

**Farmer to Farmer East Africa**

**Volunteer Assignment Scope of Work**

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| **Summary Information** | |
| Assignment Code | ET-125 |
| Country | Ethiopia |
| Country Project | Grain Production and Sector Support |
| Host Organization | MCS (Catholic Secretariat Coordinating Office of Meki). |
| Host partner | CRS, Development Food Security Activity (DFSA) |
| Assignment Title | Maize post-harvest handling technology |
| Assignment preferred dates | December, 1st 2017-December, 27th 2017 |
| Objective assignment | 1. Provide a road map for farmers 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 home or store level. |
| Desired volunteer skill/expertise | * Demonstrated knowledge and experience in post-harvest technology and storage techniques of grain crops. |

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 1st most important cereal crop produced and consumed in the rift valley area of Ethiopia. Maize is gradually becoming a very important cereal in Ethiopia in terms of area under cultivation, production and human consumption. In an average year, maize acreage accounts for about majority percent of the total area under annual crops and maize consumption. 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. In Rift valley area following the urban development and rapidly growing population in the area demand for the maize and impute to the economy takes main part.

Maize yields are still low in Ethiopia averaging about 1.3 tonnes per hectare as compared to the yield potential of about 3-4 tonnes per hectare and below that in DFSA project area. The practice and use of the agricultural technology especially environment friendly technology use by the farmer very low and few of the local farmer use agricultural imputes. 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 on proper agronomic practices, high post-harvest losses, deteriorating land resources, poor market linkages and lack of credit access are among factors contributing to low productivity in the area and poor sector development. Development Food Security Activity (DFSA), a five-year program funded by USAID and implemented in nine drought- prone and food insecure Woredas (Deder, Midhega Tola and Melka Bello) of East Hararghe Zone, Dirdewa and (A/Negele, Shall, H/Arsi and Z/dugda) of West Arsi Zone of Oromia regional state. It is implemented through a consortium, led by CRS, with four members (ECC-SDCOH, MCS, McercyCorps and Center for Creative leadership (CCL). DFSA will strengthen linkages and learning to enhance community learning and action by highlighting the link and inter-dependencies among livelihoods, food security, nutrition, and natural resource management

DFSA is developed to have sustainably increased resilience and reduced long term vulnerability to current and future climate change and climate-related shocks and stresses for about 240,000 households among communities live in three livelihood zones (Farming, Agro pastoral and Pastoral). MCS is one of the consortium members responsible to implement at grass root level, it has many years of experience in community resilience, food security and agricultural development projects in the eastern part of Ethiopia

**B. ISSUE DESCRIPTION**

Ethiopian Small holder Farmers in the DFSA operational woredas typically known as Great Rift valley area commonly practice not fully transformed or Less-modernized agricultural practices. Maize is the staples food for the target area of farmer and in the entire country, contrary to the declining resource potentials and poor practice that limited productivity and the economics of the sector.

The main challenge facing DFSA area Small holder farmers is the poor quality of grain (immature, mouldy, and mixed with foreign matter, not fully dried grain) delivered to the market and stored by farmers. 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. 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 background that DFSA Rift valley area farmers requested for technical assistance to address grain loss and quality challenges which happen during harvesting, post-harvest handling and storage.

1. **OBJECTIVES OF THE ASSIGNMENT**

The objective of this volunteer assignment is to equip project area small holder farmers 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 selected farmers, development agent, respective project staff and crop specialist of the woreda, these will act as ToTs to carry on with the training after volunteer assignment. This training includes Shalla woreda kebeles called Arjo, Lalle and Walilalti and a total of 60 Farmers 20 individual from each kebele targeted for the training. 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-** The host Meki Catholic Secretariat will select members and stakeholders in various positions to attend trainings, gather materials in addition to a root cellar demonstration site, and facilitate the volunteer to reach them. The host will make prior arrangements to ensure that the volunteer can attend scheduled training forums to train the farm employees. The host will also provide the volunteer with office space with furniture. In consultation with CRS, the host will arrange vehicle for field work and facilitate volunteer field travel and related any security clearance. 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 provide one photo/Video taker to assist the phot capture and videos of the skill on farm field for future documentation and also provide translation services. The host Meki Catholic Secretariat will select the training place for the farmers skill transfer at two centre, select a farm field for demonstration and make in advance arrangements of required activities.

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 farming community to carry on trainings for other members not reached directly by the volunteer.

The anticipated deliverables include:

* Trainings conducted and people trained on post-harvest handling.
* Training guidelines/manual developed to for reference
* Debriefing with the CRS and Hosting Organization 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 | Arrival in Addis. The volunteer will be met at Bole Airport by CRS’s client hotel Saro Maria Hotel (mail: [reservation@saromariahotel.com](mailto:reservation@saromariahotel.com); [Phone](https://www.google.com/search?rlz=1C1GGRV_enET751ET751&q=saro-maria+hotel+phone&sa=X&ved=0ahUKEwie4JH0gNfWAhXFOBoKHS8rB1sQ6BMIwwEwEA): [+251 11 667 2167](javascript:void(0))). The volunteer will locate the Saro-Maria hotel kiosk and receive their pre-arranged transport. |
| Day 2 | * Welcoming and briefing meeting at CRS office with F2F, DFSA and others. Discuss anticipated outcomes and work plan. Then fully briefed on logistics and field trip. * Drive to Meki in the afternoon (2hrs) * Check lodging at Haile hotel (Ziway) |
| Day 3 | * First hand briefing on the main objectives and modality of the assignment and adjust the agenda for the coming days. * Introduction with Meki Catholic secretariat and DFSA staff. * Briefing with the field staff and jointly prepare work plan for the assignment days |
| Day 4 | * Travel to DFSA operation Woreda and kebeles, meeting with the Woreda staff and smallholder farmers to understand their challenges focusing on the maize post-harvest handling practices. * Based on information gathered and gaps identified, prepare training materials |
| Day 5-6 | Conduct first hand training |
| Days 7 | **Rest day:** |
| Day 8 -13 | Provide hands on field level training and practical demonstration at sites |
| Day 14 | * Wrap-up trainings emphasizing key concepts of the assignment. Participants evaluate the overall technical innovations/assistances and the training, and together with the volunteer discuss final report recommendations. |
| Day 15 | * Group presentation (morning) and Volunteer will be back to Addis Ababa (afternoon). |
| Day 16 | * Debriefing with USAID Mission and/or CRS staff. * Finalize and submit MEAL doc (report, PPT, and attendance) and all necessary logistics to CRS, F2F program * Depart for USA |
| TBD | Outreach event when back in the US |

