



**Farmer-to-Farmer East Africa
Volunteer Assignment Scope of Work**

NOTE: THIS SCOPE OF WORK AWAITING FINAL EDITS

Summary Information	
Assignment Code	ET-114
Country	Ethiopia
Country Project	Horticulture Production and Sector Support
Host Organization	ECC-Social and Development Coordination Office of Sodo (ECC-SDCOS)
Assignment Title	Small scale postharvest handling practices of fruits and vegetables
Assignment preferred dates	June/July
Objective assignment	<ul style="list-style-type: none"> • Increased shelf-life of horticultural crops through reduction in post-harvest losses • Develop simple post-harvest handling guidelines on horticultural crops
Desired volunteer skill/expertise	<ul style="list-style-type: none"> • Graduate knowledge/skills and experience in post-harvest handling, storage and management activities. Horticultural crops

A. BACKGROUND

The Farmer-to-Farmer (F2F) East Africa program leverages US volunteer’s expertise to assist smallholder farmers and small scale processors in East Africa to improve their business practices through volunteer assignments conducted with host organizations. Through F2F intervention, 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 and US volunteers.

Horticultural crops play a major role in developing country like Ethiopia, both in income and social spheres for improving income and nutrition status. In addition, it helps in maintaining ecological balance since horticultural crops species are so various and it provides employment

opportunities as their management being labour intensive. Ethiopia is a country with great variety of climate and soil types that can grow diversity of horticultural crops for home consumption and foreign markets. Presently, the majority of the horticultural crops product comes from smallholder farms.

Ethiopia has got a vast potential to develop intensive horticulture on small scale as well as on commercial scale. Some of the main reasons that contribute to an overall investment include favourable and diverse climate (Agro-climatic suitability), rich water resources for diversified irrigated agriculture, rise of demand for horticultural crops; particularly in urban areas and export possibility of these horticultural crops are very encouraging. Regardless of an enormous potential and a favourable environmental and socio-economic advantage, the horticulture sector is under developed. The margin of the current achievements, in terms of area & output is a small development compared to the possible level that can be attained. Horticultural crops production in general is constrained by shortage of seeds/planting materials, diseases and insect pests, poor post-harvest handling and poor linkage to market and market information. Major horticultural crops in Ethiopia include garlic, shallot, carrot, tomatoes, cabbage, onion, cauliflower, potato (Irish potato), sweet potato, papaya, banana, orange, pineapple, Avocado, lemon, mangos etc.

The assignment place Wolayta zone is located in the SNNPR¹ and covers an altitude range of 700–2900 m above sea level, having a bimodal rainfall: small rains from March to May and heavy rains during the months of July and August. The area is divided into three ecological zones: lowland <1500 m asl, mid-highland 1500–2300 m asl, and highland >2300 m asl. Most of the area lies within the mid-highland agroecological zone. Soils of the zone are varying due to its diverse topography. The dominant soils of the zone are reported to be Nitosols, which are sesquioxidic and moderately to strongly acidic. The mixed farming system is the predominant with the main food crops of maize, beans (*Phaseolus vulgaris* L.), sweet potatoes, and ensete (*Ensete ventricosum*), while Irish potato, tef (*Eragrostis tef* (Zucc.)), coffee (*Coffea Arabica* L.), and ginger are among the cash crops cultivated in the zone. Cattle, sheep, poultry, and donkey are the main livestock types.

The host organization, Ethiopian Catholic Church Social and Development Commission Coordinating Office of Sodo (ECC-SDCO/S) is implementing food security and agricultural development projects in this zone. In Ethiopia in general, post-harvest losses are a major source of food loss so that farmers growing horticultural crops are facing high economic losses, because there have been no methods of increasing the shelf life of these crops. Therefore, the host requested volunteer technical assistance on post-harvest fruit and vegetable handling. The post-harvest losses of perishable (vegetable and fruits) food crops in Ethiopia is estimated at about 30 percent due to high moisture content, insect infestation and damage during handling (packaging, storage and transportation).

