities were rolled out. There are now 32 CAG in various sub counties. CAG members were interviewed to assess their interest and satisfaction with the CAG activities. Majority (68.75%) of the members reported that their meetings are useful and achieving their objectives. When asked whether the meetings were relevant 87.9% responded in affirmative and 57.6% reported that the accomplishment of CAG work were worthwhile.

Resiliency through Wealth, Agriculture and Nutrition in Karamoja (RWANU)

Application of a Community Score Card in Moroto and Napak districts: A pilot study

April 2014

Resiliency through Wealth, Agriculture and Nutrition in Karamoja (RWANU)

Application of a Community Score Card in Moroto and Napak districts: A pilot study

This report was prepared by:

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For

Concern Worldwide

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EXECUTIVE SUMMARY

The report presents background, scope and methodology for the Community Score Card Application. It presents a summary of results: rating of specific dimensions, which affect health service delivery. A Community Score Card (CSC) is a qualitative tool used for local level monitoring and performance evaluation of services, projects and government administrative units. It includes an interface meeting between service providers and the community that allows for immediate feedback. This CSC provided a two-way assessment of health service delivery in Napak and Moroto districts. The Scorecard process brought together the demand side (health users) and the supply side (healthcare providers) to jointly analyse the status of health service delivery and devise a common way of addressing service delivery gaps.

The pilot CSC covered a total of six public health facilities, three in each of the two districts. The selection of health facilities was purposive as a pilot application before roll-out to other sites of the Resiliency through Wealth, Agriculture and Nutrition in Karamoja (RWANU) program. The RWANU program responds to Food for Peace's (FFP) overall strategic objective for the Title II program in Uganda: reduce food insecurity among chronically food insecure households. RWANU is implementing in 16 sub-counties in Napak, Moroto, Amudat and Nakapiripirit Districts of South Karamoja.

This pilot CSC process kicked off in February 2014 with capacity building for community structures on the application of the score card which was followed by; setting up community monitoring structures; community sensitization meetings on entitlements at each level of public health centre, health rights and responsibilities and finally the actual assessment of health services by community members and health workers.

This initial scorecard not only provides a foundation for RWANU's community monitoring work, but also progressively serves as a basis for ongoing assessment of services throughout the program. The scorecard will continually provide platforms for joint engagement between duty bearers and citizens to enforce social accountability on the agreed actions.

Although the findings herein are for a pilot exercise, they are an actual reflection of the community and health workers perceptions on service delivery. RWANU therefore looks forward to intensified advocacy from all stakeholders for the suggested actions from the community to the national level.

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ABBREVIATIONS

ACDI/VOCA	Agricultural Cooperative Development International
ANC	*Antenatal Care*
CSC	Community Score Card
DHO	District Health Officer
DHT	District Health Team
FFP	Food for Peace's
HC	Health Centre
HMIS	Health Management Information System
HUMC	Health Unit Management Committee
KIDDP	*Karamoja Integrated Disarmament And Development Programme*
LC	Local Council
MoH	Ministry of Health
NGO	Non Governmental Organisation
NUSAF	Northern Uganda Social Action Fund
PNC	*Postnatal Care*
PNFP	Private Not for Profit
RWANU	Resiliency through Wealth, Agriculture and Nutrition in Karamoja
TBA	Traditional Birth Attendant
ToTs	Trainers of Trainers
UNHCO	Uganda National Health Users'/Consumers' Organisation
VHT	Village Health Teams
WHH	Welt Hunger Hilfe

SECTION ONE
INTRODUCTION

1.0 Background of the Community Score Card Process

A Community Score Card (CSC) is a qualitative tool used for local level monitoring and performance evaluation of services, projects and government administrative units. It includes an interface meeting between service providers and the community that allows for immediate feedback. This CSC provided a two-way assessment of health service delivery in Napak and Moroto districts. The Scorecard process brought together the demand side (health users) and the supply side (healthcare providers) to jointly analyse the status of health service delivery and devise a common way of addressing service delivery gaps.

This CSC was prepared by Uganda National Health Users'/Consumers' Organisation (UNHCO) as part of the Resiliency through Wealth, Agriculture and Nutrition in Karamoja (RWANU) project implemented jointly by Concern Worldwide (Concern), ACDI/VOCA and Welt Hunger Hilfe (WHH).

The program responds to Food for Peace's (FFP) overall strategic objective for the Title II program in Uganda: reduce food insecurity among chronically food insecure households. RWANU is implementing in 16 sub-counties in Napak, Moroto, Amudat and Nakapiripirit Districts of South Karamoja, an area selected because of the high levels of malnutrition, the existing social and economic interrelationships, the relative security of the area, and the potential for sustainable results. The program has a five-year duration, and began in late August/early September 2012, with full implementation beginning in January 2013. In total the RWANU program is expected to reach a total of 200,399 beneficiaries.

The social accountability intervention and particularly the Community Score Card will contribute to the realisation of Strategic Objective 2: "To reduce malnutrition among pregnant and lactating mothers".

The project goal is "Reduced Food Insecurity among Vulnerable People in 4 districts in Karamoja".

1.1 Key features of the Karamoja Context

Karamoja is the poorest, most remote and least developed part of Uganda. Its population of over 1.2 million people is deprived of basic services including health and access to safe water. For decades, it has suffered high levels of conflict and insecurity, alongside low levels of development and serious challenges to individual well-being.

Karamoja region has the poorest health indicators in the country. About 100 children below five years die each week from preventable illnesses. The region is "off-track in meeting health and nutrition-related Millennium Development Goals and is the worst place to be a child, with highly elevated levels of early childhood mortality and morbidity"[1].

The above situation is attributed to low access and utilisation of basic health services - averaging 24% compared with the national rate of 72%. The situation is compounded by lack of awareness among local communities. Maternal mortality is at 750 per 100,000 live births – 50% higher than Uganda's national average (KIDDP).

Sanitation and hygiene in the Karamoja region is not any better. Karamoja region is on the extreme end with more than 80 percent of households not having any of the hand washing facilities (water/soap/detergents)[2].

1.2 Objectives of the Community Score Card

i. Strengthen capacity of community structures to monitor and improve healthcare delivery
ii. Strengthen demand for health services by target communities
iii. Improve accountability and responsiveness among duty-bearers

1.3 Coverage of the Score Card

The pilot CSC was conducted in the two Ugandan districts, Napak and Moroto in the Karamoja region. It covered a total of six public health facilities, three in each of the two districts. The selection of health facilities was purposive as pilot application before roll-out. The list of the health facilities is provided in Table 1 below:

---

[1] Office of the Prime Minister (2011) *Karamoja Integrated Disarmament And Development Programme (KIDDP);A Revised Sector Comprehensive Logframe,* 2011-2015

[2] Uganda Bureau of Statistics (2012). *Uganda Demographic and Health Survey 2011*

