

**Farmer to Farmer East Africa**

**Volunteer Assignment Scope of Work**

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| **Summary Information** |
| Assignment Code: | UG 31 |
| Country: | Uganda |
| Country Project: | Maize Country Project |
| Host organization: | Bugaya Area Cooperative Enterprise ( BACE) |
| Type of Volunteer Assistance: | *Technology Transfer (T)*  |
| Type of Value Chain Activity: | *Processing (P)* |
| Preferred assignment dates: | **June- July, 2015** |
| Objective: | 1. Provide a road map for Bugaya ACE to address grain quality and loss challenges through hands-on training in best post-harvest handling and storage practices
2. Provide basic skills in warehouse management and collective storage at a cooperative level
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| Desirable Volunteer Knowledge and Skills:  | * Demonstrated knowledge and experience in post-harvest technology and storage techniques of grain crops
* Good writing and analytical skills, interpersonal communication and presentation skills (adult education skills)
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1. **BACKGROUND**

The Farmer-to-Farmer (F2F) East Africa program is a program that leverages US volunteer’s expertise to assist small holder farmers and small scale processors in East Africa to improve their business practices through volunteer assignments conducted with host organizations. Through F2F, CRS will improve the livelihoods and nutritional status of significant numbers of low income households by: i) broadening their participation in established commodity value chains as producers and service providers; ii) strengthening community resilience to shocks, such as droughts, that adversely affect livelihoods and; iii) preserving/enhancing natural resources upon which most rural communities depend. CRS will also increase the American public’s understanding of international development programs and foster increased cross-cultural understanding between host countries/communities and US volunteers.

Maize is the 3rd most important cereal crop after sorghum and millet in Uganda. Maize is gradually becoming a very important cereal in Uganda in terms of area under cultivation, production and human consumption. . In an average year, maize acreage accounts for about 10 percent of the total area under annual crops and maize consumption accounts for about 12 percent of cereals consumption (MAAIF & UBOS, 2000). It is mainly produced by small holders using hand tools and little or no purchased inputs. The low level of technology used in production means that the yields are low and the production process is aimed mainly at providing subsistence requirements with very little surplus for sale.

Maize yields are still low averaging about 1.3 tonnes per hectare as compared to the yield potential of about 3-4 tonnes per hectare. Low yields are attributed to low technology inputs, heavy reliance on natural conditions, traditional production systems e.g. use of farm saved seed and rudimentary tools, lower producer knowledge of proper agronomic practices, high post-harvest losses, deteriorating land resources, poor market linkages and lack of credit access. The technical assistance being sought will focus on general procedures of post-harvest handling and storage of maize, from harvest, drying and storage requirements, grain quality control and food safety aspects.

1. **ISSUE DESCRIPTION**.

Bugaya Area Cooperative Enterprise (BACE) started in 2002 as a savings and credit association (SACCO) and later transformed into an area cooperative enterprise in 2005. The cooperative is legally registered under the Uganda cooperative alliance, with a membership of 1,087 farmers 47% being female, all originating from 8 RPOs (Rural Producer Organisations). Currently, BACE offers a range of services to its member farmers which include; collective bulking and marketing of farmers’ produce, purchase of quality inputs (Seeds and fertilizers) and offering them in form of input loans to farmers, acting as guarantors for farmers to access loans from the SACCO, and Maize milling and packaging. The focus of the cooperative is to be a model for the farmers in serving their interests and act as a focal point for disseminating modern agricultural technologies.

The **main challenge** facing BACE is the poor quality of grain (immature, mouldy, and mixed with foreign matter, not fully dried grain) delivered by the members to the store for collective marketing. The poor quality grain reduces the bargaining power of the farmers leading to low farm gate prices and reduced incomes. On-farm post-harvest losses also greatly reduce the volume of grain that the farmer can expect for any given season; this ultimately determines how much income the farmer can fetch from this enterprise by the end of the season. The National Agricultural Research Organization, (NARO), estimates grain post-harvest losses at 12-25%. These losses are attributed to arthropod pests, fungi and bacteria, rodents and birds and man. The farmers lack knowledge of maize maturity indices causing harvest of immature or delayed harvesting of maize, determination of required moisture content is also a challenge due to lack of moisture meters.

