Virginia State University

Farmer to Farmer Program in East Africa

"Help Increase Farm Income"

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ACRONYMS

ACDI/VOCA	Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance
ADLI	Agricultural Development-Led Industrialization
AI	Artificial Insemination
AMAREW	Amhara Micro-enterprise development, Agricultural Research, Extension, and Watershed management
ANRS	Amhara National Regional State
ARARI	Amhara Regional Agricultural Research Institute
BEAT	Business, Environment, Agriculture and Trade
BFALRC	Bahir Dar Fish and Aquatic Life Research Center
CIDA	Canadian International Development Agency
DLS	Diffused Light Store
EBA	Ethiopian Bankers' Association
EDDP	Ethiopian Dairy Development Program
ESGPIP	Ethiopian Sheep and Goat Productivity Improvement Program
FAO	Food and Agriculture Organization
FtF	Farmer to Farmer
GDP	Gross Domestic Product
GIS	Geospatial Information Satellite
GLAD	Guraghe Livelihood and Agricultural Development
GPS	Global Positioning Systems
HACCP	Hazard Analysis and Critical Control Points
ILRI	International Livestock Research Institute
IPMS	Improving Productivity and Market Success
ISP	Integrated Strategic Plan
LOL	Land O'Lakes
LU	Langston University
M&E	Monitoring and Evaluation
NAHDC	National Animal Health Diagnostic Center
NGO	Non-Governmental Organization
PMP	Performance Monitoring Plan
PVAMU	Prairie View Agricultural & Mechanical University
SDPRP	Sustainable Development and Poverty Reduction Program
SPS-LMM	Sanitary and Phyto-Sanitary – Livestock and Meat Marketing
USAID	United States Agency for International Development
VSU	Virginia State University
WARDO	Woreda (District) Agricultural and Rural Development Office

1. EXECUTIVE SUMMARY

In 2003, Virginia State University was awarded a Cooperative Agreement to implement a five-year Farmer to Farmer East Africa (Ethiopia and Eritrea) project, with ACDI/VOCA as a sub-grantee. But ACDI/VOCA fielded only three volunteers before the agreement was terminated. The mandate of VSU's FtF was initially to provide support to Ethiopia and Eritrea in natural resources management and agricultural services development through the provision of technical assistance of 82 volunteers by the end of the five year program.

Until the termination of USAID's activities in Eritrea in September 2005, 10 and 4 volunteers were fielded in both Agri-Service Development and Farm Diversification focus areas in Ethiopia and Eritrea, respectively. The entire project activities and funding was then channeled to the Ethiopian program and the program's focus was revised through a series of consultations with USAID/Ethiopia and various projects funded by the USAID/BEAT office. In FY 06, 07 and 08, the program focused on horticulture, livestock (animal production, dairy, feed, and health as well as aquaculture and fisheries), and agricultural financing. The project focused mostly on processing and marketing activities that have profit potential and where the volunteers are more likely to have the most positive impacts

During the life of the project (FY 2003 – FY 2008), a total of 70 volunteers were fielded for 58 assignments and spent 1318 volunteer days in five focus areas. Sixty six of the volunteers (94.3%) were fielded in Ethiopia. The agricultural service development and farm diversification focus areas were emphasized in the first two years of the project to support the public sectors in Eritrea and Ethiopia in which 4 of the 14 volunteers fielded in 2004/05 were for Eritrea, completing a total of 126 volunteer days. In the last quarter of 2008, one volunteer was assigned in Ethiopia to work on agri-service development. After the change in focus areas to horticulture, livestock and agricultural credit and finance, all the remaining 55 volunteers were fielded in Ethiopia. The livestock focus area had the lion's share where about 53% of the volunteers completed nearly the same proportion of the assignments.

Volunteer professional time was estimated to worth 620,475.00 USD during the program's life time. Total program expenditure for the five years was about 1,249,581.00 USD with a mean program cost per volunteer day of about 948.00 USD. The hosts contributed a little more than 10,000.00 USD which is relatively low since the contributions of those partners that run USAID funded development programs are not included. Volunteers' time spent in preparing for the assignments in the US was estimated to be about 105,000.00 USD. Most volunteers were fielded in Technology Transfer and Business/Enterprise Development areas providing mainly information and input (preproduction) and marketing support services in the commodity chain. During the life of the program, there were over 9000 direct beneficiaries of which 8% were

female and about 1200 individuals with 15% female received trainings. The indirect beneficiaries were estimated to be over 8 million people.

The full economic impact of the program can not be reported here as some of the recommendations made by volunteers will take time to yield economic benefits. However, from the sample survey made in February, 2008, the gross sale from assisted potato producers in the Amhara Region (AMAREW project area) in FY07 and strawberry commercial farms in the rift valley in FY08 amounted to 35,708.00 USD. Similarly in livestock, the reported gross sale of 51,100.00 USD came mostly from sale of inputs (feeds, drugs, and AI services) after VSU-FtF training on Agri-Business Development in FY07 & 08. VSU-FtF's contribution is estimated to be 40% of these gross sales, based on the amount of time spent with the hosts.

Most of the volunteers' support (about 59% of the assignments) to hosts was channeled through various USAID development programs in Ethiopia, (AMAREW, LOL, ESGPIP, SPS-LMM and FINTRAC).

Volunteers' outputs included preparation of reports on their assessments of activities of hosts and provide recommendations that improve productivity and enhance sells by adding value to their products. These reports were distributed to the hosts and partners for implementation and to USAID-Ethiopia Mission for follow-up. Another area of volunteers' output was providing hands on trainings to cooperative members, individual farmers, development agents, technicians, feed and processing plant workers, managers, and credit and loan officers. Many volunteers distributed training materials to trainees and some supplied operational manuals in hard and electronic copies. A few volunteers brought some simple tools for demonstration purposes during the training and for donations to the hosts and partners. All volunteers gave seminars to partners and/or hosts on their observations and the various options they were recommending in order to improve the productivity and income of the producers. At the end of their assignments, the volunteers also debriefed the USAID-Mission.

The technical assistance of volunteers has resulted in tangible outcomes. These include, improved service delivery of agricultural cooperatives to members and improved market access. Improving the business capacity of selected input suppliers in horticulture and livestock production also yielded significant outcome.

Another area of outcome with respect to agricultural financing is the improvement in the efficiency of service delivered by financial institutions to agri-business operators and increased agri-business credit portfolio of financial institutions.

In the capacity building area, the major outcome include improving service delivery by cooperative extension agents to indirect beneficiaries (small holder farmers) through farmers training centers and improved service delivery of agricultural education institutions to direct beneficiaries.

Over VSU-FtF's project implementation period, volunteers have contributed significantly to improved livelihood of small producers. A livestock feed dealer, Sanford Legesse, who had never received formal training in the fundamentals of optimal feed rationing and balancing, learned how to formulate feed to satisfy different dairy categories – heifers, milking cows and calves; and how to formulate new products such as mineral blocks.

In another area, businesses of small-scale private animal health care providers were improved after the provision of small business management training. A Farmer to Farmer volunteer advised them to reduce price mark-up to 10 percent and focus on maximizing volume of sales rather than profit per unit which has resulted in increased customer base and hence increased sales of veterinary services.

One significant success of VSU-FtF project was in potato production. Volunteers fielded in Amhara Regional State advised farmers on sowing methods, plant spacing, top dressing (fertilizer application methods), curing the potato seed by removing the upper part of the plant, compost preparation from potato residuals, and post harvest (storage management). As a result, productivity increased by up to 288% per acre in some farms. Because of volunteers' interventions, the number of seed potato growers, which was non-existent before, rose to 35. The availability of quality seed potato significantly impacts the production system in the region.

Farmers had difficulty in managing backyard fish pond farming with regard to feeding and stocking. A volunteer advised farmers about pond management systems including stocking techniques, fertilizing, controlling pond turbidity by planting seedlings, and integrating fish farming with other agricultural activities. This advice was instrumental in improving farmers' fish farming in generating income and as well as food security.

Improved compost making technique has contributed to an increase in income of small-holder dairy farmers. By using compost in forage development activities, farmers were able to reduce feed cost thereby improving their revenue from sale of milk by 12%.

The above are just a few examples and many more have benefited from the program. One of the lessons learned in implementing the program was that FtF program needs its own M&E person to follow the implementation of the recommendations given by volunteers and gather data for the changes made and impacts obtained. The M&E person should be highly mobile to reach the various project sites as frequently as needed.