Table 1: Health facilities targeted in the Score Card

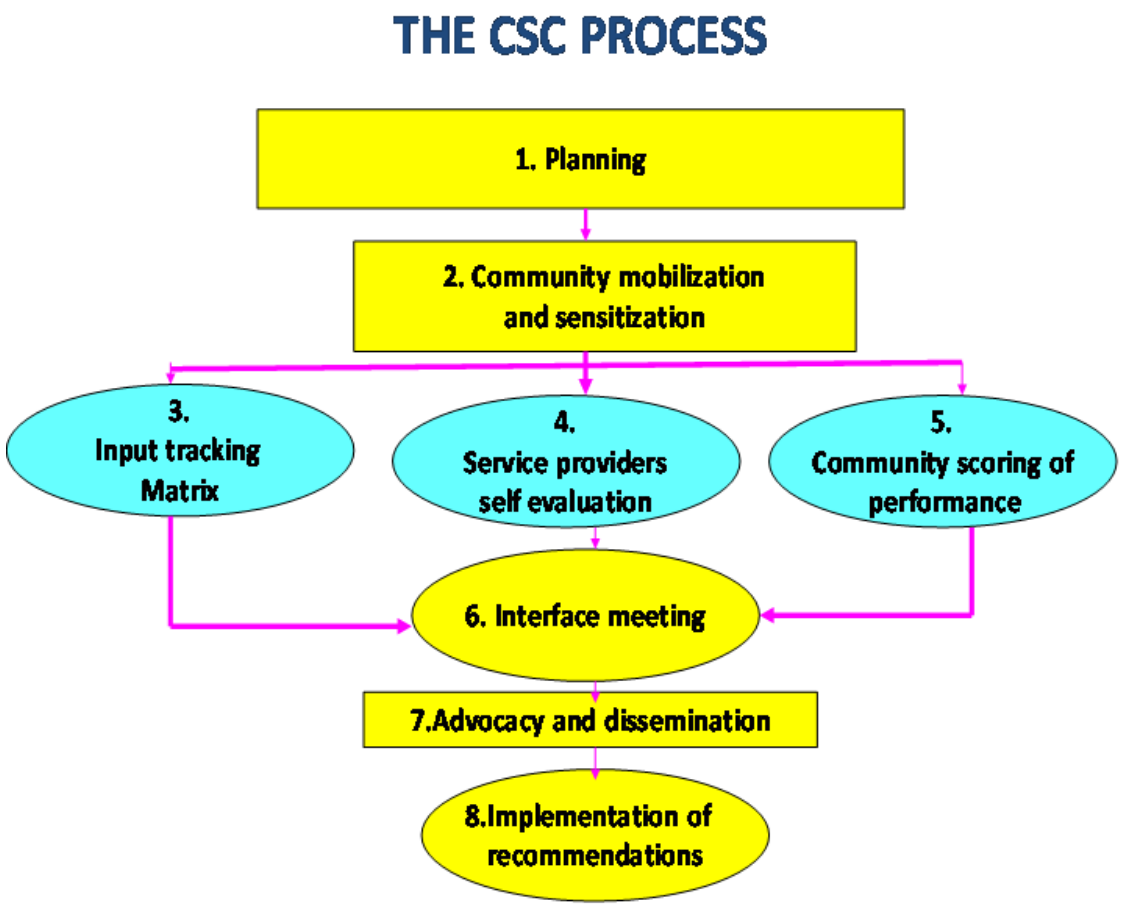
Moroto District	Napak District
Nadunget HCIII	Ngoloriet HCIII
Lotirir HC II	Lotome HC III
Loputuk HC II	Kangole HC II

SECTION TWO
THE COMMUNITY SCORE CARD PROCESS

2.0 Introduction

The CSC was conducted following the conventional stages involving preparation; input tracking; score card by community members; scorecard by health workers; interface meeting and action plan implementation and progress monitoring. This process is illustrated in Figure 1 below and further elaborated in the sections that follow.

Figure 1: The Steps involved in the Community Scorecard Exercise



2.1 Preparation

The kick-off activities involved introducing the CSC approach to the district and sub-county officials through meetings. The introductory meetings served to orient the participants on the CSC methodology as most of the officials were encountering it for the first time. It also served to get political support of the leaders towards this process. This was followed by identification, selection and training of Trainers of Trainers (ToTs). The ToTs trained the community monitors who then carried out community sensitization meetings on health rights and responsibilities, advocacy for health rights, health care service standards,

2.1.1 RWANU Indicators that were scored against

Broad thematic areas on nutrition, maternal and child health, water and sanitation were identified for alignment with the RWANU Strategic Objective 2. It was also emphasised that health workers during scoring need to use the quantitative HMIS indicators to justify their scores.

i. *Children and mothers having three meals a day*

ii. *Knowledge on the balanced diet*

iii. *Women attending all the 4 ANC visits*

iv. *Women returning for check up after 6 weeks from delivery*

v. *Children immunized against measles*

vi. *Homes with and use a latrine*

vii. *People practicing the 5 critical moments of hand-washing with water and ash*

2.1.2 Community generated indicators

The following indicators were generated at community level in focus group discussions for women, men and health workers.

i. *Availability of ambulance services*

ii. *Availability of water source for the facility*

iii. *Latrine for health workers*

iv. *Availability of H/CIIs at Parish level (Distance from the facility)*

v. *Adequacy of security/availability of fence*

vi. *Availability of Staff at health units*

vii. *Availability of infrastructure (staff accommodation, maternity ward, general wards*

viii. Connection to the district electricity grid

2.1.3 Scoring criteria used by community members

The scoring criteria below was explained to participants prior to the assessment exercises.

Figure 2: ***Scoring criteria***

Symbol Used	Meaning
✓	Good
X	Bad
XX	Very Bad

A community monitor taking notes during the youth focus group discussion at Lotome HC III in Napak district

2.2 Input Tracking

The assessment of health service delivery started with an input tracking exercise. Inputs are the resources that are allocated to a health facility to ensure effective and efficient provision of health

services. Community members and health workers carried out an inventory of available inputs at the respective health facilities. The input tracking exercise started with developing an input tracking matrix which has four key components i.e. identifying the major inputs, the entitlement as per MoH standards, the actual provision and the remarks on the status quo. In the second step, community members and health workers assessed the situation of healthcare inputs by filling the input tracking matrix (See the example in Table 2 below).

Table 2: An extract from the Input Tracking Exercise at Lotome HC III, Napak district

NO	INDICATOR	EXPECTED	ACTUAL	REMARKS
1	Pit latrines for patients	2	0	• The available one cracked and full
2	General ward	1	0	• Under-construction
3	Placenta pit	1	0	• Constructed but water logged
4	Gate man's house	1	0	• None in place
5	Bathroom for the patients	1	0	• Not completed • Poorly drained
6	Staff accommodation	16 rooms	10	• 6 reside in improvised rooms • 2 reside in dilapidated rooms
7	Water source	1	1	• Piped water connected
8	Availability of health workers	19	16	• One clinical officer required • *Askari* (security guard) and cleaners not on payroll
8	ANC services	154 per month	10 per month	• Mobile communities • No motivation for food by WFP
9	Children completing immunisation	132 per month	30 completing the schedule per month	• No motivation for food by WFP
10	Deliveries in the unit	148/month	25/month	• TBA very active • No food motivation
11	Availability of tracer drugs	8 tracer medicines	Available	• Stock out experienced when the WFP gives food
12	Ambulance	1	0	• Occasionally use *Matany Hospital ambulance*
13	Motorcycle	2	1	• The one present is in poor state of repair

14	Bicycle	1	1	• Recently acquired.

The input tracking exercise involved comparing the available inputs with the expected inputs as per the health service standards. Some of the inputs considered across the six facilities include staff, equipment, water source, staff accommodation, fence, and ambulance.

2.3 Score Card by Community Members and Health Workers

The CSC process involved identifying key healthcare delivery issues/indicators, agreeing on the scoring scale and the eventual scoring of healthcare delivery indicators based on the perceptions of group members. The CSC exercise for women, men and health workers generally followed the same process, although there were minor differences in the indicators identified by each of the groups.

The scoring exercise was followed by the development of action plans by the community members and health workers.

2.4 The Interface Meetings

Upon conclusion of the community and health workers scorecards, interface meetings were organised involving health users, community monitors, service providers and local government officials. Presenters nominated by community monitors made presentations on the findings and recommendations of the community and health facility workers to the participants present at these interface meetings. The main purpose of the interface meeting was to share the Scores generated by service users and service providers to ensure that feedback from the community is taken into account, and that concrete measures are taken to improve health services and/or maintain good practices.

At the end of the interface meetings, joint actions were drawn by the participants to address the identified health service delivery concerns as can be seen in the excerpt for Loputuk HC II in the table below.

***Table 3*: Action Plan For Loputuk HCII (Dated: 19th March 2014)**

No.	What can we do to make things better?	Who will do this?	When will they do this?	Action proposed
1.	Fence staff quarters	Office of the sub-county Development partners	From next financial year July 2014 – June 2015	Community will get sand and LC 1 to mobilize Lobby by HUMCs from NGOs, S/C and district

		DHO's office		
2.	Driver for Ambulance	DHO Diocese	Recruit next month	Driver should be based at Loputuk
3.	Increase number of staff	DHO Diocese Development Partners (NGOs)	Next financial year	Hold meeting with DHO to discuss possible solutions
4.	Accommodation	NUSAF Development partners	Next financial year	Identify land NUSAF to complete the existing house Community members to collect sand for construction

VHT peer leaders (standing) in Lotirir parish. They were trained in the CSC methodology and were the facilitators of the Focus Group Discussions for both the community and health workers.

SECTION THREE
FINDINGS OF THE SCORE CARD PROCESS

3.0 Introduction

The status of health service delivery was assessed by tracking the availability of adequate health inputs and assessing the availability and quality of services by the three groups of women, men and health workers. The rating of different variables relating to health service delivery was based on a 3-level scale (Good; Bad; Very Bad).

