

VOLUNTEER REPORT FORMAT*To be submitted to CRS at the end of volunteer assignment and shared with the Host***1.1 Assignment information: ET08**

- a) Volunteer Name: Paul A. Wojtkowski Ph.D.
- b) Host Organization: : Hossana Catholic Secretariat –Integrated Community Development Project
- c) Assignment: Knowledge/skill transfer on wheat agronomy and its associated crop rotation crops of the grain legumes
- d) Dates of Assignment: **12-26 July, 2014**
- e) Number of days worked

1.2.1 Objective 1 in your SOW

- a) Progress with the objective

The region is a high-intensity agricultural landscape which, through over-population, has resulted in densely-packed farms. In short, the land-area is fully utilized. This is a user-optimized landscape where, with few exceptions, the addition on a new crop or tree species means the removal of an existing crop or tree.

Within this context, change is difficult and on-farm experimentation is mostly out of the question. Given population growth, more output is needed. With large increases in population, these changes should result in large gains. Unfortunately, the opportunities to do this are small. This means an uncertain future. Some trends are under way. Despite the cultural preference for wheat, teff, and other grains, maize and potato are finding increased favor. This is because of their high per area yields. In the case of maize, this includes the opportunities for animal forage. Given the crowded landscape. the is a difficult environment in which to suggest major improvements. Despite this, some observations and suggested changes that might help. Some are easy, others difficult.



- b) Expected impacts/results

During this assignment, about 45 farmers and about 5-7 development professionals were directly contacted. The suggestions formulated range from the some that are easy-to-implement, other represent a long-term effort. As always, one hopes that some of the suggestions will be acted upon. The use of soapy water in place of insecticide is a cost savings and has the highest prospect for success. Intercropping is second on the list. The others are more involved and will require greater effort.

c) Recommendations¹

Insecticides

Many farmers use agricultural chemicals. Besides being costly, these represent a health risk. The easiest suggestion is to eliminate insecticides. The best replacement is to spray with a solution of common soap. A rich, sudsy mix of soap and water (any soap) is excellent insecticide that works against most insect species. This is a contact killer that is sprayed directly on the targeted insects.

It is suggest that field staff be provided with small, new sprayers. These sprayers should be kept clean to make these safe for demonstrations in front of large groups.

Intercropping

Local farmers have, and do, experiment with many form of intercropping. It is difficult to say which of these *ad hoc* systems offer the expected yield gains. With the possibility for large yield gains, intercropping should be encouraged.

The simplest way is to offer an example. Maize with beans is a proven combination. This works best with climbing beans (planted within the maize rows two weeks after planting the maize). Bush beans are also utilized (planted between maize rows, again two weeks after planting the maize). Both this mixes should add a 50% beans crop to the maize (total 150% output as compared with maize alone). The area has adequate rainfall is support this combination.

Pollination

From talking with farmers and from observation, there seems a shortage of crop pollinating insects. This is manifested with some shortfall in fruits and vegetables and is not uniform across the landscape. A guess would put the loss at about 5% of total yields. This number could be higher.

There are local bee hives (see photo). These are of traditional design and are destructively harvested for their honey. This, coupled with some rather dubious practices, keeps these hives in a very weak state. Also, the use of pesticides, lack of dry-season water, and the abundance of eucalyptus trees (a desirable bee species) may limit the crop pollination services.

In one region, there is a bee/ honey project employing movable-frame hives. Here the bees are active and the hives strong. Fortunately, those operating the apiary had only a rudimentary knowledge of hive management. Given the lack of transportation, lack of 'modern' hives, and lack of knowledge, this project is not easily transferable across the wider landscape.

What can be done is to encourage those with traditional hives to move the bees into tree-top locations and not harvest the honey (i.e., weaken or destroy the bees). This might be difficult sell as the honey does represent value. This is the easiest means to offer wider pollination services.



¹ **Note:** The most useful recommendations for hosts are ones that they can implement themselves with minimal expense. For example, a cooperative might change its financial reporting procedures or hold more regular meetings of its board. Broad recommendations on tax or credit reform, changes in government policy, or investment in large-scale equipment, are usually not within the host organization's reach.

Vetiver

There are many farms that are located on steep hillsides. Rather fortunately, the soils are not that erosion prone. This seems the case with grain crops. At present, there are small, anti-erosion structures (see photo below).

It might be advantageous to employ a stronger, anti-erosion measure. The grass vetiver will do just that. Found in other parts of Ethiopia, this grass species might be tried on the steepest, most erosion susceptible of the cultivated hillsides. This would allow wider range of crops to be grown on these hillsides.



Kudzu and Chayote

In all the areas observed, there is an over-abundance of domestic animals and an overgrazed landscape. Clearly, more animal forage is needed. With the area entirely utilized, there is only one unexploited area. This is on the fences and hedges and maybe atop metal roofed houses (not the thatched roofs). Kudzu is a very fast growing forage species. As it climbs on fences and structures, it could provide cut forage for the various animals. This might face resistance as kudzu can be a dangerous invasive. Still, this is one possibility to increase productivity in an already crowded landscape. Climbing vines, not as forage, but as crops, or another unexploited opportunity. This might include the climbing squash chayote.

1.3 Number of people Assisted

- a) Through formal training
- b) Through direct technical assistance (Do not double count)= 51
- c) Out of these above, number of host staffs=6
- d) Training/assistance by field

Category	Total	Males	Females
Members/ owners			
Employees	6	5	1
Clients/ Suppliers	45	36	9
Family Members			
Total	51	41	10

1.4 Gender

- What gender roles did you recognize in your host community? Did these roles play a part in your assignment? How?
- How might CRS or the host organization improve opportunities for the women in this host or host community?

1.6 Value of volunteer contribution in \$

- Hours volunteer spent preparing for assignment
- Estimated value of all material contributions volunteer contributed to host during assignment

Value of Volunteer Time Leveraged on Assignment (U.S.\$) = \$450

1.7 Value of hosts' contribution in \$ (Please consult the host as well)

- Meals
- Transportation
- Lodging
- Translation
- Other (Specify)

Estimated Value of Host Contribution (U.S. \$) = \$937

1.9 Host Profile Data:

Did you obtain any data that supplements or corrects the data in the existing host information as detailed in the SOW? Please list it.

1.10 Recommendations for CRS:

Summary

In this intensely-utilized landscape, opportunities for positive change are limited. However, there are some areas where gains might be made. This are

- Replace insecticides with a soap-water spray,
- Promote more intercropping, especially the proven maize/ bean crop combination,
- Increase the amount of pollination across the farm landscape,
- The use of vetiver as barrier/ erosion control structure on intensely cultivated hillsides,



- (5) The use of climbing vine crops, such as the forage producing kudzu or the climbing squash chayote, to exploit underutilized wood fences and hedges as cropping areas and
- (6) Improving the existing traditional agronomic practices instead of bringing new one.

Given the difficulties making improvements in this highly exploited landscape, there are limits to what can be undertaken. Small changes are possible, but this is a landscape where large jumps in productivity should be the norm. Even then, populations may be increasing faster than change can be implemented.