As a strategy, working with partner organization relieved FtF from the hard task of identifying hosts and the logistics of fielding volunteers to the sites. Such partnership helped to accomplish the tasks of both partners with a minimum cost. However, there should be a functional system of sharing data and other information relevant to each others' responsibility. These arrangements should be put in writing before the start of the partnership.

2. OVERVIEW OF EXPERIENCES

Ethiopia has an estimated 77 million people of which 80% depend on agriculture for their livelihoods. The agriculture sector contributes close to 50% of the Gross Domestic Product (GDP) of the country. However, the poor performances of the sector in the past and slow rate of development in the present time have become an issue and are sources of major concerns to the government, NGOs and the international development partners. Average cereal yields are low, generally less than a ton per hectare. Livestock productivity is lower than most other countries in sub-Saharan Africa. The use of improved agricultural technologies is limited. Consequently, average per capita income is estimated at one hundred USD per annum with about 45% of the rural population living on an income below the poverty line of one USD per day.

The country possesses diversified agro-ecologies with suitable climatic conditions for the production of high quality and large quantity agricultural crops of various kinds. Ethiopia is also home to the largest population of cattle in Africa. Since agriculture is the backbone of the Ethiopian economy, the economic growth of the country hinges upon the development of the agriculture sector. This is clearly articulated in the national economic policy known as Agricultural Development-Led Industrialization (ADLI), which the government of Ethiopia has vigorously embarked upon. Food security, sustainable agriculture, and trade are given high priority by the government as well as other development partners. To register sustained agricultural growth, there has to be increased availability of technologies, farm inputs, and services on the one hand; and on the other hand a sustained demand for the agricultural outputs must be developed. Equally important is the linkage between producers, processors, marketers and distributors, who are often disconnected in Ethiopia.

In accordance to the UN Millennium Development Goals, the government of Ethiopia is committed to achieving food security and reducing poverty by 50% by the year 2015. Considering the agricultural potential the country possesses Ethiopia's chance of success to achieve the Millennium goal is believed to be through agricultural development. However, despite the huge efforts by the government and non-governmental development partners to transform Ethiopia's agriculture into a modern more productive and efficient system, the country's agriculture remains by-in-large a smallholders peasant agriculture with traditional production systems. Such system is usually constrained by numerous factors including knowledge, appropriate technology and capital resources. This requires an overhaul of the total system, which requires strong policy support and huge investment. Although, currently, there are some encouraging moves towards the development of the agriculture sector into a more productive commercial enterprises, the effort is by far limited to certain produces such as flowers, a few horticultural and fruit crops and livestock. It is with this background that VSU-FtF program has been operating in Ethiopia in order to help accelerate the development of the sector into more productive and market oriented enterprises.

Virginia State University (VSU) was awarded a Cooperative Agreement to implement a five-year (2003-2008), Farmer to Farmer (FtF) – East Africa (Ethiopia and Eritrea) Program to provide support to the Ethiopian and Eritrean small holder farmers in farm diversification and agricultural services development through the provision of volunteer technical assistance activities.

The overall objective of the VSU-FtF Program was to contribute to improved agricultural productivity and income of small Ethiopian and Eritrean agricultural producers by developing sound agribusiness opportunities. This objective was addressed by tackling challenges across the entire value chain. The project focused mostly on processing and marketing activities (with in focus areas) that have more profit potential and where the American volunteers are more likely to have the most positive impacts.

Fielding volunteers began towards the last part of 2004 to assist the activities of the agriculture ministries of both countries in areas of agricultural service development and farm diversifications. However, following the closure of USAID's Mission in Eritrea in 2005, the program was limited to Ethiopia in the last three years, and was amended to make the focus areas specific while maintaining the overall goal of the project, increase the income of agricultural households. As the result, the main focus of the program in the last three years became livestock, horticulture and market development. Since marketing was dealt with the respective focus areas (horticulture and livestock) the market development focus area was changed to agricultural credit and finance.

After a slow start, the VSU's FtF activities moved at a relatively fast rate in the last three years towards achieving the proposed goals of fielding 82 volunteers by the end of the project. However, USAID froze funding for a short time in FY 2008, interrupting the development of SoWs, recruiting and fielding of volunteers. Funds were released again after few weeks and VSU was able to field volunteers until August 17, 2008.

3. SUMMARY OF MAJOR OUTPUTS AND ACCOMPLISHMENTS

Accomplishments: During the life of the project (FY 2003 – FY 2008), a total of 70 volunteers were fielded for 58 assignments (But the number of assignments presented in the LOP Tables were equated to the number of volunteers). The volunteers spent a total of 1318 volunteer days in the five focus areas (Table 1a, Annex 1), which is further summarized in Table 1 below. Sixty six of the volunteers (94.3%) were fielded in Ethiopia. Some of the assignments were completed by teams of two volunteers and one assignment on agricultural service in Ethiopia was completed by a team of four volunteers. All volunteers were U.S. citizens and they came from 29 States as well as from two other countries (Table 2, Annex 1).

Table 1: Summary of volunteers and assignments by focus areas FY 2003-2008.

Focus areas	No. Volunteers	No. Assignments	No. of Volunteer Days completed
Agricultural Service	8	5	186
Farm Diversification	7	6	156
Horticulture	11	11	214
Livestock	37	31	648
Ag, Credit & Finance	7	5	114
Total	**70**	**58**	**1,318**

Most of the volunteers' support (about 59% of the assignments) to hosts was channeled through various USAID development programs in Ethiopia, (AMAREW, LOL, ESGPIP, SPS-LMM and FINTRAC) (Table 2). This was in line with strategic goal set for the FtF project in Ethiopia.

Table 2: Summary of assignments completed by partners/host FY 2003-2008.

Focus areas	No. of assignments completed under each partner/host							
	AMA-REW	LOL	ES-GPIP	SPS-LMM	FIN-TRAC	IPMS	EBA	Gov./ Coops
Agricultural Service	-	-	-	-	-	-	-	5
Farm Diversification	-	-	-	-	-	-	-	6
Horticulture	6	-	-	-	2	1	-	2
Livestock	8	12	4	2	-	4	-	1
Ag. Credit/ Finance	-	-	-	-	-		5	
Total	14	12	4	2	2	5	5	14

The agricultural service development and farm diversification focus areas were emphasized in the first two years of the project to support the public sector in Eritrea and Ethiopia in which 4 of the 15 volunteers fielded in 2004/05 were for Eritrea, completing a total of 126 volunteer days. After the change in focus areas to horticulture, livestock and agricultural credit and finance (also known as 'Market Development', 'Agricultural Marketing and Financing' or 'Credit Development/Banking' in previous reports), all the remaining 55 volunteers were fielded in Ethiopia and about 63% of the volunteers were fielded in the last two years of the program (Table 1a, Annex 1). The livestock focus area had the lion share where about 53% of the volunteers completed about the same proportion of the assignments.

Values of volunteers professional time was estimated as a product of volunteer days by 470.77 USD per volunteer day (the rate agreed before). Based on this estimate, a total of 620,475.00 USD was spent as volunteer professional time during the program (Table 1b, Annex 1). Total program expenditure, as of now, is estimated to be 1,249,581.00

USD, which may change later when all the expenses are tabulated. Estimated program expenditure per focus area per year was determined by dividing total expenditure by the total number of volunteer days and then multiplied by the number of volunteer days completed in the respective fiscal years and focus areas (Table 1a, Annex 1). The over all average program cost per volunteer days was about 948 USD. Resources leveraged by the grantee/volunteer were estimated to be about 105,000.00 USD (Table 1b, Annex 1). This was determined as the product of average number of hours volunteers spent at home (in USA) preparing for the assignment (25 hours/volunteer) by the average value of the rate per hour (60 USD/hour). These averages were calculated from those volunteers reported the number of hours they spent on preparing for the assignment and the rates per hour they indicated if they were to be paid. The host contributed only a little more than 10,000.00 USD. The contributions of those partners that run USAID funded development programs are not included in the 10,000.00 USD sum. Most volunteers were fielded in Technology Transfer and Business/Enterprise Development areas providing information and input (preproduction) and marketing support services (Tables 3a & 3b, Annex 1). Cooperatives/associations and individual private farms are the major types of host institutions that have received most of the volunteer services (Table 4a, Annex 1). During the whole period of the program some 9243 people (7.8% female) were direct beneficiaries and 1281 people (15% female) were beneficiaries receiving trainings (Table 4b, Annex 1). Estimation of indirect beneficiaries was very much subjective and challenging. Most volunteers were unable to give any estimation of indirect beneficiaries given that they have limited knowledge of the direct beneficiaries'. In such a case, the field staff, in consultation with partners or hosts have made reasonable estimation considering the number of other cooperative members (not directly trained by volunteers) or average family members of individual farmers. It was estimated that over 8 million small holder farmers, cooperative/association members, pastoralists, agribusiness owners and private enterprises and their associates could indirectly benefit from the program (Table 4b, Annex 1).