The findings are aggregated by sub-county and district. The pilot was conducted in 2 sub-counties of Napak district and 1 sub-county in Moroto district. The tables below show the scores for each of the indicators. An analysis of these scores is provided in the subsequent sub-sections

3.1 Aggregated community score card scores

3.1.1 Sub-county aggregated scores and comparison – Napak district

***Table 4*: Sub-county scores**

No.	Indicator	Score	
		Ngoleriet	Lotome
1	Children and mothers having three meals a day	Very Bad	Very bad
2	Knowledge on the balanced diet (at least 3 colours on a plate)	Bad	Bad
3	Women attending all the 4 ANC	Bad	Bad
4	Women returning for check-up after 6 weeks	Bad	Bad
5	Children immunised against measles	Good	Good
6	Homes having and using latrines	Very bad	Bad
7	Hand washing at 5 critical moments with ash	Bad	Bad
8	Availability of infrastructure (staff accommodation, maternity ward, general wards, pit latrine, water source)	Bad	Bad
9	Availability of Ambulance	Very Bad	Very Bad

3.1.2 District aggregated scores and comparison

Table 5: District scores

No.	Indicator / Area of Concern	Score by District	
		Napak	Moroto
1	Children and mothers having three meals a day	Bad	Very Bad
2	Knowledge on the balanced diet (at least 3 colours on a plate)	Bad	Bad
3	Women attending all the 4 ANC	Bad	Good
4	Women returning for check-up after 6 weeks	Bad	Bad
5	Children immunised against measles	Good	Good
6	Homes having and using latrines	Bad	Very Bad
7	Hand washing at 5 critical moments with ash	Bad	Bad
8	Availability of ambulance services	Very Bad	Very Bad
9	Availability of infrastructure (staff accommodation, maternity ward, general wards, pit latrine, water source)	Very Bad	Bad
10	Adequacy of security/availability of fence	Not Scored	Very Bad
11	Availability of Staff	Not Scored	Very Bad

3.2 Remarks and suggestions against RWANU project indicators

3.2.1 Children and mothers having three meals a day

The National Food and Nutritional Strategy (2005) states that the, "*Responsibility for enabling individuals to attain food security ultimately lies with the government at national and local levels. It has the duty to establish the conditions and institutions necessary to enable citizens to access the basic requirements of nutrition security—sufficient quantities of food necessary for a balanced diet; the means to acquire this food, whether through cash incomes or access to productive resources; education in order to provide proper nutritional care to one's dependents and oneself; clean water and adequate sanitation; and effective health services*".

Although the government and development partners have devised initiatives to increase levels of food production in the region these have not yielded much success given the perceptions reflected in the score cards. Overall, the indicator received a very bad rating across the sub-counties and the two districts.

The contributing factors to this very poor rating are prolonged dry seasons leading to poor harvests, food insecurity and financial constraints on the part of the communities.

The average meal frequency in a day was reported to be 1 by all focus groups.

Health workers' Focus group discussion in Lotome HC III – Napak District

3.2.2 Knowledge on the balanced diet

While the majority of the participants of the community score card proved to possess knowledge of a balanced diet through identification of a variety of recommended food types, they also revealed that most do not value this knowledge. This is also compounded by the food insecurity as mentioned in above. This was ranked "bad" in both districts.

3.2.3 Women attending all the 4 ANC visits

The primary goal of antenatal care is for pregnant women to get early access to care and treatment within the health care system in order to identify potential risks before they become too great and manage any complications as early as possible. At least four antenatal visits are recommended.

This indicator received "Bad" and "Good" ratings in Napak and Moroto districts respectively.

The results indicated inadequate numbers of staff, in this case midwives that are a critical if the number of pregnant women attending ANC is to increase. Other factors affecting ANC attendance are the very long distances travelled by mothers to reach the health centre; the women also noted that increased numbers of active Traditional Birth Attendants in comparison to health workers and the over-dependence on food rations for Maternal Child Health and Nutrition that are distributed at particular times - although this encourages mothers to attend, it remains the only motivation for some expectant mothers to attend ANC.

On a positive note, the health workers reported an increase in outreach activities at community level which has taken some of these services to the community. Some mothers therefore receive check-ups during the outreaches.

3.2.4 Women returning for check up after 6 weeks from delivery

Postnatal Care is the care of a mother and the baby immediately after childbirth. The period following the birth of the child is called the 'post natal period'. The Ministry of Health recommends that after birth, the mother and her baby should be checked by a skilled health worker at 6 hours, 6 days and six weeks. Integrated postnatal services are essential for women and their newborns.

This indicator received an overall "bad" rating. This was mainly attributed to communities' low understanding and appreciation of postnatal care. It was also noted that mothers who deliver at home and in the hands of TBAs are most likely to shun PNC. The focus groups further stressed that mothers attached such check-ups to motivators provided at the health centres.

3.2.5 Children immunized against measles

Immunization of children against the eight vaccine-preventable diseases (tuberculosis, diphtheria, whooping cough, tetanus, hepatitis B, Haemophilus influenzae, polio, and measles) is crucial to reducing infant and child mortality.

RWANU Strategic Objective 2 seeks to improve the measles immunisation coverage in its areas of operation

Results from the CSC pilot areas revealed that the community members were largely aware of the 8 killer diseases and were also aware of the immunisation schedule. This knowledge and appreciation of the immunisation process has increased measles immunisation coverage with both districts getting an overall rating of "good".

3.2.6 Homes with and use a latrine

Excreta disposal is one of the components of sanitation which include: Food hygiene, sanitation, education, occupational health, personal hygiene, vector and vermin control, waste water disposal, water management, good housing, institutional sanitation, air pollution, and refuse management. There is a high incidence of diseases caused by poor sanitary conditions especially worm infestation and diarrhoeal diseases.

Karamoja sub-region is prone to this disease because of its low latrine coverage and lack of safe drinking water. Up to 64.3%[3] of the households in the Karamoja region combined lacked latrines. The problem of latrines ownership and usage in Karamoja is associated with cultural beliefs.

The score card results indicated that communities in Napak district had more and better use of latrines compared to Moroto district with “bad” and “very bad” ratings respectively. The community members attributed this to a lack of construction materials and poor soil texture that fails construction of latrines.

[3]UNICEF(2013). Nutrition and Food Security Assessment in Karamoja

There is noted poor attitude and perceptions towards usage of latrines with a considerable number of score card participants mentioning cultural myths as affecting usage. This is further compounded by poor non-exemplary leadership that is manifested by some community leaders who do not have latrines but are mandated to encourage others to construct them.

3.2.7 People practicing the 5 critical moments of hand-washing with water and ash

Observance and promotion of basic hygiene is fundamental to good public health. Hand washing with a detergent (soap, ash) ensures that the transmission of germs that cause disease is restricted.

Both districts received a "bad" rating for this indicator. The community attributed the poor hand-washing behavior to a lack of water. However they also suggested increased sensitization on benefits of hand-washing. The issue of hand-washing and latrine usage is a challenge of behavioural change. Turning hand washing with soap/ash into a habit is said to "save more lives than any single vaccine or medical intervention, cutting deaths from diarrhoea by almost half and deaths from acute respiratory infections by one-quarter". There should be increased community sensitization on 'critical moments' for hand washing: after defecating, cleaning a child's bottom, and before preparing food and eating.

3.3 Scores on community generated indicators

The facilitators of the community score card encouraged the community members to raise other issues of concern regarding health service delivery beyond the standardized RWANU indicators. These are the community generated indicators and an analysis of each of the indicators is provided in the sub-sections below.

3.3.1 Staffing Levels and Staff Performance

Human Resources for Health are one of the critical inputs for effective healthcare delivery. According to MoH guidelines, the staffing norm is 49 staff members for HC IV, 19 for HC III and nine for HC II. The MoH is committed to a progressive increase in staffing levels, and set a target of 70% for public health facilities in FY 2012/13.

However glaring Human Resources for Health affect the health sector with staff retention being a major factor as discovered in Moroto district where the indicator received a "very bad" rating. It was observed that there was shortage of staff to handle capacity of increasing responsibilities of the few staff and number of people in catchment population.

At Lotome HCIII, where 16 of the 19 staff were present, the health workers expressed a need for a clinical officer to deal with the growing workload. They also complained that some stuff were not on the pay-roll – these included the security guard and the porters. This has a negative effect on performance.