1. **Desirable Volunteers Kills**

The volunteer will have the following qualifications and competencies:

* Knowledge and demonstrated experience on post-harvest technology and storage techniques of grain crops.
* Experience in adult training and technical assistance especially with rural people including smallholder subsistence farmers
* Good interpersonal and communication skills including analytical skills
* Respect the cultural and religious norms of the rural people.
* Willing to work under the context of East Africa, Ethiopia condition

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

* Before travelling to the assignment place, the volunteer will stay in Addis Ababa at one of the CRS’s client hotels, Saro-Maria that will be booked & confirmed before the arrival date. The hotel has rooms that include services such as airport pickup and drop-off, breakfast, wireless internet, etc.
* CRS will arrange a vehicle for short travel from and to the hotel to CRS.
* All required materials will be prepared ahead of time and provided to the volunteer. CRS Ethiopia will provide the volunteer with a laptop computer (if requested by the volunteer), local internet dongle (modem/EVDO) and mobile phone with a charged local SIM-card. Any other required logistics and facilities can also be requested by the volunteer during his stay in Addis Ababa.
* CRS will provide a vehicle and accompany the volunteer to the place of assignment. During his assignment period, the volunteer will be booked in a hotel at Ziway, Haile resort hotel
* CRS Ethiopia will arrange hotel accommodations and cover the lodging bills against receipts.
* CRS HQ will provide the volunteer with a per-diem advance to cater meals and incidences.
* For more information, please refer to country information that will be provided.

1. **RECOMMENDED ASSIGNMENT PREPARATION**

* Although CRS and host developed such hinting SOW, the volunteer can fine-tune through his professional qualifications to successfully carry out this assignment.
* Generally, Ethiopia is under the tropical zone, where malaria may be a problem. Therefore, the volunteer is advised to take pills or vaccination for malaria and (maybe also for cholera) as per medical recommendations by his doctors/health professionals before departing from US.
* Prior to travel, the volunteer is advised to prepare necessary training and demonstration aids and written handouts. Electronic copies of the handouts and any other paper materials can be printed for immediate use at the CRS office in Addis Ababa on request by the volunteer.
* If the volunteer requires simple training aids like flip charts, markers or tape s/he should make the request and collect from the CRS office in Addis Ababa prior to travel to the assignment place.
* Translation of handouts to the local language can be done, if required.
* Depending on the meeting places and availability of electric power and LCD projector, the volunteer may use a laptop and projector for power point presentations

1. **KEY CONTACTS**

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| **CRS Baltimore** | **CRS East Africa Regional Office** |
| **Maria Figueroa**  Recruitment Manager  EA Farmer to Farmer Program  228 W. Lexington Street  Baltimore, MD 21201; 410-951-7366  Email: [maria.figueroa@crs.org](mailto:maria.figueroa@crs.org) | **Nyambura Theuri**  Deputy Project Director  EA Farmer to Farmer Program  P.O. Box 49675 – 00100  Nairobi, Kenya  St. Augustine Court Karuna Close Road  Email: [nyambura.theuri@crs.org](mailto:nyambura.theuri@crs.org) |
| **CRS Ethiopia:** | |
| **Biruk Tesfaye,** F2F program manager  CRS Ethiopia Office, P. O. Box 6592;  Addis Ababa, Ethiopia  Phone: +251-112-788800,  Mobile: +251-911-718450  Email: [biruk,tesfaye@crs.org](mailto:eshetayehu.tefera@crs.org) | **Zemede Zewdie,** Head of Programs (HoP)  CRS Ethiopia Office, P. O. Box 6592  Phone: +251-112-788800,  Mobile: +251-911-507305  Email: [zemede.zewdie@crs.org](mailto:zemede.zewdie@crs.org)  Addis Ababa, Ethiopia  **Desalegn Akati,** DFSA Economic Livelihoods Manager  CRS Ethiopia Office, P. O. Box 6592  Addis Ababa, Ethiopia  Phone: +251-112-788800,  Mobile: +251-913 487449  Email: [desalegn.akati@crs.org](mailto:zemede.zewdie@crs.org) |
| **Host Organization** | |
| **Mr. Feyisa Lemi**  Social Development Coordinating Office of Meki, Livelihood officer Meki, Ethiopia  Cell phone: +251-913374606  Email: fayelem2013@gmail.com | **Mr. Amintu Esmael**  Social Development Coordinating Office of Mekie DFSA PM (SDCOM), Meki, Ethiopia  Cell phone: +251-934926018  Email: amintu.esmael@mcsethio.org |