¹ SNNPR is abbreviation that stands for Southern Nations and Nationalities Peoples Region (SNNPR) of Ethiopia

B. ISSUE DESCRIPTION

Ethiopia has a comparative advantage in a number of horticultural commodities due to its favourable and diverse climate (Agro-climatic suitability), rich water resources for diversified irrigated agriculture, rise of demand for horticultural crops; particularly in urban areas and export possibility of these horticultural crops are very encouraging. Despite this huge resource, its contribution to the country's GDP remains low. This is because of low quality production, productivity and poor post-harvest handling of horticultural crops. The main reasons for low productivity include: shortage of high yielding and good quality varieties, seed/planting materials, diseases and insect pests, shortage of skilled personnel, inadequate capacity in research and extension, crop management (Irrigation, IPM, quality, food safety and weak market chain).

Fruits and vegetables provide different benefits and play a significant role in human nutrition, especially as sources of vitamins, minerals, and dietary fibre. However, high value horticulture is challenging and the practical risks involved at every stage are so high that the chances of attaining such achievements are quite low, and highly dependent on management performance. Therefore, production of fresh fruits and vegetables has its own complexity. Their perishability and hugeness makes them difficult to manage easily during postharvest period unlike that of dry grains. Because of such perishable nature of the produce and lack of knowledge as well as shortage of capital, horticulture industry in sub-Saharan Africa in general and in Ethiopia stays at its infant stage.

The other reason is that most of these perishables are produced by small-scale farmers those who have limited knowledge and financially poor in this region. Technical training and extension services on improved crop husbandry techniques are not available. Thus, average productivity of the crops is low both in quality and quantity. Losses of agricultural products also occur at all stages in the postharvest chain in the small-scale farming sector. Therefore, postharvest loss is very common both during pre- and post-harvest periods which have a negative impact on the food security program of the host.

The causes of food losses and waste in developing countries are mainly connected to financial, managerial and technical limitations in harvesting techniques, storage and cooling facilities in difficult climatic conditions, infrastructure, packaging and marketing systems. Physical and quality losses are mainly due to poor temperature management, use of poor quality packages, rough handling, and a general lack of education regarding the needs for maintaining quality and safety of perishables at the producer, wholesaler, and retailer levels.

Generally, post-harvest losses are a major source of food loss, because, there have been no methods of increasing the shelf life of these crops. Like temperature management; avoiding mechanical

injury; understand microbial action, and poor packaging. The host, therefore, requested F2F volunteer assistance to provide technical support on post-harvest handling and management of horticultural crops at small scale and back yard farming which is usually undertaken by farmers. The volunteer specialist will train the farmers and host staffs.

C. OBJECTIVES OF THE ASSIGNMENT

The objective of this volunteer assignment is to train and/or technically assist the targeted beneficiaries on post-harvest technologies (handling and management) of horticultural crops for improved production. The beneficiaries or attendees of this assignment will be expected to be more than 50 farmers, 3 host staff and more than 7 government development agents. Anticipated training topics include but are not limited to the following:

- Postharvest biology and technology of Horticultural Crops: Principles and Practices for quality maintenance, food safety
- Physiology of Horticultural Crops
- Proper handling of horticultural crops; handling during harvest, sorting, cleaning and packaging
- Current technologies for storage, packaging and handling
- Storage structures; types and characteristics of simple storage structures suitable to local environment (at small scale) etc.
- Develop simple guidelines demonstrating principles and practices of effective post-harvest handling of vegetables/ fruits.

Host contribution – ECC-SDCO/S will select 5-10 key staff and government DA's for TOT and 50 smallholder farmers from its projects and other interested beneficiaries. The host will also avail key personnel to work closely with the volunteer to ensure translations to local languages, assist volunteer during training and demonstrations at Farmer Training Canters (FTCs), and join on-farm and household visits. ECC-SDCO/S will also select scheduled training forms for the volunteer to conduct training for the ToT. The host will also provide the volunteer with office space and office furniture within its office compound stationed at Sodo town (330 km south of Addis Ababa). Facilitate lodging at Sodd town. For field traveling within the assignment area, the host will provide the volunteer with transport. ECC-SDCO/S will consult CRS to cover fuel cost against receipts or to rent a car.

D. ANTICIPATED RESULTS FROM THE ASSIGNMENT

It is anticipated that the volunteer will transfer up-to-dated technologies and overseas' experience to the host staffs and farmers in a form of discussion, demonstration, seminars, and/or hands-on (fieldworks). Thus:

- Poor temperature management; Mechanical injury; Microbial action, and Poor packaging.
- Farmers able to maintain the good quality of the harvested produce for the market.
- Reduce the level of losses in weight and quality after harvest

The anticipated deliverables that can be accomplished by the volunteer includes:

- Initial presentation done (outlines of topics of the course, plan, approach, etc.),
- If time permits, reviewing of training modules or handouts prepared and submitted.
- Reports with recommendation submitted;
- Presentation to CRS staff and/or USAID;
- Outreach events conducted in the US.