Ironically, the other two health facilities in Napak did not raise the issue of staffing. According to the Annual Health Sector Performance Report (2012), Napak is one of the new districts that do not have a substantively appointed staff in the District Health Office making the districts technically non-functional[4]. Napak was also ranked last in the District League table at 35.6% staffing levels. This creates another concern around community knowledge on expectations and standards of the health system and calls for intensified community awareness and advocacy.

3.3.2 Healthcare Infrastructure

Health infrastructure is critical to ensuring access to quality services if it is functional, efficient, safe, environmentally friendly and sustainable including laboratories, wards, fences, water points, latrines and other waste management facilities. The community members and health workers therefore noted the following concerns in this area.

[4] MoH (2012). Annual Health Sector Performance Report - 2011-12

3.3.2.1 Availability of ambulance

Effective referral requires a functional ambulance system comprised of motor vehicles and tricycles. Although the MoH targets to ensure that all hospitals and HC IVs have functional ambulances by 2014/15.

The scorecard revealed that in Napak district only one ambulance attached to *St. Kizito Hospital Matany Referral Hospital* was serving an overwhelming catchment population putting to risk patients with emergency cases who would be left out in case this ambulance is far-away on another mission.

At Loputuk HCIII in Moroto district, patients reported that if an emergency occurs during night hours the available ambulance may not be of help as the ambulance driver does not reside at the health facility.

This indicator received a "very bad" rating in both districts and community members called on the district leadership to provide functional ambulances at all entitled health centres to save patients' lives.

"***We call upon the district to give us an ambulance and a driver. We cannot afford the money needed for transport.....especially if a mother is in labour. This will save lives!***" – A concerned community member in Kangole, Napak district.

3.3.2.2 Availability of Water and Energy (Electricity)

Water is an important input needed for both clinical purposes and general use by clients and health workers. It is therefore a requirement that all health facilities have access to an appropriate water source. The community score card exercise revealed that

Table 6: Availability of Water Source at the Health Facilities

Health facility		Situation March '14	Remarks
Moroto district	Nadunget HCIII	Good	No nearby borehole Harvested rain water is seasonal
	Lotirir HC II	Very Bad	No water source available at the health centre. Discourages health workers and patients from accessing the health centre.
	Loputuk HC II	Bad	Available water source – bore hole Need extra water sources to cater for increasing number of patients
Napak district	Ngoloriet HCIII	Bad	
	Lotome HC III	Good	Piped water powered by solar but is not available all the time
	Kangole HC II	Bad	No reliable source of water supply

All the health facilities surveyed were not connected to the district electricity grid while some do not have alternative reliable energy sources such as solar. The table below shows scores from each of the facilities.

Table 7: Availability of Energy Source at the Health Facilities

Health facility		Situation March '14	Remarks
Moroto district	Nadunget HCIII	Bad	Most health centers have solar electricity. This is sometimes unreliable. District electricity grid lines go through some of the health facilities which are not connected. "We wonder why this is allowed to happen" – community member Need for health centers to be connected to the district electricity grid so that solar is used as a backup source
	Lotirir HC II	Bad	
	Loputuk HC II	Bad	
Napak district	Ngoloriet HCIII	Bad	
	Lotome HC III	Bad	
	Kangole HC II	Bad	

3.3.2.3 Staff and Patient Latrines

The results below are triangulated from the results of the various focus group discussions at each of the health facilities.

In Loputuk, the community complained that there were no specific latrines for patients at health unit, and patients had to identify places around the health centre to ease themselves – some use the area next to the river. The staff latrines are not accessible to the community. The table below provides scores and remarks from other facilities.

Table 8: Availability and Status of latrines at the Health Facilities

Health facility		Situation March '14	Remarks
Moroto district	Nadunget HCIII	Good	Latrines are available. In good condition
	Lotirir HC II	Good	Latrines Available. In good condition.
	Loputuk HC II	Bad	Patients cannot use staff latrines Patients have to go to use area by the river to ease themselves
Napa-	Ngoloriet HCIII	Bad	Shared larine – Patients and health workers should have separate latrines

	Lotome HC III	Very Bad	One functional latrine but in a very poor condition. Needs Emptying urgently. The newly constructed latrine has never been opened.
	Kangole HC II	Bad	There is one but not enough for staff they are seen sharing with patients Needs emptying urgently 2 out of the expected 6 latrines are available

3.3.2.4 Staff Accommodation

Timely availability of staff is partly dependent on whether they reside at or near the health facility.

While accommodation facilities were noted as insufficient, it was also reported that available housing facilities are not optimally used at some of the health facilities. For example, despite the availability of accommodation facilities at Lotirir HC II, community members reported that the health worker is accommodated at the "Modern Village" due to security concerns. At Loputuk HCIII, some of the health workers travel from Moroto town to the health centre every day. This situation compromises on service delivery as it may exacerbate late reporting, early departure and or even nonattendance of work.

3.3.2.5 Fence

The seclusion of health facilities ensures safety of people and property. The community therefore focused on the status of fencing at their respective health facilities. This concern was raised by the communities in Loputuk and Lotirir. Loputuk HCIII is fenced. However the staff quarters are not well fenced and misuse of facility land was reported with community members grazing livestock within the facility compound. At Lotirir, the situation is worse as the whole facility is not fenced at all. This explains why the health workers do not feel secure to stay there even with accommodation present.

3.3.3 Availability of H/CIIs at Parish level (Distance from the facility)

According to Uganda's health system, there should be a health centre II at parish level. However, it was reported that most parishes in both Napak and Moroto lacked HCIIs.

A case in point is Lotirir HC II which is located in Nadunget Sub County in Moroto district. It was founded by the Church of Uganda and is a PNFP. It serves two parishes of Acerer and Lotirir with has a staffing level of 2 health workers. the health centre does not take adequately cater for residents of Acerer and most complaints raised were in relation to mothers who travel long distances from

Acerer to Lotirir for check-ups. Most mothers are discouraged by the long distance and end up delivering at home under unskilled attendants.

SECTION FOUR
CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This CSC pilot application was able to build capacity in the CSC methodology for RWANU staff and community structures and this should be in-built in design for future applications. The CSC provided a platform to citizens to be heard and evaluate service delivery - a first for most of the communities that participated. The survey brought together service providers and users on a round table to assess performance, and develop a way forward.

There is need to strengthen both aspects of accountability through increased flow and access to user friendly information to citizens on entitlements; encourage vibrant participation of all stakeholders (community members (citizens), politicians, administrators, etc); empowering the citizens to demand accountability from right holders, popularising and harmonising current initiatives such as the patients' charter, *barazas*, and use of Community Score card for performance assessment within the context of local government.

Recommendations

Drawing from the CSC findings the following recommendations are made:

To the Local government and Development Partners

There should be deliberate attempts to refocus and review operations of VHTs to maximise their full potential for improvement of health services

Local leaders need to take the lead in health issues in the communities. Exemplary leadership should be exhibited at all levels; lower-level local councillors and other leaders at the community level should embrace the development agenda if others are to follow-suit.

District and stakeholders to break the dependency and monetisation of activities at community level - the control of community dependencies on hand-outs is necessary for ownership of services. Though these initiatives increase uptake and utilisation of services, they create communities that do not appreciate the importance of the service being provided.

The district leadership should build on communities' will and commitment to strengthen the development agenda. The community scorecard process revealed a willingness on the community part to assist in improving health service delivery. The onus is now on the leadership to leverage this resource.

There is a need to strengthen the role of oversight structures such as the DHT and HUMC to address service delivery concerns within their areas of jurisdiction through skills enhancement, logistical facilitation and the adoption of results based management. The actions of these structures should focus on ensuring the development and adherence to the staff duty roster, time management by staff, positive health worker-client relations, non-involvement of support staff in prescribing and dispensing drugs, and utilisation of existing accommodation facilities.

There is a need to promote more dialogue on patients' rights and responsibilities as well as the responsibilities of health workers. Health workers need to be reminded about their professional ethics, including how they ought to relate with patients. Dissemination and continuous dialogue on the patients' charter should be emphasised.

District local governments and development partners should expand and or improve on the existing health centre infrastructure and facilities such as in-patient and maternity wards, water sources, ambulances, and staff houses. These will ensure the functionality of all health facilities and the effective delivery of quality and timely health services. Development of physical infrastructural facilities such as in-patient wards should give due consideration to gender issues.

