

**Farmer-to-Farmer East Africa**

**Volunteer Assignment Scope of Work**

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| **Summary Information** |
| Assignment code | ET 90 |
| Country | Ethiopia |
| Country Project | Horticulture Production and Sector Support |
| Host Organization  | Adigrat University, College of Agriculture and Environmental Sciences |
| Assignment Title | Training on Animal Biotechnology and Breeding |
| Assignment Preferred Dates | Before mid-June or Oct to Dec, 2017 |
| Assignment objectives | To give training on animal biotechnology and breeding to academic staffs and students  |
| Desired Volunteer Skill/Expertise | knowledge and experience on Animal breeding and biotechnology preferably a PhD holder |

1. **BACKGROUND**

Livestock play a crucial economic role in Ethiopia. Ministry of Finance and Economic Development (MOFED) estimates place livestock’s contribution at about 25 percent of total agricultural GDP. If the value of ploughing services is included, the sector contributes up to 45 percent of agricultural GDP. At the national level, livestock is the source of industrial raw materials (milk, meat, hides and skins) and contributes about 45 percent to the agricultural GDP, 18.7 percent to the national GDP and 16–19 percent to the total foreign exchange earning of the country (MoA 2012)[[1]](#footnote-1). The Livestock Sector Analysis results shows there are about 11.4 million livestock producing households in Ethiopia in 2013 (CSA, 2013). The livelihoods of large numbers of food insecure households both in the highland and low land parts are based on livestock. Hence, improving livestock productivity and increasing farmers’ incomes are key to achieving food security and improved nutritional status at household level.

Adigrat University is among the newly established public universities in the country. The University is established in 2011 with the intention of producing highly qualified graduates who will be able to serve the society particularly the smallholder farmers to improve their living status and wellbeing. The college of Agriculture and Environmental Sciences of the Adigrat University is one of the six colleges which comprise five departments: 1) Animal production and technology; 2) Plant sciences; 3) Natural resource management; 4) Environmental sciences and 5) Horticulture. These departments pursue three interrelated pillars: training; on-farm research; and farming community service. Despite the big vision of the University, it lacks experienced professionals and needs technical assistances in some fields especially in animal bio-technology and breeding.

1. **ISSUE DESCRIPTION**

Ethiopia has enormous potential for increased livestock production, both for local use and for export. However, the productivity of the sector is constrained by technical factors, among which are inadequate feed resources, poor livestock husbandry, and low genetic potential of the indigenous national herd. Lack of strong extension and marketing services, as well as diseases and high stocking rates on grazing lands are also serious constraints. Due to these factors the contribution of the sector to the agricultural economy of the country remained low.

In general rates of yield improvement in the country are lower than population growth, suggesting that production per capita is likely to decline. One of the major challenges of increasing agricultural productivity is lack skill and knowledge in different areas of which bio-technology and genetic improvement of animals is the one.

Adigrat University is one of the government/public universities established in 2011 with the intention of producing highly qualified graduates who will be able to serve, with the highest possible dedication, for the success of the country’s Growth and Transformation Plan (GTP), and beyond. However in order to attain these objectives the staffs and the extension service of the university needs technical assistance.

Since the university is still at young stage, most of the staffs are junior and need technical assistance in different areas. Currently the college of Agriculture and Environmental science requested volunteer specialist assistance on animal biotechnology and breeding.

1. **OBJECTIVES OF THE ASSIGNMENT**

The objective of this particular assignment is to transfer theoretical and practical knowledge and skill training on animal breeding and biotechnology thereby the staffs will cascade to their students and use the knowledge in their research activities. In addition the student will clearly understand the essence of bio-technology concept and its application.

The specific objectives of this volunteer assignment, therefore, include providing training and advice on some of the following areas:

* Role of biotechnology in animal nutrition (Rumen biotechnology) and composition of milk;
* Artificial Insemination (AI);
* Oestrous synchronization;
* Multiple ovulation and embryo transfer (MOET);
* In-vitro-fertilization;
* Techniques of inducing lactation, Induction of parturition;
* methods of gene insertion (gene transfection methods);
* Transgenic Animals (Evaluation and Dissemination of transgenic in Animal production);
* Marker assisted selection in Animal Breeding;
* Embryo manipulation for promoting twin and multiple births (embryo splitting, cloning & sexing);
* Embryonic stem cells & its application in Animal breeding are identified by the college.

After completing the university, most of the graduated students join the national agricultural research institutes, the government extension the likes, so that they will directly apply their knowledge in the improvement of anima breed and hence, productivity increased and nutritional status of smallholder farmers improved.