The full economic impacts of the program (Tables 5&6, Annex 1) could not be reported at full at this time. Most of the assignments (about 63%) were fielded in the last two fiscal years of the program and some adopted recommendations will require an extended period to show impact. In addition, eight volunteers were fielded during the last three months (June, July and August, 2008) of the project not allowing enough time to measure impact. However, with sample surveys made in the Amhara Region (AMAREW project area) on February, 2008 and a some data obtained from LOL, some impact information are presented in Table 5, Annex 1.

The gross sale from assisted potato producers in the Amhara Region (AMAREW project area) in FY07 and strawberry commercial farms in the rift valley in FY08 amounted to 35,708.00 USD. The contribution from sale of strawberry was 3,233.00 USD. Similarly in livestock, gross sale of 51,100.00 USD was reported mainly from sale of inputs (feeds, drugs, and AI services) after VSU-FtF's training on Agri-Business Development in FY07 & 08. The livestock sale included first year sale of fish from backyard pond amounting about 60.00 USD in Amhara Region (AMAREW project area). Such increased gross sale was, however, obtained in collaboration with other stakeholders,

mainly the partners. VSU-FtF's contribution is estimated to be 40% of these gross sales, based on the amount of time spent by volunteers with hosts.

Volunteers' outputs: Volunteers' outputs included preparation of reports on their assessments of activities of particular farmers' production and marketing cooperatives, feed or dairy processing plants or financial institutions. Comprehensive recommendations are given in the reports that will improve the productivity, and enhance sells by adding value to their products for better economic income of the small holder farms or agribusinesses. These reports were distributed to the hosts and partners to be implemented and to VSU-FtF staff and USAID-Ethiopia mission for follow up.

Volunteers also provided hands on trainings to cooperative members, individual farmers, development agents, technicians, feed and processing plant workers and managers, and credit and loan officers. These trainings were designed, based on the constraints identified along the value chains. The trainings were meant to transfer knowledge on new and appropriate methods of operations that enhance productivity and income of small holder farms and farm businesses. Many volunteers distributed well prepared training materials to trainees and some supplied operational manuals in hard and electronic copies. Simple designs for feed processing, potato storage etc. were also developed by volunteers and distributed to hosts and or partners. Some volunteers brought some simple tools for demonstration purposes during the training and for donations to the hosts and partners.

All volunteers gave seminars on their observations during their assignments and on the various options they were recommending to improve the productivity and income of the producers. At the end of their assignments, the volunteers also debriefed the relevant officials in the USAID-Mission about their assignment and findings.

Major outcomes: Major outcomes include improved service delivery by agricultural cooperatives to members and improved market access of livestock products by target groups. For instance, Hibret dairy cooperative in Addis Ababa started the provision of animal feed to its members after they received training in agri-business management. Adaa's dairy cooperative started male calf disposal linking the farm to market after they received training on feed management by a VSU FtF volunteer. Improving the business development capacity of selected input suppliers in the areas of horticulture and livestock production was also a significant outcome.

Pursuant to the request of the USAID Mission in Addis Ababa, four FtF volunteers were fielded in January, 2005 and produced an assessment report on sheep and goat production and marketing in Ethiopia. Based on this assessment, a USAID funded 7 million USD project was launched by Prairie View Agricultural & Mechanical University (PVAMU) and Langston University (LU). The project is entitled, "Ethiopia Sheep and Goat Productivity Improvement Program" (ESGPIP). It has been in operation since September, 2005, with the technical support of these universities and in partnership with the Ethiopian Ministry of Agriculture. The two volunteers, Dr. Freddie Richards and Dr.

Tilahun Sahilu are currently serving as technical directors, representing PVAMU and LU, respectively. Dr Goeshe, the other volunteer, came for a short term technical assistance to the program during March 1-18, 2008.

The goal of ESGPIP is to improve small ruminant productivity and marketing practices through transfer of knowledge and technologies. These include production practices, introduction of improved genotypes and improved health status. Activities have been carried out in 26 selected Weredas (districts) in six regional states (Amhara, Oromiya, Tigray, Somali, Afar, Southern Region). The project is in its third year of implementation (2006-2008). So far 1050 kebele development agents (KDAs) have been trained and 14 technical bulletins and a handbook have been published for targeted beneficiaries. Improved sheep and goat breeds were imported from South Africa. The Dorper sheep (101 Ewes, 18 Rams, 18 male lambs and 18 female lambs) are now being kept in Somali and Afar regional states while the improved Boer goats (90 Does, 14 Bucks, 5 male Kids and 3 female Kids) are being kept in Oromiya and southern regions. They were kept under quarantine before being distributed to the regions. They will soon be mated with selected local sheep and goats from the respective regions. So far ten goat crossbreds (cross between improved and local types) are under test by small producers in the southern regional state but a large number of crossbreds representing the different regions are expected to be distributed to selected small producers in the coming months.

Outcomes in the agricultural financing area include improvement in the efficiency of service delivery of institutions to agri-business operators as well as the increase in agri-business credit portfolio of financial institutions.

In the capacity building area, the major outcome include improving the service delivery by cooperative extension agents to indirect beneficiaries (small holder farmers) through farmers training centers and improved service delivery of agricultural education institutions to direct beneficiaries.

Major overall successes: Volunteers have contributed significantly to improved livelihood. In the animal feed aspect, as a result of training in feed rationing and balancing, Ethiopian livestock feed dealer Sanford Legesse, who had never received formal training in the fundamentals of optimal feed rationing and balancing, learned how to formulate feed to satisfy different dairy categories – heifers, milking cows and calves; and how to formulate new products such as mineral blocks. As a result, he increased his gross sales by 41% and his net profit by 29% in just six months. The net effects of Sanford's successes were that he was able to pay school fees for his two children and bought a television set for his family. He also created employment opportunities to three jobless youngsters from his rural community. For this noble gesture, he was recognized by the local community.

In another area, small-scale private animal health care providers were made sustainable under the provision of small business management training. Most of the veterinarians had difficulty in pricing practices and discovered that they marked up

products by 25%. The resulting high prices were making it difficult for veterinarians to attract buyers in competition with black market suppliers. Volunteer Jerry Nolte advised them to reduce price mark-up to 10% and focus on maximizing volume of sales rather than profit per unit. They were also advised that increasing customer base would enhance sales of veterinary services. Nolte also suggested that veterinarians should join with other vendors to buy supplies in bulk in order to reduce transportation expense and qualify for bulk discounts.

One significant success of VSU's FtF volunteer program is in the area of potato production. Potato growers had difficulty managing a diffused light store. This has led to insufficient potato production and difficulties in securing other food items from the market due to lack of cash income. Potato production increased as a result of volunteers' advice about sowing methods, plant spacing, top dressing (fertilizer application methods), curing the potato to prevent rotting, compost preparation from potato residuals and post harvest (storage management). Diffused light will keep seed potatoes safe for up to six months. As a result, potato production per acre has increased by 288% in some farms.

Farmers in the Amhara region had difficulty in feeding and stocking fish in backyard ponds. Fish farming is a key component of agricultural diversification in this region. A volunteer fielded in the Amhara region provided advice on pond management including stocking, fertilizing, controlling pond turbidity by planting seedlings, and integrating fish farming with other agricultural activities. This advice was instrumental in improving fish farming as well as generating income and food security to many families.

Compost making is an integral part of agriculture and natural resource management. Volunteers introduced new techniques that enabled farmers to use straw effectively as a fertilizer and forage. This led to increased gross revenue from 0.17 to 0.19 USD for a liter of milk. Similarly, net cash profit per lactating cow per day has increased from 0.67 to 1.13 USD.

Volunteers outreach: Although many volunteers indicated in their reports that they would carry some outreach activities when they returned back to the US, only the activities of 21 volunteers could be accessed by the field staff with questionnaires distributed to all volunteers (Table 7 Annex 1, Annex 4). A total of 29 activities which are mostly press releases (8) and presentations (21) are reported. Some of these volunteers did more than several outreach activities and they are summarized below. Those reported as press releases are mostly publications in different newspapers and magazines.