To Health Centre Staff and HUMC and Community Members

Staff and members of HUMC should continue to educate health users about the services offered at the different levels of health facilities to avoid disappointments resulting from unrealistic expectations. Health facilities should display charts with information about the services provided at the facility in local language. In addition, there is a need to strengthen referrals to ensure that a continuum of care is available along the various tiers of the health system.

Health users need to take a keen interest in monitoring healthcare delivery and giving and receiving feedback from health workers and the local governments.

The community needs to know which services are offered at the different levels of health facilities to avoid disappointments resulting from high expectations and falsely accusing health workers of denying them services.

END

HONEY MARKET ASSESSMENT REPORT FOR RWANU PROJECT IN SOUTHERN KARAMOJA

COMPILED BY:

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MARKETING SUPPORT OFFICER, RWANU

LIST OF ACRONYMS

DCO	District Commercial Officer
DDG	Danish Deming Group
FFP	Food for Peace
FGD	Focus Group Discussion
JICHAWA	Jie Community Animal Health Workers Association
KGs	Kilograms
MT	Metric tones
NAADS	National Agricultural Advisory Services
NGOs	Non – governmental Organizations
NUSAF	Northern Uganda Social Action Fund
PHH	Post-Harvest Handling
RWANU	Resiliency through Wealth, Agriculture and Nutrition
UBOS	Uganda Bureau of statistics
UNBS	Uganda National Bureau of Standards
WHH	Welt Hunger Hilfe

1.0. INTRODUCTION

ACDI/VOCA and sub-recipients Concern Worldwide (Concern) and Welt Hunger Hilfe (WHH) designed the Resiliency through Wealth, Agriculture and Nutrition in Karamoja (RWANU) program. This is in response to Food for Peace's (FFP) overall strategic objective for the Title II program in Uganda: *reduce food insecurity among chronically food insecure households.* One of the primary objectives of this project is to improve availability and access to food through: Improved smallholder farm management practices, improved smallholder livestock management practices and increased linkages to markets. In this regard, RWANU commissioned a honey marketing assessment into order to design better strategies of marketing honey and honey products.

In this study, we did the following:

i. Conducted a gross margin analysis for honey
ii. Mapped out the value chain for honey for South Karamoja
iii. Identified key partners, potential buyers/ their expectation of future supply, demand, price and willingness to trade with producers
iv. Obtained the quality standards of honey and determined the type of honey most demanded.
v. Determined the usual means of transport, cost of transportation to the nearest market, and terms of payment for the honey
vi. Determine restrictions on domestic trade of honey
vii. Price trend for honey in Southern Karamoja over the past 3 years
viii. Recommendations

1.2. Methodology adopted for the honey marketing assessment

The study focused on the production, value addition, processing and marketing of honey in Southern Karamoja. The marketing chain includes; input supply chain, honey quantities and quality attributes, the products, price and price trends, the placement/ distribution chain including wholesalers, retailers, promotion and other marketing aspects were also assessed. The study team also analyzed gross margin, the core market, key value chain actors, value chain influencer's i.e. support functions and the rules that enhance or hinder access to markets. Both primary and secondary data were collected. Primary data was collected from key informants (DCO-Nakapiripirit, DCO-Amudat, Oxfam/JICAHWA, key RWANU staff and, Golden bees Ltd among others. We held seven (07) FGDs, interviewed farmers/producers, buyers/processors and also used observation. The study was carried out in five sub-counties of Karita (Amudat District), Namalu and Moruita (Nakapiripirit District) and Lotome and Iriri (Napak District) out of 16 sub-counties within the RWANU operational area. We also visited Kacheri sub-county in Kotido district. Secondary data about the apiary sector in Karamoja and Uganda as a whole was also reviewed for the purpose of convergence of evidence.

1.3. Definition of concept and parameters

This section defines the key parameters and concepts used in this report.

Cost of farm inputs: Inputs are valued at cost price basis. Even if the farmer uses his/her own inputs or inputs from previous seasons, inputs are computed in a similar manner.

Yield: This is a measure of total output obtained per unit hive area. For consistency output is measured in standard unit of kilogram (kg).

Gross Income: This has been calculated by multiplying the output by the price.

Gross margin: This measure gives the relative profitability of enterprises. In simple terms, gross margin refers to the total income derived from an enterprise less the variable costs incurred in the enterprise.

Value chain actors: Are the people who directly deal with production, processing, packaging, trading and distribution etc of honey. Usually they own the commodity/product for a period of time as it travels along the chain.

Value chain support functions, rules and regulations: These are people, organizations and institutions that are responsible for setting up and managing the honey business and regulatory framework, policies, infrastructures, etc at the local, national and international levels.

2.0. GROSS MARGIN ANALYSIS

The computation of gross margins for the honey value chains was done for both subsistence and commercial honey producers.

2.1. Gross Margin Analysis for honey

Regarding the apiary enterprise, gross margin analysis has been derived based on 20 hives that are considered as the most economic and manageable threshold for smallholder farmers. Findings from the study, shows that the apiary commercial farmer (using KTB hives)earned a higher gross margin compared to the subsistence farmer (using local hives) in spite of incurring more costs of production especially input costs. This was attributed to the fact that the commercial farmers (using KTB hives) were compensated by better honey prices as a result of proper harvesting and handling practices.

Table showing: Gross Margin Analysis for honey sector.

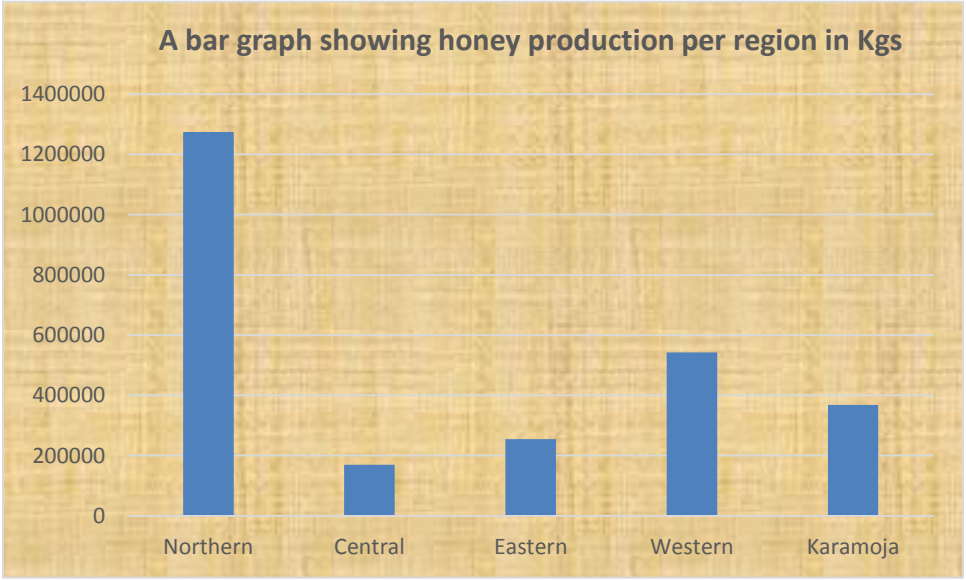
Key Variable	Commercial farmers (20 KTB)	Subsistence farmers (20 Local hives)	Incremental
TOTAL COSTS	320,000	176,000	144,000
YIELD (HIVE)	10	6	4
FARM GATE PRICES (KGS)	5,000	4,000	1,000
GROSS INCOME (SHS)	1,000,000	480,000	520,000
GROSS MARGINS (SHS)	680,000	304,000	376,000
NET INCOME (SHS)	625,000	284,000	341,000
TOTAL MATERIAL INPUT	55,000	20,000	(35,000)