Losses of maize occur throughout the post-harvest system i.e. harvesting, storing and processing right up to consumption. Delayed harvesting which is manually done using either hand/finger knife, pang or dislodging cobs from the main plant. The harvest is then carried home where drying is done on bare ground. The most common traditional practice of drying involves leaving cobs to dry on the mother plant in the field; stocking harvested crop in the field, spreading the crop on well levelled bare ground, stabilised ground plastered with cow dung, mats, cut spear grass, roof tops or rocks. Drying is solely dependent on sunshine, and hence limited to only daytime and non-rainy periods. The grain for consumption or storage is prepared by shelling. Traditionally shelling is done by either, prising the grain off the cob with the thumbs, rubbing two cobs together holding one in each hand or beating the cobs in a sack with a stick. The above methods are labour intensive, time consuming and wasteful. Furthermore, beating breaks the grain and reduces seed viability.

It is very important that the crop is properly dried to moisture levels of 12-13 percent for safe storage and also to eliminate moulding or rotting of produce, increase storage life and minimise mould growth. Considerable reduction in grain losses can be obtained by improving the techniques and technologies used during pre-harvest, harvest and post- harvest stages. However, farmers do not have such skills and information and therefore grain losses have remained a challenge to many smallholder maize growers. It is against this back ground that Bugaya ACE requested for technical assistance to address grain loss and quality challenges which happen during harvesting, post-harvest handling and storage.

1. **SPECIFIC OBJECTIVES OF THE ASSIGNMENT**

The objective of this volunteer assignment is to equip Bugaya Area Cooperative Enterprise members with skills for addressing quality and loss challenges as pertains to maize post-harvest handling and storage. The volunteer will provide technical support in the areas of:

1. Post-harvest processes such as maturity indices, drying ( determining moisture content of grains using simple methods in the absence of a moisture meter), storage, quality control and assurance, control of storage pests;
2. Recommendation on simple, cost effective storage facilities such as drums, bins and other storage facilities that have proved to work for other grain producers in other developing countries at household level;
3. Basic understanding of how field infestations of insects and moulds contribute to storage losses; aflatoxin development in the field and in storage, and how this can be minimized
4. Sorting to avoid mixed grain and minimise the presence of foreign material.
5. Relationship between grain quality standards and food safety aspects.

The volunteer shall provide training on the above mentioned topics to extension personnel of each of the 8 Rural Producer Organizations (RPOs); these will act as ToTs to carry on with the training after volunteer assignment. The training will also include representative farmers from each of the RPOs, a total of 30 – 40 farmers per training day. Where possible other chain actors such as traders, millers and transporters will be invited for the trainings. It is anticipated that this activity will take about 2 days at each RPO. The volunteer is expected to train at least 80 people. The farmer selection criteria will be based on their ability to train others.

The specificities of the training activities will be discussed with CRS staff and BACE upon volunteer’s arrival and activities adjustment can be made in agreement with the host, but the deliverables and results will remain.

The majority of training participants are illiterate or semi-illiterate, the volunteer is advised prepare training materials with this in mind. Focus should be on pictorials, illustrations, practical demonstrations and less theory. Training venues are usually at a school, in a local church or under the tree/shade.

**Host contribution** - BACE has committed to mobilize the RPOs members to attend the trainings. The host will also, avail key personnel to work closely with the volunteer, during the preparations and actual trainings, to ensure that key staff are trained and will continue training other farmers even after the assignment is completed. The host will also provide translation services.

1. **ANTICIPATED RESULTS FROM THE ASSIGNMENT**

As a result of the training, the farmers will understand ways of reducing grain loss and improve grain quality that is bulked for collective marketing and/ or processing.. And as such they will be able to fetch a much higher price for improved quality. Farmers will be in position to plan harvesting and post-harvest handling at various stages for better quality and quantity. Farmers will also be in position to understand the relationship between grain quality and nutrition for improved health.