- **Kenton Ayers** gave a talk, related to his assignment in Ethiopia under VSU's Farmer to Farmer project, to 68 people in December 2004. The title of his talk was ***"US AID's Farmer to Farmer Help in Ethiopia".***

- **Roger Knutzen** published an article entitled *"**Ethiopian potato project opened his eyes to what America is doing**"* in a July-August, 2006 issue of "**Potato**

Country". He mentioned that his volunteer work was a time well spent because he believes that he has helped farmers put together an infrastructure that will eventually help them to make it on their own. He described what he has achieved during his stay and concluded by extending his invitation to people interested in helping the Ethiopia's development effort.

- **Joe Guenthner** has shared his experience by publishing an article entitled ***"Guta from Gojo, Ethiopia".*** The article was published in two magazines - **Aardappelwereld** and **Spudman** which were released in June, 2006 and July, 2006, respectively. Four thousand people are expected to read both the magazines. **Guenthner** explained how the life of the potato farmer, **Guta** and his family, has changed by producing and selling seed potato. In his own words **Guenthner** said "Now he has an established potato farm, a wife - Zenebech Berhanu, and a nice home with a television, a rarity in Ethiopia"

- **Mike Tierney**, provided assistance to the recruiter, **Mary Albrecht**, by delivering a speech to members of Engineers Without Borders, University of Wisconsin, chapter at Madison. As the result, four engineers volunteered for Alternative Energy assignments of LOL in 2008. Prior to this, he spoke to about 300 people at the energy fair in Amherst, Wisconsin on FTF opportunities in Alternative Energy in 2006.

- **Brian Nerrie** gave a talk under the title "**Aquaculture in Ethiopia**" on October 20, 2006 to about 20 faculty members of Virginia State University.

- **Judy Moses** and her husband **Larry Jacoby** presented information on Ethiopian sheep and goat production before 100 Wisconsin Sheep and Goat Association members in January 2007. Since they have extensive experience with Orthodox Ethiopians in the Minnesota sheep and goat market, the audience was very interested in their insights on sheep and goat production in Northern Ethiopia.

- **David Kappelman** made a power point presentation, with pictures and commentary, on the status of agriculture and life in general in Ethiopia to a group in October 2007. Also published an article **"A unique opportunity"** on a November, 2007 issue of the Newsletter called **Wisconsin Banker**. He made a description of the assignment scope of work, what was done, along with a request for future volunteers. This is what he has to say at the end of the article **"**It is one of the oldest countries in the world. From the rich heritage of Ethiopia and from the warmth of its people, I received much more from this assignment than what I gave. I left with 30 plus new Ethiopian friends, 30 plus email addresses, generous and heartfelt gifts, and an open invitation to return. I also left with a permanent mark of gratitude in my inner being for the magnitude of our personal, political, religious and economic freedoms that I have always taken for granted. I will return to Ethiopia someday…despite the vaccination requirements**"** In fact Kappelman came back for a second assignment and stayed in Ethiopia

from 2-16 August, 2008. He also spoke about the FtF program in front of 600 bankers on October 29, 2007.

- **Don Hutzel** made a presentation entitled **"Ethiopia - It is not what you think"** to 50 people belonging to Tiffin, Ohio Rotary club on November 21, 2007 and to 75 people of Tiffin, Ohio Kiwanis club on November 29, 2007. He spoke of all his observations in Ethiopia including all the unique characteristics of the country, but especially emphasized the professional purpose for his presence in Ethiopia. **Don** also published an article**-"Ethiopia Visit**" on a newsletter known as "**Accelerated Genetics sales scope"**

- **Steve Oberle** made a presentation entitled **"An assessment of overgrazing and land conservation/protection issues in the Amhara Region of Ethiopia"** to a number of audiences in summer and fall of 2007. He made the following remark in his response to a questionnaire sent from VSU-FtF program. He said, **"**I very much enjoyed my assignment – thanks much for the opportunity! Please keep me in mind for future assignments back to Ethiopia**"**

- **Charles Higgins** made power point presentation to Wisconsin Rotary Club in which he introduced the potential and prospects of potato production in Ethiopia. He appealed for technical and financial support to train a tissue culture specialist from Ethiopia which seem to be effective soon.

- **Mary Albrecht**, as a result of the contact she made with the University of Wisconsin—Madison, Dr. David Hoer has agreed to work on improving the hand baler during fall of 2008. Mary will be a keynote speaker at Colby FFA Banquet in February, 2009. She has been asked to talk about FtF.

- An article entitled ***"Avondale's official helps Ethiopian bankers develop plans, policies"*** appeared in the **Arizona Republic** in August 26, 2008 in which **Claudia Whitehead** discussed her experience as an FtF volunteer helping the Ethiopian Bankers Association. She expressed her experience of visiting Lalibella, a historic land mark in northern Ethiopia and said, **"**I would like to go back. There is so much history there. Coffee originated there in Ethiopia. They have a whole coffee ceremony that is a tradition in the country. Coffee is a big thing.**"**

- **Braxon Kinsey, Ryan Anderson** and **Ken Koers** will present information on alternative energy for milk cooling to their local chapters of Engineers Without Borders this fall when school resumes.

- **Dave Kappleman** and **James Raymond** plan to write an article this fall for the Wisconsin Bankers Association newsletter on their experience on agricultural lending issues in Ethiopia.

- **Dave Wagner** is finalizing writing a book "**Unpaved Roads**" on his experiences volunteering with Farmer-to-Farmer. His new book will be published in 2009.

- **Roger Knutzen** has been working with the Washington State Potato Council to send a gift of clean seed potatoes to Ethiopia. The Amhara Regional Research Institute is following up the matter.

- **Dan Theisen**, University of Maryland, Fish Hatchery Department, incorporated FtF information into his fish production class.

- **Robert Albrecht** carried out the following outreach activities with about 45 people in attendance at each encounter.

  1. On December, 2006, **Albrecht** gave a power point presentation, to Parish Council of Catholic Women (PCCW) Annual Meeting, on Dairy production, Orthodox fasting habits practiced by Ethiopian Orthodox Church followers, and its implication on marketing dairy products in a country where everyone over 10 fasts about 180 days per year. The members of the PCCW gave a $100 donation and 20 backpacks for providing school supplies for elementary children living in Ethiopian rural areas.
  2. In September 2007, spoke at the University of Wisconsin chapter of Engineers without Borders, to discuss Farmer-to-Farmer projects that could be carried out by senior engineering students, especially in the area of alternative energy for cooling milk. This led to four senior engineering students with membership in Engineers without Borders volunteering for two Land O 'Lakes alternative energy projects in July, 2008.
  3. January, 2008 spoke at an international dinner meeting for the University of Wisconsin, Marathon County, Wausau, Wisconsin discussing FTF volunteer opportunities and utilizing power point presentation to show different aspects of rural life and dairy production in Northern Ethiopia.
  4. Fall semester of 2007 **Albrecht** collaborated with **Dr. Hoerr** of University of Wisconsin, School of Engineering, to present a technology problem faced by many farmers in third world countries in East Africa. Three problems were presented. The first project was developing a stationary silage-chopper, the second was improving a manual oil press and the third was developing manual hay baler. The engineering class worked on the first two problems and built an oil press and a silage chopper. **Dr. Hoerr** has decided to tackle this problem and his class will work on improving the hay baler in the fall semester-2008. **Albrecht** plans to meet with **Dr. Hoerr**, to discuss the problem in great detail. The final product, blue prints and other information will be sent to LOL in Ethiopia in December, 2008.

4. SUMMARY OF WORK BY FOCUS AREAS

Agricultural service development and, rural livelihoods and farm diversification were the two focus areas implemented in FY 2004 and 2005 in both Eritrea and Ethiopia. There were four volunteers, instead of three, as reported in previous annual and semi-annual reports, who have conducted four assignments in Eritrea (two agri-service developments and two in farm diversification focus areas). The discrepancy may have been created because one volunteer who conducted two assignments was reported as one instead of two.

On the other hand, two volunteers (**Dave Wagner & Monte Bell**) whose names were missing in the previous reports are now included in this report (Annexes 7&8), raising the volunteers number fielded in Ethiopia for rural livelihoods and farm diversification focus areas from 3 to 5. It has also been realized that there were 5 instead of 6 volunteers fielded during 2004 and 2005 under agri-service development focus area in Ethiopia and this change has been made.