Source: RWANU honey market assessment, February, 2013

3.0 APIARY SUB-SECTOR IN KARAMOJA

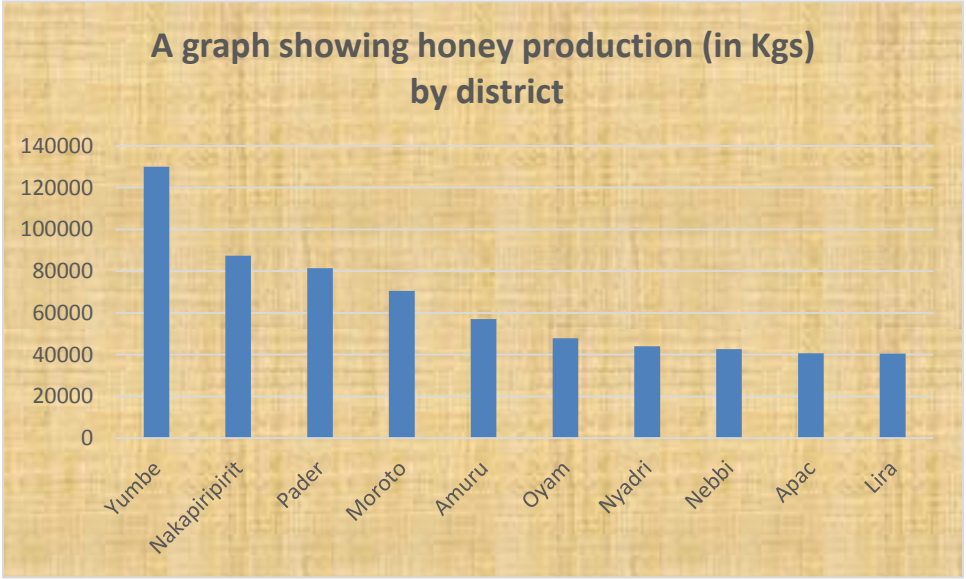
Apiculture is the deliberate rearing of honey bees for production of honey and other bee Products. Apiculture in Karamoja has a lot of untapped potential and it's characterized by low productivity, use of local hives, poor apicultural practices, and poor post harvesting practices among others. The sector is growing; government programs like NAADS and NUSAF are investing in the sector. Besides, some NGOs (such as Danish Refugee Council /DDG, Oxfam, JICHAWA) are also focusing their efforts in apiculture as an alternative means of livelihood given the erratic nature of rains in Karamoja. Oxfam/JICHAWA for example processed about 2 MTs of honey in 2012/2013. In 2008, a comprehensive production survey was carried out by UBOS where annual national production was estimated to have been 2,609.3 MT per annum. In terms of region, Northern is estimated to have the highest production of honey with 1,274,600 kgs. The Central region has the least estimate of 169,300 kgs per annum. Production for Eastern region is estimated to be 254,740 kg while the estimate for Western region is 542,280 kg. Karamoja region is estimated to be producing 368,380 kg, according to the national livestock census, 2008.

A bar graph showing honey production (kgs) by region



Source: National livestock census 2008, UBOS

In terms of districts, the survey estimates Yumbe to have had the highest production figure of 129,950 kg. It is followed by Nakapiripirit (87,920 kg), Pader (81,320 kg), Moroto (70,560 kg), Amuru (57,080 kg), Oyam (47,840 kg), Nyadri (43,950 k g), Nebbi (42,620 kg), Apac (40,590 kg), and Lira (40,480 kg)



Source: National livestock census 2008, UBOS

4.0. CORE MARKET ANALYSIS

4.1 Honey Supply

Much as honey production at household levels is low; most of the output actually ends up in the markets. Generally, there is local market for the honey within communities and local traders. Farmers' investment in the sector in term of inputs is very low. This affects quality of the honey supplied and yet most honey end users in urban areas are sensitive in terms of products they consume. This results into low prices for honey which is a dis incentive to production. The money from the honey sales complements farmer's income from crop and livestock sales.

4.2 Honey Demand

Local buyers/ traders

Buyers within Karamoja include: processors/packers like JICHAWA, CARITAS, Nali Sophia (a trader within Singila Market, Moroto district) who has a shop that sells different products including honey. She purchases honey from out growers (the Tepeth of Mt. Moroto) and sells to different buyers including local hotels (such as Mt. Moroto) and visitors who wish to have honey. The tepeth bring the honey to her shop in a local wooden container called 'Eburi' usually used for storage of cow ghee that carries about 20Kgs. Sophia buys each 'Eburi' of honey at Ush 50,000/= to 80,000/= depending on the quantities. Her selling price per kg is between Ush 8,000 and 10,000.

Market for honey is available, even locally (hotels and other local buyers). Pure processed and packaged honey is purchased for between12, 000/= to 16,000/= per kg and most processors/packers have a fixed price for purchase of honey. Combed quality honey is purchased at 4,000/= per kg. For impure liquid honey, there is no fixed price – buyers and sellers haggle over price though the average price is 5,000/= per kg.

Other buyers within Karamoja, include local supermarkets within Karamoja, Jolmar shopping centre and, the Catholic shop in Moroto district.

National buyers

The largest market share for honey in Uganda is held by Bee Natural Uganda Ltd. By April 2013, they were handling 80MT of honey per year; however, this is only 25% of what their market demands. Potential buyers outside Karamoja include: Golden Bees Ltd, Bee house Ltd, Bee Natural Uganda. Golden Bees Ltd mentioned that they handle 2 MT of honey per month however; their target is 3

MT per month. They hope they can get 12 MT per year from Karamoja. However, projections for RWANU in 2014 are only 4.5MT of honey (produced from 550 KTB Hives).

Regional traders

For producers/farmers from Morita and Karita sub-county, the buyers/traders come from Kenya (Kodish, Konyawo, Kacheliba, and Macuriat) and purchase honey from the weekly markets in Karita and Amudat. However, they couldn't be traced since the farmers neither knew their names nor contacts.

Marketing associations

Marketing associations are meant to facilitate bulking, collective marketing, market linkage and market information and intelligence. Besides, marketing associations can make cheap to access technical support to the associations to enhance their capacity. However, none of the persons interviewed belonged to any honey marketing association hence most of them were selling their honey individually with its associated challenges like low prices since the quantities are insignificant to attract large buyers.

4.3 Challenges highlighted

- Low production due to poor technologies
- Lack of knowledge on modern apiary practices hence the demand cannot effectively be met.
- Quality of honey produced is not good. The main cause is the poor harvesting methods and, adulteration of honey by farmers.

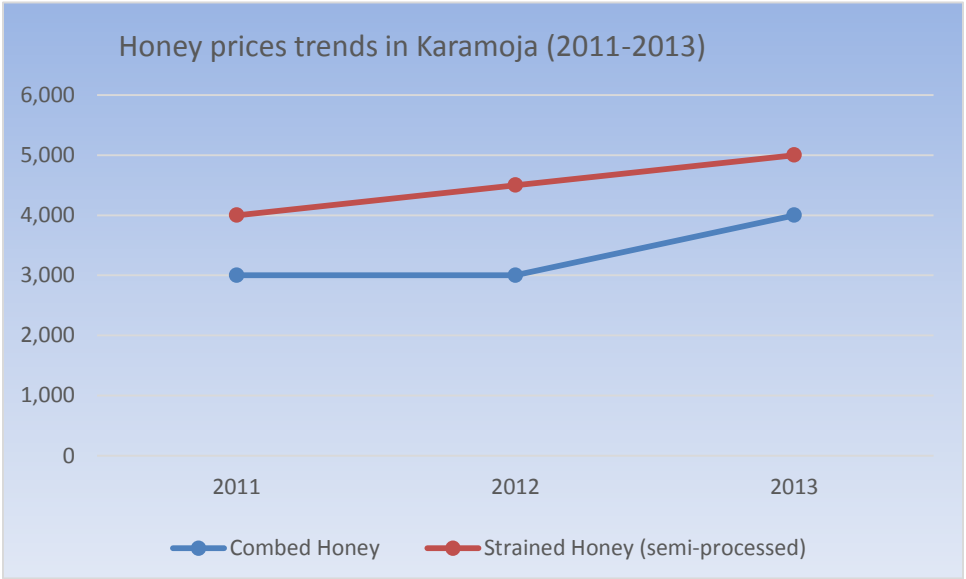
These challenges can be addressed by training farmers on modern apiary practices including harvesting and handling. Also, encouraging more farmers to go commercial in the production of honey since this will indirectly stir them up to improve on the quality demanded by commercial honey buyers.

5.0. MARKET TREND ANALYSIS

Pricing

Combed quality honey was being purchased by JICAHWA in Kaabong and Kotido districts at a price of Ush 4,000/= per kg - cash on delivery. Processors preferred combed honey since it provided them an opportunity to control quality during processing. After processing, processors package and brand their honey and, sell it at a retail price of Ush 12,000 to 16,000 per kg. Most producers locally process their honey using rudimentary technology and thus priced their honey averagely between Ush 4,000/= to 6,000/= per kg. In light of this, the sale of combed honey at Ush 4,000/= per kg is deemed fair by some producers since it saves them the cost of processing.