**Host contribution** –Adigrat University will assign an associate to the volunteer to facilitate and advise her/him on the local situations during the trainings in and out of the University. The university is also expected to arrange transport for the volunteer to move from his/her hotel to assignment area and to the farmers’ field (if necessary the university can consult ADCS or CRS for vehicle arrangement). Availing required places/laboratory is also expected from the university. It will also organizes the volunteer’s hotel arrangements (lodging), and ensure all required facilities are appropriate. CRS will cover lodging costs against receipts and provide per diem advances for meals.

1. **ANTICIPATED RESULTS FROM THE ASSIGNMENT**

It is anticipated that staffs and students will get training on animal production and technologies..

The deliverables includes,

* + Initial presentation (outlines/list of activities, plan, approach, etc),
	+ Records on participants of the training and direct assistance conducted,
	+ Training manuals
	+ Field report with recommendation
	+ Presentation to CRS staff and USAID,
	+ Outreach events conducted in the US.
1. **SCHEDULE OF VOLUNTEER ACTIVITIES IN ETHIOPIA**

| **Day** | **Activity** |
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| Day 1 | * Arrival to Ethiopia. The volunteer will be met at Bole Airport by CRS’s client hotel Churchill (churchillhotel@ethionet.et / info@churchillhoteladdis; phone # 0111111212) or another client hotel with a placard bearing “CRS logo and volunteer name”.
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| Day 2 | * Briefing meeting at CRS office with CRS F2F staff and become fully briefed on logistics and itinerary of trip. Discuss anticipated outcomes and work plan
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| Day 3 | * Air flight to Mekele city (50 minutes) and car travel to Adigart town (120 km from Mekele) and to Adigrat University,
* Meeting with high level and medium level officials of the university such as vice presidents and college dean.
* Briefing on the main objectives of the assignment and work planning session and adjust the agenda as appropriate with the staffs of the host/host partner and CRS F2F.
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| Day 4 | * Have first-hand discussion with staff (senior and junior lecturers/researchers) and students
* Review documents
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| Day 5-7 | * Provide class room trainings for animal science department academic staff members
* Provide laboratory assistance (if important)
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| **Days 8** | **Rest day** |
| Day 9-14 | * Continue providing class room trainings for Animal production and technology department students
* Provide laboratory assistance (if important)
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| **Day 15** | **Rest day** |
| Day 16-17 | Continue providing training or both staff members and students  |
| Day 18 | * Conduct a seminar if appropriate
* 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.
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| Day 19 | * Volunteer drives back to Mekele and flight back to Addis Ababa accompanied by CRS staff
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| Day 20 | * Volunteer finalizes his/her reporting and submits training M&E forms to CRS F2F staff. Debriefing at CRS office with USAID Mission and CRS staff.
* Volunteer liquidates cash advances and expenditures with finance.
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| Day 21 | * Depart for the US
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| TBD | Outreach event upon return to the US, could include: presentation with a local group/organization, press release, media event and/or speaking tour. |

1. **DESIRABLE VOLUNTEERS SKILLS**

The volunteer will have the following qualifications and competencies:

* Qualifications in relevant field of sciences: biotechnologist
* Hands on agricultural experience and knowledge on animal science
* Experience in training of academicians
* Proven skills in modern animal production related technologies
* Good communication skill
1. **ACCOMMODATION AND OTHER IN-COUNTRY LOGISTICS**
* Before flying/travelling to the assignment site, the volunteer will stay in Addis Ababa at one of the CRS’s client hotels (most probably Churchill hotel) 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 (if s/he needs), 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 local flight and transport vehicle and as well as will accompany the volunteer to the assignment site.
* During her/his entire assignment duration, the volunteer will be booked in a hotel at Adigrat town. CRS Ethiopia will arrange hotel accommodation and cover the lodging bills against receipts.
* CRS HQ will provide the volunteer with a per-diem advance to cater meals and incidences.
* CRS Ethiopia will also reimburse the volunteer with laundry costs against receipts.
* Before departing to US, the volunteer will also liquidate advances (if any) at CRS Ethiopia.
* For more information, please refer to country information that will be provided.
1. **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.
* Although the assignment site is in dry highland areas and malaria may not be prevalence, having precautions in taking pills or vaccination for malaria and (maybe also for cholera) upon recommendations by her/his doctors/health professionals in US may be advisable.
* Prior to travel, the volunteer is advised to prepare necessary training and demonstration aids and written handouts. Softcopies 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 use of 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.
* If required, 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.
1. **KEY CONTACTS**

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| **CRS Baltimore** | **CRS East Africa Regional Office** |
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1. Animal production vision and strategy for Ethiopia, Ministry of Agriculture and International Livestock Research Institute, February 2013 [↑](#footnote-ref-1)