All the assignments in Eritrea and most in Ethiopia, under the two focus areas, were with government institutions in the area of capacity building. **Monte Bell** and **Dave Wagner**, fielded by ACDI/VOCA, have not been included in the list and the type of activities they conducted and recommendations they forwarded have been reported in the past. This information is included in this final report.

4.1 Agricultural Service Development Focus Area

The objective of volunteers` assignments in the Agricultural Service Development focus area was to build and improve capacity of cooperative, extension, educational institutions and diagnostic laboratories.

Result of a need assessment conducted by USAID/Ethiopia in 2000 indicated that overall Ethiopia's agricultural research and extension system is one of the best in Africa and can still benefit from selective capacity building efforts. The contrast between a relatively good extension service and chronic food insecurity indicated that the issue for extension was not lack of knowledge in production agriculture or inadequate delivery systems to disseminate that knowledge. Rather, the issue appeared to be that the extension system lacks an adequate client-driven focus. A similar assessment conducted in Eritrea has determined that the extension system in Eritrea had not yet succeeded in creating effective linkages among farmers, extension service, agricultural research and education personnel.

Furthermore, it has been envisaged that the overall quality of education can be enhanced through the agricultural education systems. The leading agricultural university, Alemaya (now called Haramaya) University in Ethiopia, had proposed adding several additional programs to undergraduate and graduate curricula. Similarly, the

leading agricultural university in Eritrea, the University of Asmara in conjunction with the Ministry of Agriculture (MoA) had begun an agricultural graduate studies at Halhale. Linked to the outreach and education is the capacity of the diagnostic laboratories. A USAID assessment team found that the national veterinary institute's capacity in Ethiopia is very inadequate, as did an earlier assessment of regional laboratories by ILRI personnel. FtF's partnership had ties to the Ethiopian MoARD and Eritrea's MOA, the University of Asmara, Alemaya University; and associated diagnostic/service laboratories through which capacity building and educational opportunities could be implemented.

Therefore, the thrust of the FtF volunteer placement initiative was to facilitate the programmatic process within extension, universities and diagnostic laboratories, and build long-term capacity into the systems. Due to early exit of the FtF program from Eritrea and change in focus areas, only two assignments were carried out under the Agricultural Service Development focus area (Table 3). These two assignments were conducted by one volunteer, **Dr Tadesse Mebrahtu**. During the first assignment he gave a seminar entitled "Applications of New Genetics in Food and Agriculture" for 33 male and 2 female participants; held training workshops on cotton and sesame production and utilization for 45 male and 2 female participants; and how to conduct scientific research and guidelines for preparing publications for staff and students of the University of Asmara. He emphasized the need to utilize biotechnology in improving crop productivity and recommended that a breeding/crop improvement program be established and researchers be trained in the field of biotechnology. He further recommended that the crop improvement program focus on priority crops and that the private sector be encouraged to get involved in this endeavor.

Dr. Mebrahtu came back to Eritrea in July 2005 for the second assignment on capacity building. He provided various trainings on common bean variety evaluation and planting, harvesting and packaging; experimental designs in agricultural research which was attended by twenty graduate students and faculty of the University of Asmara; and on common bean improvement, production and uses, attended by 39 participants of which seven were female. The workshop participants were drawn from different zones and departments of MoA and NGOs. The volunteer recommended that collection, characterization, documentation and maintenance of common bean germplasm be continued so that varieties that are suitable for the different agro-ecologies are developed. He also recommended the evaluation and subsequent introduction of soybean into the Eritrean farming system in order to exploit the benefits derived from the crop.

Table 3 Number of volunteers, types of assignments and host institutions by country in the agriculture service development focus area (FY2003–2008).

Country	No. of assignments	Type of volunteer assignments	Host Institutions
Eritrea	2	Trainings on conducting scientific research, preparation of scientific research publications and production of selected crops	National Agricultural Research Institute, Ministry of Agriculture, members of the Eritrean Agriculture Association, University of Asmara.
Ethiopia	1	Assessment of production & marketing of sheep & goat (Four volunteers involved)	Ministry of Agriculture
	1	Training on laboratory handling & installation	Amhara Regional Agricultural Research Institute
	1	Training on laboratory handling & installation	Amhara Regional Agricultural Research Institute & Bahir Dar University

Although there was no specific assignment geared towards addressing problems associated with the extension system and diagnostic laboratories per se, as stipulated in the work plan, the extension personnel who took part in the training workshops were expected to derive information from the workshop and pass it over to the small farmers.

In Ethiopia, two assignments in FY 2005 and one in FY 2008 were carried out in Agricultural Service Development Focus Area (Table 3). One of the assignments was requested by USAID-Mission in Ethiopia and the Ethiopian Ministry of Agriculture and Rural Development (MoARD) and it was a direct follow-up to a visit by the Ethiopian delegation, led by the Deputy Prime Minister and Minister of MoARD, to the United States in October, 2004. The Ethiopian delegation requested technical support to improve productivity and marketing of sheep and goats in Ethiopia

The productivity of small ruminants in Ethiopia is reported to be low compared to other countries. Available information from abattoirs and research and development centers showed that average meat yield of local breeds of goats range from 8-10 kg per head in

Ethiopia compared to 25 kg achieved in some countries. The significant improvements achieved by the latter countries were as a result of improved feed management practices, provision of better health services and improved animal genetics. Hence, there was a strong need for a major improvement of the productivity of the local breeds, if Ethiopia is to become competitive in both regional and international markets.

Based on this request, a team of four volunteers (**Dr. Art Goesche** and **Dr. Tilahun Sahilu** from Oklahoma and **Dr. Jackson Dzkuma** and **Dr. Freddie Richards** from Texas) carried out an assessment of the sector in January 2005 and submitted their proposal to USAID/Ethiopia. As a result of these volunteers' proposal, a five year USAID-funded project entitled, "Ethiopian Sheep and Goat Productivity Improvement Program" (ESGPIP) became operational in 2006.

The second assignment in this focus area was conducted by **Dr. Asmare Atalay** of Virginia in June, 2005. The objectives were to train technicians in basic laboratory procedures and help install analytical instruments at the Amhara Regional Agricultural Research Institute (ARARI) laboratories. He visited four soil testing laboratories in the region and provided training to 11 technicians (drawn from seven laboratories) on basic soil laboratory practices. His recommendations included measures to be taken on laboratory safety and building codes; the need for technicians training on all equipments; standardizing procedures for sample analysis; sharing of equipment parts among laboratories; and getting rid of expired chemicals. Similarly, **Mr**. **Clyde McNamee**, who came to Ethiopia in July 2008, assisted Bahir Dar University and ARARI by demonstrating how various laboratory equipment work and attempted to fix some malfunctioning laboratory instruments. Staff from both the University and ARARI's Adet Research Center participated during the training. He recommended that those who work in the laboratories take a full course in analytical chemistry in order to be able to properly handle and use the instruments.

4.2 Rural Livelihoods and Farm Diversification Focus area

The assignments in this focus area mainly dealt with livestock and horticulture. The livestock in Ethiopia and bordering countries represent the largest population of grazing domestic animals in Africa. However, output per animal is one of the lowest in the world. Given the size of the population, all aspects of the industry (dairy, meat, fiber, draft) are critical components of the economy.

Improved pastoral management, grazing land use, marketing structures for livestock producers, and rural financial services are critical needs. It has been estimated, by Pastoral Risk Management Project, that in this area, the drought-related livestock mortality value has exceeded $1 billion US in the past 20 years. This loss is 10-15 times the actual market value during the same period. One cannot over-emphasize the impact of such losses and the potential opportunities to this sub-sector.

On the other hand, horticulture practices are at the core of both subsistence agriculture and the increased crop diversification effort to generate additional income for farmers. The horticulture field including vegetable and small fruit production in Ethiopia offers a

great potential in generating income and improving the daily diet of small rural households. However, the existing production techniques have shortcomings to generate sufficient yield. In addition, many of the products perish before they are consumed or reach the market.

There is a concerted effort by governmental and non-governmental agencies in Ethiopia to address many of the shortcomings in the horticulture field. Many local and international agencies in Ethiopia are engaged to increase the quantity and quality of animal products for domestic, regional and international markets. The VSU-FtF program provided support, by way of volunteers' technical assistances to partners (ACDI/VOCA & CHF) that are engaged in solving problems in vegetable, small fruit and livestock production in the country.