A graph showing honey prices (Ush per kg) in Karamoja (2011-2013)



Source: RWANU honey market assessment, February, 2013

Placement/Distribution

The honey purchased by processors/packers is often transported in vehicles /motorcycles. Producers /packers also distribute their products mostly to supermarkets using the same transport means. Occasionally a few local super markets and individuals collect honey from the processors/packers. Local farmers transport honey to the local weekly markets like Karita, Namalu and urban centres like Amudat T/c, Nakapiripirit T/c, and Moroto Municipality mainly on foot and bicycles and rarely use motorcycles and vehicles for transportation.

Product

In Karamoja, the major apiary product is honey. Beeswax was only processed minimally by Oxfam/JICHAWA, minimum quantities of wine are processes mainly in Morita and Karita.

Promotion

As a strategy to increase sales and revenue, processors/packers like JICHAWA, CARITAS and Global Bees Ltd, brand their products in the name of Karamoja organic honey, Karamoja savannah honey and, Manyatta honey respectively. This helps them attract consumers especially tourists and, consumers of organic products in urban populations. Branding is important for expansion of Karamoja honey products into the national market. JICHAWA also participated in various trade fairs and exhibitions like the world food day and, Honey week. Karamoja organic honey was rated 2nd in the country during honey week in Kampala according to Dr. Akumu Poncianah, Programme Coordinator JICHAWA.

6.0. VALUE CHAIN ANALYSIS

The main actors within the honey value chain are producers/farmers, traders/middlemen, processors/packers/wholesalers, retailers and finally the consumers. The farmers sell comb honey or strained honey through the following channels:

a) Directly to consumers in either urban centers, weekly markets or, NGO staff.
b) Sell to processors and packers who in turn wholesale to super markets and groceries within Karamoja.
c) Sell to traders who then sell to processors/packers or to the consumers.

Producers/farmers

The small holder farmers in Karamoja mainly use local beehives and production is characterized by low output in spite of the huge potential in honey production. On realizing the huge potential in the apiary sector, some NGOs have invested their resources in improving production by imparting skills on modern methods of production though this is still on a small scale. Most of the honey produced is directly sold to consumers and little to processors/packers.

Traders

Traders purchase from individual producers and weekly markets to sell to the consumers and processors/packers in order to make a profit. Most traders are involved in other businesses other than honey trade. They face difficulty in collecting honey in large volumes because most producers market honey individually. Few traders are native, most come from neighboring sub-regions like Teso and, Bugisu. For producers from Morita and Karita sub-county, the buyers/traders come from Kenya (Kodish, Konyawo, Kacheliba, and Macuriat) and purchase honey from the weekly markets at 160 Ksh per kg approximately Ugx 4,800 per kg. However, the buyers/traders couldn't be traced since the farmers neither knew their names nor contacts. The traders sell directly to both consumers and processors/packers in Kenya.

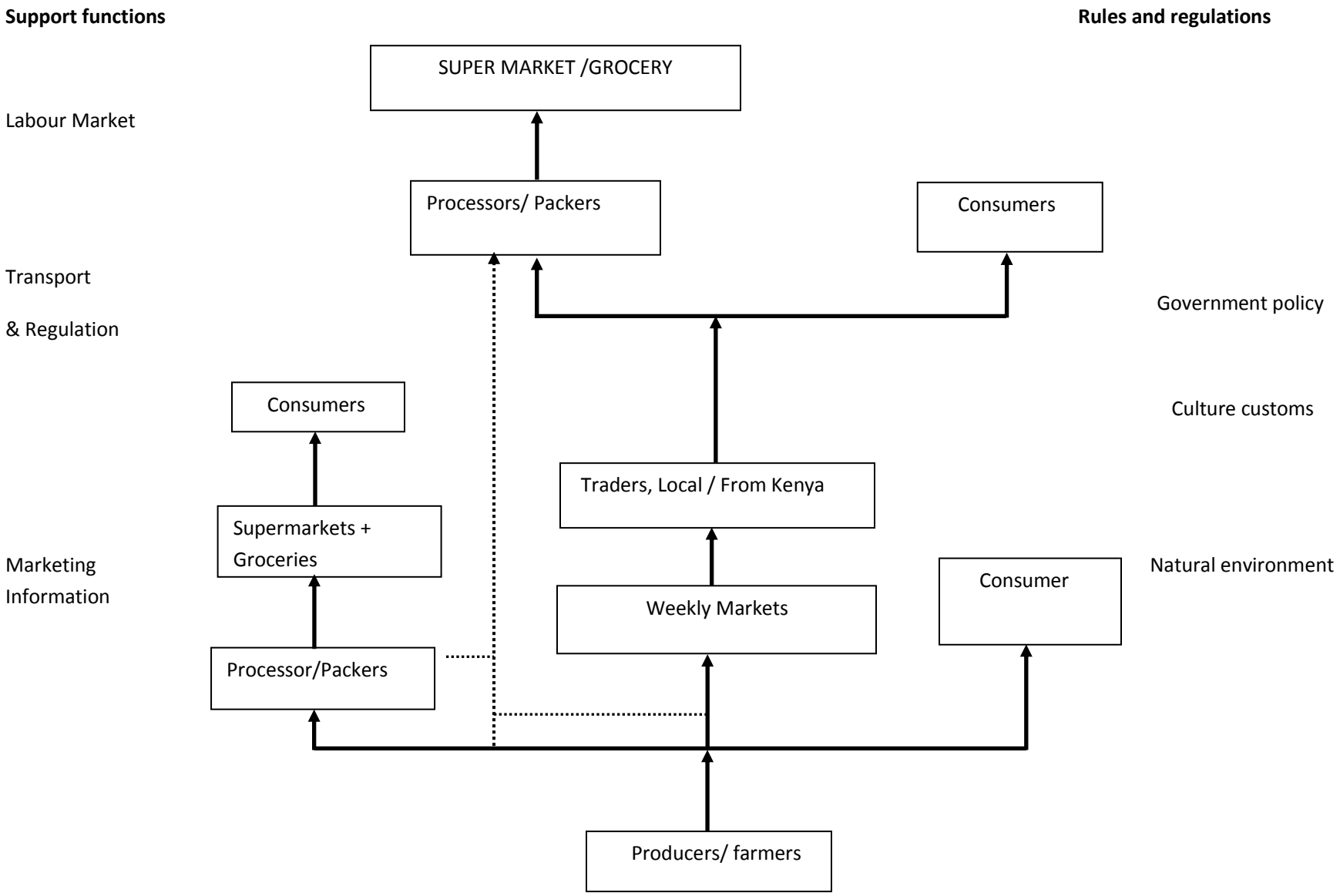
Packers/processors/wholesalers

NGOs like JICHAWA, CARITAS, and DDG are the processors/packers in Karamoja. They mainly rely on their famer supported for supplies, besides individual farmers. Packers/processors don't operate as private companies apart from Golden bees Ltd. They sell the honey to local super markets and groceries. They purchase honey at an average cost of Ush 4,000/= per kg for combed honey and about Ush 8,000/= per kg for processed honey and sell for between 12,000/= to 16,000/=per kg after packaging and branding. However, they process small quantities and are yet to be certified by UNBS.

End markets

Most packers/processors/producers/traders sell their products locally to supermarkets and groceries. Sales to national markets are low and they have been declining. Reasons for this include the documentation, stringent quality requirements, quantities required and, price offered in these markets. According to most packers, local market offers them higher prices and is less demanding in terms of documentation and quality requirements.

HONEY VALUE CHAIN FOR SOUTH KARAMOJA



6.2. Support functions

Transport

Transport accessibility to and from the project areas remains difficult. This limits the ability of producers/farmers and trader to access markets. The roads in Karamoja become more in accessible during the rainy season. Moroto- Mbale road for example at Namalu been broken down since last season's rains. .The table below shows transport cost from Karamoja to the nearest major town like Mbale and Soroti are 50% more than the normal transport cost. This therefore, is a disincentive to traders and transporters.

Table showing travel fare rates between and outside Karamoja

Destination	From	To	No. of Kms	Travel fare (Ush)
	Moroto	Soroti	177 Kms	20,000
	Soroti	Kampala	322 Kms	20,000
	Moroto	Mbale	231 kms	30,000
	Mbale	Kampala	220 Kms	15,000

Source: RWANU marketing assessment, Feb 2014.

Labor market

Almost all the districts in Karamoja don't have quality entomologist both at district and sub-county levels. This has resulted into delivery of poor quality services (production, harvesting, processing and packaging of honey and its products) to apiculture farmers characterized by low output which is of very poor quality.

