Trellis Fund

FINAL PROJECT REPORT

Institution: Environmental Conservation and Agricultural Enhancement Uganda (Eco-Agric Uganda)

Project Number: 09-002945-47

Project Title: Promotion and expansion of organic tomato growing in Kira Town Council Wakiso District

To:
Peter Shapland
Horticulture CRSP
Department of Plant Sciences
One Shields Avenue
University of California
Davis, CA 95616
pcshapland@ucdavis.edu

<table>
<tr><th colspan="2">Trellis Report</th></tr>
<tr><td>How many farmers were directly engaged and provided new horticultural information as a result of this project?</td><td>Male: 102
Female: 254</td></tr>
<tr><td>How was the extension delivered?</td><td>With support from HortCRSP, Eco-Agric Uganda has implemented a peri-urban project promoting organic tomato production in Kira Town Council, Wakiso district. The project aim is to improve peoples' livelihoods in the area.
The project carried out trainings and demonstrations to impart knowledge and skills. Farmers were trained on tomato agronomy, postharvest handling, marketing and cross cutting issues, that is, gender and climate change. Eco-Agric Uganda ensured adoption of new technologies & practices through demonstrations.
During the mobilization exercise, farmer groups and training venue were identified. A training program indicating the group(s), time and venue for the training was then developed.
Farmers were theoretically and practically trained. Demonstrations on whatever was trained on were carried out at farmers' fields. This gave them hands on opportunity on whatever was theoretically trained. It was during this session that whatever was not clearly understood was clarified. Farmers understood better after each demonstration.</td></tr>
<tr><td>How many farmers adopted new practices as a result of this project?

What practices did they adopt?</td><td>A total of 356 farmers (Male: 102, Female: 254) have adopted different practices and technologies below;
Using drip irrigation to grow tomatoes during dry season
Staking tomatoes to reduce soil contact and improve aeration.
Making organic pesticides and organic manure
Setup of proper/recommended nurseries
Post harvest handling to increase shelf life of tomatoes.
Growing tomatoes on small plots of land including sacks
<table>
<tr><th>Technology/Practice</th><th>No. of farmers</th><th>Male</th><th>Female</th></tr>
<tr><td>Staking Tomatoes</td><td>20</td><td>08</td><td>12</td></tr>
<tr><td>Making organic manure</td><td>32</td><td>08</td><td>24</td></tr>
<tr><td>Making organic pesticide/fungicide</td><td>30</td><td>08</td><td>22</td></tr>
<tr><td>Mulching of tomatoes</td><td>25</td><td>07</td><td>18</td></tr>
<tr><td>Drip irrigation using bottles</td><td>29</td><td>10</td><td>19</td></tr>
<tr><td>Proper/recommended nurseries</td><td>42</td><td>11</td><td>31</td></tr>
<tr><td>Use of disease resistant seed(hybrid)</td><td>168</td><td>46</td><td>122</td></tr>
<tr><td>Post harvest handling</td><td>10</td><td>4</td><td>6</td></tr>
<tr><td>Totals</td><td>356</td><td>102</td><td>254</td></tr>
</table></td></tr>
<tr><td>What were the barriers to</td><td>Lack of easy access to water failed many to adopt the technology of</td></tr>
</table>