FtF fielded seven volunteers for six assignments (two in Eritrea and four in Ethiopia) in this focus area (Table 4). **Dr. Yemane Ghebreiyessus** of Louisiana came in July, 2005 and provided training workshop on irrigation to staff of the Ministry of Agriculture of Eritrea whereas **Ms. Michaela Dismann** of Virginia came in July/August, 2005 and offered training workshops to staff of the National Agricultural Institute, Ministry of Agriculture and Asmara University of Eritrea on horticultural crop production and management. However, there was no follow up and feedback on the implementation of the recommendations made by both volunteers due to the termination of the FtF program in Eritrea in 2005.

Table 4. Number of volunteers, type of assignments and host institutions by country in the rural livelihoods and farm diversification focus area (FY 2003-2005).

Country	No. of assignments	Type of volunteer assignments	Host Institutions
Eritrea	2	Trainings and workshops on production & management of selected crops; and on irrigation	National Agricultural Research Institute, Ministry of Agriculture, members of the Eritrean Agriculture Association, University of Asmara
Ethiopia	2	Training on strategic business planning and range land management	Cooperative promotion bureau staff, cooperative union managers & board members; agricultural and rural development bureau staff
	2	Livestock marketing, Market survey. Three volunteers involved	Abattoirs, livestock cooperatives, producers/pastoralists, meat exporters

In Ethiopia, four assignments were conducted under this focus area by five volunteers that addressed part of the problems mentioned in the introduction of the focus area above. **Mr. Dave Wagner** from Arizona came in February, 2005 and completed an

assignment on training in strategic business planning to government employees, cooperatives and cooperative union managers. The training was carried out in three phases. In phase I, the volunteer developed and wrote a comprehensive business plan, based on a five year growth model, for the Geda Cooperative Union in Oromiya Regional State. In the process, he mentored two key management personnel and their assistants. In phase II, a discussion forum among stakeholders was organized in which cooperative bureau staff, cooperative representatives, and union managers and selected board members participated. The discussion focused on members' services the union should provide; particularly in the area of operations, marketing and profit making; in the high potential livestock sector. In phase III, the volunteer developed and implemented a six days training to twenty six participants. The focus of the training was on how to write a business plan and the concepts in business planning. In attendance were cooperative managers, board members and cooperative promoters selected from Oromiya and Somali Regional Government Offices. By the conclusion of the training course, a model "Executive Committee Five Year Business Plans" was successfully developed by the participants.

Mr. **David Wagner,** together with his wife, **Mrs. Florence Wagner,** came back to Ethiopia in June 2005 and conducted a comprehensive market survey for the Guraghe Livelihood and Agriculture Development program (GLAD). The objective of the assignment was to determine the needs of chronic food insecure households in the Meskan and Silte Woredas (Districts) of Guraghe zone. Information was gathered through questionnaires and meetings with regional government agricultural offices of the two Woredas. The assessment has identified problem areas, formulated attainable objectives, and established a realistic plan of action. The volunteers also recommended further analysis of target markets, organization, production and capacity issues, customer profiles and demographics and labor force for a comprehensive business plan to be designed to enhance local entrepreneurial enterprises.

Mr. Kenton Ayers, a livestock marketing specialist from California, came to Ethiopia in September of 2004 and carried out an assignment with the objectives of: (1) reviewing the existing marketing and value adding chain for sheep, goats and cattle in the southern tier region and map out its structures; (2) identifying slaughterhouses (abattoirs) in Ethiopia with potential to purchase cooperative animals for sale into higher value markets and assess abattoir processing capacity and markets for various animals; (3) identifying present status of sale of live animals from Ethiopia to the middle eastern countries and the short-term potential of selling animals to the region. After gathering information from individuals, livestock market organizations, export abattoirs, agro-industries that process livestock products, and government agencies, **Mr. Ayers** recommended that greater efforts be made in areas of cattle quarantine to reduce disease incidence and eventually boost the export market and enable producers get higher prices for their livestock; slaughtering plants continue to work for HACCP certification and Ethiopia work to comply with the international standards so that this opens new export markets with higher prices paid for meat products. He also recommended that the Ethiopian livestock industries unite in a joint venture that embraces the livestock producers, livestock cooperatives, slaughtering houses, livestock associations, meat and export associations, and possibly others such as the

hide industry in putting on an international livestock and meat trade show, especially inviting the Middle East markets.

Mr. Monte Bell of Montana State came to Ethiopia in December, 2005 and provided a two-weeks training for 29 participants in rangeland and herd management, including field exercises. Participants were primary cooperative and union managers, selected board members and cooperative promotion leaders, agricultural and rural development bureau staff. He suggested that participants should follow the principles of holistic management when carrying out their various responsibilities including the management of range land and herds of livestock. Holistic management is a process which considers the social, environmental and financial aspects of managing biological systems and leads the practitioner to thoughtful prioritized decision-making.

His specific recommendations included that a pastoralist advisory board be formed by DiYa-Ture Rangeland Research Station; diversify the livestock in order to achieve biodiversity in rangeland vegetation; superior livestock from the Research Center be made available to pastoralists at minimum cost; and the Dembel Wachu Ranch be managed as commons by a cooperative of local pastoralists. On the other hand, he pointed out that the weak link is livestock over population and no significant progress would be possible without reducing the number of domestic animals.

Horticulture Focus Area

Agriculture is the mainstay of Ethiopia's economy providing 85% of the total revenue of the country. Ethiopia has highly diversified agro ecological conditions, which are suitable for the production of various types of crops including fruits and vegetables. The total land area under fruits and vegetables represent about 5% of the total land under agricultural crops. Potato occupies 46% of the land area under horticultural crops. In Ethiopia, the majority of producers are small holder growers. Few small holder farmers are engaged in the out growers mode of production supplying their produce to farmers` associations and private enterprises who are producing for export market. Horticultural crops amount to 5.8% of the total agricultural exports representing 1.6% of the revenue gained from agricultural export. Few horticultural crops are being exported to Djibouti, some European countries, the middle east, mainly Saudi Arabia, Bahrain and Kuwait. Overall, there is a huge potential to produce horticultural crops due to the existence of suitable land and environmental conditions and market opportunities in close proximity.

Also their benefit in health and income generation, particularly to resource poor farmers, has yet to be exploited. There are some positive developments taking place that shall assist the growth of the horticultural industry. The investment code has been amended such that it encourages the involvement of foreign and local investors in the industry. It is intended to follow a holistic approach and to this end a development and marketing strategy has been developed. The specific areas for growing horticultural crops and types of crops to be grown have been identified and production targets have also been set. It is also planned to provide assistance to both smallholder farmers and commercial private enterprises with more emphasis to the former. International funding organizations including FAO, USAID and NGOs are supporting the sector in capacity

building, promotion of school gardening and importation and provision of improved planting materials. The government with the assistance of partner organizations is making an effort to bring into the country improved fruit planting materials to replace the local types that produce poor quality fruits.

Despite all these efforts, the productivity and quality of produce is still low. There is the need to assist the farming community in the promotion of sustainable production and enhancing efficiency of production factors; preventing post-harvest losses and enhancing value of fresh produce; ensuring food safety and quality; strengthening trade, marketing, processing and finance services; and finally promotion of already existing improved technologies from abroad and where necessary generate new technologies locally. Virginia State University's FtF volunteers, with years of experience and skill in the horticulture area, contributed a great deal towards helping the government's effort to improve the industry. To this end, a number of VSU-FtF volunteers have provided technical assistance that dealt with issues in the value chain of potato, strawberry, pepper and Mango.

As shown on Table 5, a total of 11 assignments in the horticulture focus area were carried out by 11 volunteers in collaboration with four partners- AMAREW, IPMS, ACDI/VOCA and FINTRAC. Six (55%) of the assignments were taken up by AMAREW project which all dealt with the improvement of production, handling and marketing of potato. Two volunteers were fielded by ACDI/VOCA as part of the new sub-agreement with VSU-FtF program.

Table 5. Summary of volunteers' assignments in horticulture focus area during FY 04-08.