E. SCHEDULE OF VOLUNTEER ACTIVITIES IN ETHIOPIA

Day	Activity
Day 1	Arrival in Addis. The volunteer will be met at Bole Airport by CRS's client hotel Churchill (churchillhotel@ethionet.et ; phone # 0111111212). The volunteer will locate the Churchill hotel kiosk and receive their pre-arranged transport.
Day 2	<ul style="list-style-type: none"> • Briefing meeting at CRS office with CRS F2F staff, briefing on logistics and itinerary of the trip and discuss anticipated outcomes and work plan;
Day 3	Car travel to the assignment site (Sodo town (330 kms from Addis Ababa). S/he will be introduced with the host and will be accommodated at Sodo town.
Days 4	First hand briefing on the main objectives and modality of the assignment and adjust the agenda for the coming days (work planning session). Briefing and debriefing with the field staffs.
Day 5-6	<ul style="list-style-type: none"> • Quick field observation and assessment; • Planning to demonstrate with model staff and selected adoptive farmers, fields, equipment, etc.
Day 7	<ul style="list-style-type: none"> • Market visit
Day 8	Rest day
Days 9-14	Provide training and advice to the farmers
Days 15	Rest day
Day16-17	Continue conducting the assignment (training/academic and practical)
Day18	<ul style="list-style-type: none"> • Wrap up sessions that emphasize key concepts of the assignment: the host evaluates the assignment and discusses final report recommendations with the volunteer. • Group presentation to the host in the presence of CRS F2F staff • Travel back to Addis
Day 19	<ul style="list-style-type: none"> • Debriefing at CRS office with USAID Mission and CRS staffs. • Submit all reports, return logistic items and complete all required activities
Day 20	<ul style="list-style-type: none"> • Depart for the USA (evening hours)
TBD	Conduct outreach activity when back in the US

F. DESIRABLE VOLUNTEERS SKILLS

- Experience in post-harvest handling and storage of horticultural crops (fruits and vegetables)
- experience in in small scale production of vegetable and fruits at community level is desirable.
- Demonstrative experience in agricultural education/learning institutes and/or universities in the US and/or other African agricultural universities,
- Ability and preparedness to use relevant teaching aids and audiovisuals,
- Demonstrated experience in advisory, research and laboratory work, emphasizing horticulture production
- Good communicator and interpersonal skills

G. ACCOMMODATION AND OTHER IN-COUNTRY LOGISTICS

- Before travelling to the host at the assignment place, the volunteer will stay in Addis Ababa at one of the CRS's client hotels that will be booked and confirmed before the arrival date.
- In Addis Ababa, the hotel usually has rooms that include services such as airport pickup and drop-off, breakfast, wireless internet, etc.
- The hotel or CRS will arrange a vehicle for short travel from the hotel to CRS and vice versa while in Addis Ababa.
- All required materials will be prepared ahead of time and will be provided to the volunteer. CRS Ethiopia will provide the volunteer with a laptop computer, local internet dongle (modem/EVDO) and mobile phone with charged local SIM-card.
- Any other required logistics and facilities can also be requested by the volunteer during her/his stay in Addis Ababa.
- CRS will arrange transport service and accompany the volunteer to the place of assignment.
- During her/his assignment period, the volunteer will be stay in the guesthouse or at a hotel in Sodo town.
- CRS Ethiopia will cover the lodging bills against receipts.
- CRS HQ will provide the volunteer with a per-diem advance to cater meals.
- CRS Ethiopia will also reimburse the volunteer with laundry costs against receipts. Before departing from Ethiopia, the volunteer will also liquidate if s/he received any advances in Ethiopia.
- For more information, please refer to country information that will be provided.

H. RECOMMENDED ASSIGNMENT PREPARATIONS

- Although CRS F2F has developed such hinting SOW, the volunteer can fine-tune through her/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 her/his doctors/health professionals in US 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 in the locality of the assignment, 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.

I. KEY CONTACTS

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