Improvement in post-harvest storage techniques and facilities at the household level that are cost-effective will contribute to increased volumes of production for food and market. Improved storage will allow a continuous supply of food throughout the year, either for domestic consumption or trade; this will also increase farmers’ resilience to climatic shocks. A reserve for contingencies such as droughts will be made possible and farmers will be allowed an opportunity to sell at a time when the price will be favourable. Finally the simple training manual developed will subsequently help in building the capacity of the cooperative to carry on trainings for other members not reached directly by the volunteer.

The anticipated deliverables include:

* Trainings conducted and people trained
* Training guidelines/manual developed
* Debriefing with USAID and in country group presentations after assignment
* Field trip report and expense report
* Outreach activity, press release or a media event back in US
1. **SCHEDULE OF VOLUNTEER ACTIVITIES IN UGANDA**

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| Day | Activity |
| Day 1:  | Travel from home to US international airport |
| Day 2  | Arrival at Uganda Entebbe Airport, picked by hotel shuttle to Kampala and check in at Fairway Hotel. |
| Day 3 | At 9.00 am the volunteer is greeted at the hotel by CRS staff and thereafter taken to CRS office for briefing and finalise with logistics. Any necessary training material will be prepared at CRS offices before travel to the field.  |
| Day 4 | Travel to Kamuli district to commence the assignment.  |
| Day 5 | In the morning CRS introduces the volunteer to the BACE management team and board members.Together with CRS and the management, the volunteer will review the SOW and develop the action plan. In the afternoon, Visit some of the members to familiarise with current post harvest practices. |
| Days 6- 8 | Training 1st and 2nd RPO  |
| Days 9-11 | Training3rd and 4th and RPO |
| Days 12-14 | Training 5th and 6th RPO |
| Days 15-17 | Training 7th and 8th RPO |
| Days 18- 20 | Training ToTs ( Representatives from each of the RPOs- Model farmers) |
| Days 21-22 | Develop a training guide/ manual together with them for future trainings |
| Day 23 | Wrap up meetings, whilst emphasizing key concepts of the assignment. Participants evaluate the training and together with the volunteer discuss final report recommendations. End of assignment presentation. |
| Day 24 | Travel back to Kampala  |
| Day 25 | Debriefing at CRS office with USAID Mission and CRS staff.Volunteer finalizes his/her reporting at CRS office and fill out all necessary M&E forms as well as finalise liquidations with finance. |
| Day 26 | Depart for the US |
| TBD | Outreach event in the US |

1. **ACCOMODATION AND OTHER IN-COUNTRY LOGISTICS**

In Kampala, the volunteer will stay at Fairway Hotel & Spa ([www.fairwayhotel.co.ug](http://www.fairwayhotel.co.ug)). In Kamuli, the volunteer will stay at Century Hotels Ltd or any other hotel that will be communicated by CRS staff. The volunteer will be provided with an internet modem and a cell phone for entire duration of the assignment.

CRS will pay for hotel accommodation, and provide the volunteer with per diems to cater for meals and other incidentals. All advances received by the volunteer will have to be cleared before departing from Uganda. For more information, please refer to the country information that will be provided.

1. **RECOMMENDED ASSIGNMENT PREPARATION**
* The volunteer should prepare materials for hand-outs, which can be printed at CRS office in Kampala before commencement of the assignment. Flip charts, markers, masking tapes can be obtained at CRS offices in case the volunteer wishes to make some illustrations. Depending on the training venue the volunteer may use a laptop and projector for power point presentations. However if the training venue is in the community, it will be difficult to use PowerPoint. In this case the volunteer will be expected to prepare training materials and have hand-outs printed at CRS offices for distribution to the participants.
* CRS strongly recommends that the volunteer becomes familiar with the maize country project description prior to arrival in the country as well as country information that will be provided.
1. **KEY CONTACTS**

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