Type of volunteer assistance	Partner	Host	No. of volunteers
Improvement of production, handling and marketing of seed and ware potato	AMAREW	ARARI, Amhara Region Bureau of Agriculture, NGO	6
Development of business plan for spliced lentil production	IPMS	Erer Cooperative Union	1
Pepper production and management with emphasis on seedling management	ACDI/VOCA	Agricultural and rural development office	1
Mango production systems	ACDI/VOCA	Agricultural and rural development office	1
Strawberry production	FINTRAC	State and privately owned farms	2

Potato production and marketing

The Amhara regional state is the leading potato growing region in Ethiopia with a share of 42% of the national potato production. Potato is one of the vegetable crops with a growing importance in the rural livelihood systems. It is mainly grown to mitigate hunger during the food lean seasons, and as a supplemental cash source. Potato is largely produced during the main rainy season. A consultancy work commissioned by the Amhara Microfinance, Agricultural Research and Extension and Water shed management (AMAREW) project revealed that lack of sufficient quantities of clean potato planting material of improved varieties is one of the bottlenecks to potato production. Most farmers are now dependent on recycled seed materials of the few local types. Even these materials are infested with diseases seriously affecting the productivity of the crop. Even if the problem of seed production is solved it has to be available to ware potato producers. Good storage methods, for both seed and ware potato, have to be developed. The existence of market, that will keep seed and ware potato producers profitable, is crucial to the continuity of potato production. Sudan and Djibouti are potential export markets. There is a plan to establish a potato dehydration plant in a town called Injibara which is expected to serve as one of the destinations of ware potato produced by farmers. Therefore, there is a need to asses the production, processing and marketing of potato in the region and suggest ways of creating a sustainable potato industry. Based on AMAREW project request, a total of six volunteers were fielded during FY 06 and 07. The technical assistance delivered by the six FtF volunteers covered the whole value chain, linking seed growers to ware potato growers to markets and finally to the dehydration plant which will be functional soon in the Amhara National Regional state, northwestern Ethiopia. Volunteers not only identified problems and made recommendations associated with each value chain but also identified the problems that arise as a result of interactions between them and provided possible solutions so that seed and potato producers and the dehydration plant complement each other and thereby create a sustainable potato industry.

The first two volunteers, **Mr. Roger Knutzen** from Washington State and **Dr. Joseph Guenthner** from the University of Idaho who came in April, 2006 and May, 2006, respectively, identified the major constraints which were lack of good quality seed potato; lack of active extension system to introduce disease resistant, adoptable and high yielding potato varieties to farmers; lack of specialization in either seed or ware potato production; lack of appropriate seed and ware potato storage and transportation system; lack of effective market systems; lack of organized community based seed and ware potato production system; absence of seed potato planting pack and lack of seed potato identification system.

Four more volunteers were subsequently fielded to provide their recommendations that could alleviate the above constraints identified in the value chain of potato production.

Mr. Terril Christensen, a farmer from Idaho came in February, 2007 and worked on the seed potato production and marketing system. His recommendations helped development workers to better track the seed sources and distribution to ware potato

producing farmers. **Mr. Charles Basham** of Fort Collins Colorado came in March and studied the potato marketing chains from farm to primary and secondary markets and across the boarder to the Sudan. **Mr. Basham** recommended that programs be put in place to strengthen cooperatives and to encourage those in potato producing areas to actively engage in gathering market intelligence. He also suggested building storage facilities, applications of grading standards, proper transportation of the loads for marketing high quality products.

Mr. Alan Liard of Marion, Iowa came in September, 2007 and assisted the AMAREW project in organizing the existing seed potato producing farmers into seed producing and marketing cooperative. He discussed with the Regional Cooperative Promotion and Development Agency on the procedures necessary for the organization of a cooperative for seed potato marketing. He also discussed with seed potato growers in Sekela District and Gumet Watershed on the advantage of being organized into cooperative for marketing high quality standard potato seed for a better earning and suggested models for the organization.

Mr. Charles Higgins of Stevens Point Wisconsin was fielded in August, 2007 to work on seed and ware potato storage system applicable to smallholder farmers, cooperatives and traders in the region. He evaluated the existing storage facilities for both seed and ware potato and provided suggestions for improving them and also provided alternative storage structures that may be applicable to the local situations. He also made specific recommendations to make the tissue culture laboratory in Bahir Dar functional in the shortest time possible so that it will produce enough seed to satisfy the huge demand for seed potato needed for the dehydration plant at Injibara. He also suggested that farmers with irrigation capabilities be recruited with payment bonuses for out of season seed production.

Business plan development for lentil splitting plant

Erer farmers` cooperative union is located in Debre Zeit town located 45 km south of Addis Ababa. It was established by a voluntary union of seven primary cooperatives found in Adaa Woreda (district) on November 1, 1998. The primary cooperatives affiliated to the union have now increased to forty and come from three other neighboring districts (Libancuqaalla, Gimbichu, and Akaki) in addition to Adaa. These areas produce teff, wheat, lentils, chickpea and beans.

There are 36,150 members belonging to the primary cooperatives of which 32,289 are male and the remaining 3861 (12%) are female. The union was established to benefit member farmers through improved bargaining power, provision of inputs and services at a lower price, creation of market for members' produces and promotion of modern agricultural technologies

It is currently involved in the importation and distribution of fertilizer, provision of improved seed, agricultural chemicals and sprayers, marketing of produce of farmers, tractor rental service, credit service, training of farmers and audit service

The areas covered under the union are known for growing Lentils. Over 50% of the farmers produce lentils which is usually sold whole. But in Ethiopia one of the main dishes is prepared out of split lentil. There is also a huge demand for split lentil outside of Ethiopia. In the late 1970`s, Ethiopia was grouped among the major lentil exporters in the world (Syria, USA, Argentina, Jordan and Turkey) and nearly 63% of the production has been exported. The union will benefit itself and the farmers through this new venture of added value lentil product. The union needed a business plan and this request was brought to the attention of FtF program by one of FtF`s partners, IPMS. It was **Mr. Larry White** from northern Pulse Growers Association in Bismarck, North Dakota who took this assignment in September 2007 and developed business plans. Three potential plans for the establishment of the plant was suggested, each providing the type, capacity, location, cost and cost benefit analysis of the plant. In the volunteer's analysis, the profit margins suggest that this will be a very profitable enterprise for the union and its farmer members. It is also envisaged that the union will sell its product in the domestic market and look to some international trade when the union starts to process larger quantities. Lentil producing farmers can therefore have a steady market to their produce in close proximity to their farm land, and they can get dividends as the profitability of the enterprise dictates, and create job opportunities to member farmers. The Union has taken the recommendations seriously and gathering momentum to establish the plant.

Pepper production and management

Over 3600 farmers are involved in pepper production in the Backo Tibe Woreda of Oromiya Regional State. Data collected from the Woreda (Disrict) Agricultural and Rural Development Office (WARDO) shows that, five years ago, pepper yield was 800 -1000 kg per ha on farmers` plot. Productivity has declined to 400-500 kg/ha, mainly due to attack by different diseases. Improper harvesting and post handling techniques also affect the final marketable product. The common practice of premature harvest, sun drying on mud floors and storing in unventilated dark rooms have caused spoilage rate as high as 20-30%, according to data obtained from the Woreda. ACDI/VOCA, on behalf of Backo Tibe WARDO, requested volunteer's assistance to help the pepper farmers whose livelihood has been threatened as a result of a disease that has seriously affected pepper production. This responsibility was given to **Dr. Usha Palaniswamy** of Albany, New York, who was fielded in September, 2007. The objective of the assignment was to increase the income of pepper farmers through improved cultural practices of pepper production in the Woreda. She first conducted a thorough assessment of the constraints by visiting the Ethiopian Institute of Agricultural Research in Addis Ababa, Backo Agricultural Research Center, and Backo WARDO and affected farmers; and discussed with concerned individuals within each institution. She then provided training to 72 technical staff of WARDO and 300 lead farmers. The training covered the complete cultural practices and crop production and management practices including: seed and nursery site selection, seed bed preparation, seed sowing, seedling selection, planting, fertilizer application, irrigation, weeding, pest and disease control on seed beds and field; and harvest and post harvest practices. Finally, she identified wilt disease, not well defined role of and lack of working relationship between extension

workers and researchers, and lack of timely provision of information on available technologies to farmers as major problems that need to be addressed. She made recommendations on how to deal with the problems and actions to be taken to implement the recommendations.