adopting those practices that were not adopted?	drip irrigation using bottles and growing tomatoes in dry season when disease incidence is low. Spring wells in valleys are far from homes (0.5 – 1Km). • Some group members don't have land where to do farming. They are just are just renting where they stay. • Incidence of diseases is high irrespective of using the organic fungicide they still strike. This discourage farmers from taking up the enterprise expecting looses when diseases strike. • Termites failed some farmers to stake tomatoes - staking sticks are destroyed. • Hybrid tomato seed is expensive some farmers can't afford it and those that manage to buy some buy few compared to what they would what to plant • Post harvest handling technologies are less practiced because of the little volumes of tomatoes harvested. Whatever is harvested is consumed immediately.
How many farmers were reached via other media formats (radio, television, etc.) as a result of this project?	Some 15 schools were reached through a local agriculture magazine called (Farm Talk) where we made some contributions on business farming and engaging in high value crops enterprises like tomatoes especially for people with small pieces of land.
How many people were directly engaged and provided new health/nutritional information as a result of this project?	Male: 102 Female: 254
How many emails/phone calls were exchanged between the U.S. graduate student and the NGO?	No phone call was made to the graduate student, communication was through emails. Fourteen emails were written by the organization and responded to.
Was the Trellis program useful? Was it useful to connect to a US graduate student? How could we improve the structure of the Trellis Fund? Did your Trellis grant supplement the Work that you are already doing? Is this the type of program we should continue to implement, why?	The program was useful as it propelled the activities/work the organization is doing. It offered technical support and facilitated the organization operations. Research done by the student greatly improved the services offered by the organization since it was based on research. Our farmers learnt new technologies like making pesticides from different plants around them, making different forms of organic manure and refreshed their minds about the technologies they knew like composting. Farmers' livelihoods have also improved; each family is able to eat enough tomatoes compared to the few they used to buy. Some farmers have been able to earn some money from sale of the tomatoes (For the first planting; Mrs Miniina from her 50 tomato plant, earned sh 164,000/= ($ 66.9), Mrs Disan from her 150 tomato plant, earned sh 421,000/=($171.8) irrespective of what they eat and given out to friends

	The graduate student helped us a lot. She helped us diagnose nutritional deficiency for two farmers and when they applied liquid manure, the problem greatly reduced. She also helped us to establish the cause of tomato wilt experienced by farmers that the disease was tomato blight not Tomato Bacterial Wilt Disease as originally thought and was controlled. Further consultations with Garland made us understand the circumstances under which Tomato Bacterial Wilt Disease & tomato blight diseases occur. She also provided a differentiation diagnosis between the two diseases. Her advice in other areas of tomato agronomy helped further to improve the health status of tomatoes. If the student is able to come to the fields, he/she would do better research as he/she will have a better understating of the problems. Seeing is believing and people learn better and faster when they see. If Trellis Fund could support exposure visits, it would give a mile stone to our activities. Farm inputs like improved seeds are expensive and farmers fail to adopt whatever has been trained on because of this. If Trellis Fund can support farm inputs, the adoption would greatly increase. Trellis Fund supporting organization staff to attend refresher course either from their countries or in US would greatly improve on the organizations' human resource capacity. Eco-Agric Uganda staff was supported to attend a workshop on Irrigation organized by Trellis in MUZARD, this has improved our capacity in line with irrigation. It also increased our network with other organizations that we got connected to during the workshop. Trellis grant greatly supplemented our livelihood improvement programs. Using the agronomic practices farmers learnt for tomato growing like; nursery establishment and management, soil fertility improvement and pests and disease control, they are now able to grow other horticulture crops. Therefore, the organization wishes that the program continues.

MAJOR CHALLENGES ENCOUNTERED

The following were the major challenges faced during the project implementation. They greatly affect farmers discouraging them to go on with the enterprise of tomato growing:

1. Diseases and pests incidences. A lot of diseases and pests attack tomatoes causing great loss to farmers. Some diseases and pests fail to respond to some organic chemical prompting to use the inorganic chemicals though still some diseases fail. Other diseases like BWD are soil born with no chemical remedy apart from cultural practices which are not very effective and nothing much can be done when the disease strike.

2. Easy accessibility of water for watering/irrigation is difficult. Water is in valleys and far from farmers' gardens. For those that can access the water, equipment for irrigation are not easily got, they are also expensive. This makes it difficult to grow tomatoes during the dry season when disease incidence is low and the market for tomatoes is high.

3. Hybrid tomato seed have proved to better performers irrespective of the challenges. However, farmers cannot easily get seeds because they are expensive and Eco Agric Uganda cannot afford buying enough seed for the farmers to satisfy the demand.

PICTORIAL PRESENTATION OF ORGANIC TOMATO GROWING PROJECT

Different training sessions

Planting in the nursery

Established tomato garden

Hort CRSP staff Peter and Elana visit farmers gardens

Ms Debra explaining to the visitors her locally made pesticide

Mr Sharpland and Ms Elana after receiving part of the farmers' harvest to express their appreciation to Hort CRSP support to them.

Intercropping of tomatoes with other fast growing vegetables to maximally utilize the small piece of land.

Farmers convene for their saving scheme weekly meeting. In between is the grey metallic money safe box.