Market information

The producers/ farmers interviewed had very limited market information and did not carry out market intelligence thus, are in most cases prices takers since they have no basis for negotiating for better prices.

6.3. RULES AND REGULATIONS

a) Government policy and regulation

A number of legislative instruments have already been enacted over the last four decades to enforce quality assurance and control throughout the production, processing and marketing chain of honey. They include the following:

- Uganda National Bureau of Standards Act 1983
- Uganda National Bureau of Standards (Certification) regulations 1995
- Food and Drugs Act 1964
- Public Health Act 1964
- Water Statute 1995 and
- Agricultural Chemicals (Registration and Control) Statute 1993

In addition, Uganda has already developed Standards for honey plus a Code of Practice for apiculture. Standard Operating procedures for apiculture were finalized in 2007. National Quality Control Rules for honey and other bee products were finalized and published in 2006under the then Medium Term Competitiveness Strategy (MTCS) of the Ministry of Finance, Planning and Economic Development (MPED). Annex 2 (at the end of this report), shows the quality standards for honey in Uganda - these have limited Karamoja honey from accessing national and international markets.

b) Culture/customs

A number of cultural practices and norms affect honey market system for example apiculture was a primary role of male though this is slowly eroding with some with female getting engaged. According to FGD in Kacheri sub-county, Kotido district it's a taboo to harvest honey before sorghum is harvested. This results into one harvest in a year hence seasonality and low output which has negative impact on sustainable marketing of honey products.

c) Natural environment

Natural environment in terms of climatic conditions also impact on honey production and forage plants. Besides, heavy strong winds during the dry seasons have effects on the colonies since most migrate hence affecting production.

7.0. RECOMMENDTIONS AND CONCLUSIONS

Marketing committees

Facilitate the formation of marketing associations in RWANU targeted honey producing sub-counties to enhance collective marketing
Train them in business skills (Record keeping, profit and loss, marketing, negotiation among other)

Train marketing associations on advocacy and how to engage government, civil society and private sector for favorable business environment

Facilitate linkage between producers/farmers to buyers/processors and encourage networking between different marketing associations.

Quality enhancement
Train the farmers/producers on modern production techniques more especially including harvesting and PHH.

Encourage farmers/producers to sell combed honey processors since they will be in position to control quality better and, label and package it to satisfy consumer tastes and preferences.

Encourage processors and packers to get certified so they can access larger and better markets both nationally even internationally

Market information

Link marketing committees/district commercial officers to providers of regular market information.

Enhancing market Access
There is need for certification of honey and its products by UNBS so that broader markets outside Karamoja can be accessed. There is also need to engage government and civil society organizations for improvement of infrastructure, especially roads

CONCLUSION

The apiculture sector in Karamoja has a huge potential in transforming the lives of the ordinary Karamojong. Karamoja honey is organic in nature given honey forage plants like acacia the bees feed on are natural and indigenous and medicinal. No wonder Karamoja honey is rated highly nationally.

In spite of all this huge potential, much still needs to be done in order to improve production which is low as result of(low investment in the sector, limited technical skills ,use of poor inputs, poor quality of honey which is associated with crude harvesting methods, poor processing , packaging, and storage of honey).There is also need to enhance market linkages to the national and later international markets, reduce information symmetries and where feasible, improve the road network which is very poor especially during the rainy season.

ANNEX 1: LIST OF SOME POTENTIAL BUYERS OF HONEY FROM SOUTH KARAMOJA.

Name	Location	Quantity demanded	Contact
Golden Bees Ltd	Moroto/Kampala	24 MT	0752 484225/0702 484225
Bee Natural Uganda Ltd	Kampala	240 MT	0414 253844
JICHAWA	Kotido Town	5 MT	0759 042802
Nali Sophia	Moroto		

ANNEX 2: TABLE SHOWING QUALITY PARAMETERS FOR HONEY IN UGANDAN URBAN MARKETS.

Parameter	**Value**
Moisture content	Not more than 20%
Colour	White to pale amber
Sucrose content	Not more that 5%
Fructose and glucose content	Not less than 60%
Sucrose content	Not more that 5%
Water soluble solid contents	Not more than 0.1%

Source: Uganda National Bureau of Standards (2005)

ANNEX 3: QUESTIONNAIRE USED TO CONDUCT THE HONEY MARKETING ASSESSMENT IN SOUTHERN KARAMOJA

Date …….

Name of Respondent…….

Sex of Respondent…….

Type of Business…….

District…….

Sub-County…….

Parish …….

Enumerators Name…….

This honey marketing assessment is targeted towards Producers/farmers/traders/processors/government and NGOs involved in honey production and marketing to understand the constraints and opportunities on honey production and marketing in Kouthern Karamoja. These individuals may be located in market places, supermarkets. Please collect data from a random group of people located in each place you are working in.

Describe the type of business (Circle best description)

1. *Producer/Trader of honey*
2. *Producer*
3. *Trader*
4. *Processor*

Location	*Producer/Farmer*
Why do you produce honey	*1= Sale 2= Consumption 3= Medicinal purposes*
If its sale what is the means of exchange	*1= Cash 2=Barter*
Seller	*Who are you selling for 1= self 2=Family 3=Business partner*
If honey is to be sold on cash basis what is the selling price	*1= Semi processed honey 2= Combed honey*
To whom does the producer sell to	*1= Local market 2=Honey cooperative 3=wholesaler 4=Honey packer 5= Other (Specify)*
What is the purchase price for a kg of	*1= Semi processed honey 2= Combed honey*
Who determines the price of honey in the market	*1= Seller 2=Buyer 3=Both 4= Other(Specify)*
How are honey prices determined	*1 = Fixed by buyer 2=Negotiation 3= Other (Specify)*
What type of honey is most demanded in the market and why??	*1= White honey 2= Brown honey 3= Other (Specify)*
What has been the trend in honey prices over the past 3 years	*1= 2011 2=2012 3= 2013*
How do you get honey and its products to the market	*1= Trek 2= Motorbike 3= Vehicle*
How much is the transport costs (rent of bicycle, motor bike/vehicle) to the nearest market	
Does the respondent add any value to the honey	*1= Process 2= Transport 3= Store for sale 4= Branding*

Marketing associations	*Are you a member of a marketing association? If yes, reference on the back of this page whether this association sells their honey collectively?*
What month of the year is harvest bumper	

Buyers/processors

Location	*Market Name*
Buyer	*Who are you buying for?* ***1*** *= Self,* ***2*** *= Family/Neighbor,* ***3*** *= Business partner 4= Association*
Purchase price	*1= Semi processed honey 2= Combed honey*
What has been the trend in honey purchase prices over the past 3 years	*1= 2011 2=2012 3= 2013*
To whom do you sell to	*1= Local trader 2=Honey cooperative 3=wholesaler 4=Honey packer 5= Super market 6= Other (Specify)*
Purchase price for honey products and their demand	*1= Bee wax 2=Propolis 3=Honey wine*
How are honey Purchase prices determined	*1= Fixed by the buyer 2= Negotiation 3= Other (Specify)*
What type of honey is most demanded for in the market and why??	***1*** *= White 2= Brown*
Will south karamoja honey compete with honey from other region interms of quality and price	*1= Yes 2=No*

If no why?	
How much tax is charged on a kg of honey	
What is the impact of tax on honey trade	
What strategy do you have to promote honey marketing in south karamoja	*1= Branding 2=Trade fairs/exhibitions 3=Other (Specify)*
Transport	*How do you transport honey to the nearest market 1 = Trek, 2=Bicycle 3=Motor bike 3 = Vehicle*
How much does it cost to transport honey to the nearest market	*1= within the district 2= within karamoja 3= neighboring sub-regions*
Do you add any value to the product	*1= Process 2= Transport 3=store to sell later 4= pack and brand*
What do you think is the most important thing that needs to be done to improve honey marketing in Southern Karamoja?	…… ……..

THANK YOU

REFERENCES

1. Kelly Wanda and Martin Maugustini. Oct 2011. *Building Viable Resilient Livelihoods, Oxfam*
2. Dathine Agricultural consult Ltd. *Expert studies for honey (Apiary) Sub- sector*
3. FEG. FAO. 2010. *Baseline Livelihood Profiles of Karamoja.*
4. Paul Wagabi, April 2013. *Agricultural Market Assessment for RWANU Project in South Karamoja*.
5. Uganda National Bureau of statistics. *National Livestock Census, 2008*