Mango production system

One thousand eight hundred farmers in the Backo Tibe Woreda West Shoa zone of the Oromiya regional state currently own mango trees that are 40-50 years old. The farmers face a variety of challenges including aged mango trees, lack of improved varieties, lack of knowledge on identification and proper control/treatment of pests and diseases, and significant post-harvest losses due to poor harvesting methods and handling techniques (prolonged storage in unventilated rooms). These factors have resulted in the decline of production from 130-150 kg per tree in the 1990s to 100 kg per tree now and also deterioration in the quality of the product over the last 20 years. At present, mango is sold at a farm-gate price of less than one Birr per kg whereas a good quality of mango is sold at 4-5 Birr per kg in retailers shops in Addis. ACDI/VOCA requested volunteer's assistance to increase the income of 1,800 mango farmers through improved mango production systems in Backo Tibe Woreda. **Mr. Malcolm Manners** who came to Ethiopia in December of 2007 made an assessment of the current mango production systems that included seedling production, pest and disease control, harvesting and post harvesting techniques; and also conducted a five days hands-on training to 20 technical staff of Backo Tibe WARDO on the complete cycle of nursery management, and to 150 selected lead farmers on mango tree management. Based on his assessment he identified three areas that need serious consideration - pest & disease management; nursery production & planting in the field and harvesting & post harvest issues. He further provided recommendations on how to tackle each problem and list of follow up actions to be taken in order to implement the recommendations.

He further suggested that appropriate scions be made available to farmers and subsequent training be provided to create skilled workers that are capable of facilitating the adoption of recommendations by farmers. He also recommended that, in the long term, older seedlings of local trees be replaced by new high-quality grafted nursery plants

Strawberry and table grape production and marketing

The growing and marketing of strawberry is relatively new to Ethiopia. There are no strawberry technologies developed (agronomic practices, suitable varieties, soil and water requirements etc) in the country. However, due to the existence of a suitable environment, particularly in the Rift Valley area, some strawberry farms have been established with technical assistance of foreign consultants and are exporting their produce to some European countries. This is in line with the government's strategy of diversifying its source of foreign exchange earnings. However, the production system employed by these farms is strongly influenced by foreign experiences and some of the production environment in the Rift Valley is different from other countries. These include

seasonal variation in day length, soil type, relative humidity, elevation, solar intensity, water quality and cultural make up of the workforce. Some have experienced serious problems while others are relatively performing better. Some of the farms adopted the practices of other farms without having much information about their own plot of land. This calls for technological and managerial adaptations to successfully manage a strawberry enterprise under such contrasting conditions. Proper identification of the problems and providing remedy to these problems is critical to the existence of these farms.

Two volunteers were fielded, as a result of a request made by FINTRAC, to address the above problems. The first volunteer was **Dr. Clive Kaiser** of Oregon who came in February of 2008. The objective of his assignment was to assist commercial strawberry and grape growers to improve their agronomic practices and produce quality products that meet export and local market requirements. He started assessing the existing situation by visiting most of the strawberry and grape farms and discussing with farm managers and owners of the farms. It was discovered that the pH of both soil and water at most of the farm locations was relatively higher than the plants can tolerate. The high pH makes the dissolved fertilizer unavailable and also results in reduced pesticide efficiency. It was recommended that the pH of both soil and water be adjusted to around 6.5. The other area of concern was the need to ensure good field hygiene. It was stressed that toilets, running water, soap and drying facilities be made available for pickers and graders to avoid the risk of contaminating fresh produce with disease causing organisms. Other recommendations he made included rejuvenation of clay soils by adding organic matters and, keeping nursery site and production fields far apart to reduce the chance of cross contamination. Sixty two participants (58 male and 4 female), most of whom are currently involved in the strawberry industry, took part in the agronomy training workshop. The training covered problem description related to soil, water and field hygiene and means of solving the problems. The strengths and weaknesses of two selected strawberry farms were also discussed.

The second and follow up assignment was carried out by **Dr. Bob Nottlemann** of California who came in April, 2008. He visited three strawberry farms, Almeta Impex, Ilan Tot and Nuredin Hassen all located in the Rift Valley. He also recommended that food safety be given the utmost priority as the current centralized packaging system, where fruit is picked into and transported to the pack house with the same Styrofoam trays throughout the season which falls far short of the sanitary system required to serve the EU market. He also suggested that application of plastic mulch should only be made to the top of the bed and not the furrows to allow enough oxygen to pass thru into the root zone of plants. He further recommended that technical support be provided, in the areas of: food safety and the implementation of field packaging, strawberry nursery plant management and management of soil and irrigation water quality.

4.4. Livestock Focus Area

Ethiopia possesses the largest livestock population in Africa with estimated 31 million cattle, 27 million sheep, 24 million goats, 7 million equine, and 2 million camels. Livestock is the major and essential component of the country's agricultural production. The sector is also a source of food, draft power, transportation, and foreign exchange, and for economic security to smallholder farmers in bad years. The agrarian population of Ethiopia is engaged in livestock production in crop-livestock mixed farming and the economy of pastoral population entirely depends on livestock production.

In Ethiopia, the economic benefit derived from livestock is one of the lowest in the world. This is despite the huge livestock population. The per capita meat and milk consumption of Ethiopians is also considerably low. Despite these problems, there is substantial untapped potential for growth of the industry. With the recent economic improvements the country is experiencing, the local demand for animal products is likely to increase substantially. Ethiopia's geographical location is also well suited to access fertile foreign markets in the Middle East, other African countries as well as some European markets. The Ethiopian meat export industry is one of the sectors that have been given development priorities by the government aiming at increasing meat export and also the value of hides and leather goods. The industry also creates more job opportunities and most importantly provides market outlet opportunities to livestock producers, particularly the pastoralists. There is a very encouraging start moving the sector towards these goals by executing several public and private development and trade projects in the country. These projects address all the value chains in transforming the sector into a more productive that economically benefit the small holder farmers and, consequently, to enhance the needed foreign exchange earning of the country as a whole. In support of these efforts, VSU-FtF delivered valuable technical assistances along the whole value chains, mainly in partnership with some USAID funded development organizations in the country.

Efforts have been made to identify key issues in the value chains of dairy, small ruminants, export standard beef processing, and fishery areas that affect the production and market efficiencies of these sub-sectors and provide assistances in order to make them more sustainable and enhance the income of the smallholder farmers. For example, in the dairy sub-sector the technical assistances delivered by FtF volunteers covered the whole range of activities that included organizing small agribusinesses for more efficiency; feed formulation and feed plant management; improvement in AI service delivery in some regions; dairy processing and marketing; application of solar and other alternative energy for cooling milk at collection centers and milk sheds; training dairy cooperative members on dairy bull calves raising and management; and dairy waste management using on-farm composting. In small ruminants, the technical assistance delivered focused on major problems that include sheep and goat rearing techniques; feed resources; and feed formulations and internal parasite control. In aquaculture, volunteers delivered assistances to two fishery production and marketing cooperatives in fish rearing techniques, fish-pond management, and marketing.

During the life of the VSU-FtF project, a total of 37 volunteers for 31 different assignments were fielded in the livestock area. Four assignments were done by four pairs of volunteers. Two volunteers came four times and one volunteer came twice for continued assignment with the same partners/hosts, for the similar assignment with different partners or for different assignments with same hosts. The volunteers delivered services for a total of 647 volunteer days in the livestock areas.

Specific areas of assignments and the partners and hosts through which the assignments were delivered to the hosts are summarized in Table 6.

All of the volunteers, except the one requested by ACDI/VOCA, were fielded through development partner organizations that assist the effort of the Ethiopian government in its effort to achieve food security to its citizens. All the partner organizations, except IPMS (which is funded by Canadian, CIDA), are executing USAID funded projects in different areas of the country. Summary of profiles of these partner organizations are given on Annex 7.

Table 6. Summary of accomplishments in livestock focus area.

Specific areas of assignments	**No. of assignments completed under each partner/host**					
	AMAREW	**LOL**	**ESGPIP**	**IPMS**	**SPS-LMM**	**Coops**
Small agribusiness	-	2	-	-	-	-
Livestock/dairy feed	1	3	2	-	-	1
Dairy processing and marketing	-	5	-	4	1	-
Dairy waste composting	-	2	-	-	-	-
Small ruminants production & marketing	4	-	1			
Meat processing	-	-	1	-	1	-
Aquaculture	3	-	-	-	-	-
Total	**8**	**12**	**4**	**4**	**2**	**1**

Small agribusiness management trainings

These particular assignments were requested by Land O'Lakes (LOL) in support of the Ethiopian Dairy Development Project (EDDP). The project is aiming at enhancing income opportunities for Ethiopian small holder dairy producers by promoting investment in milk processing and marketing and by expanding the availability of nutritious dairy based foods for Ethiopia's growing urban population.

Dr. Gerald Nolte from Minnesota came to Ethiopia in March and November, 2006 to give the training in two phases. During the first phase of the training, **Dr. Nolte** trained private business owners (feed dealers/retailers, animal health care providers, private and public AI technicians) and government employees who play a support role in small

agribusiness development. He conducted several training sessions in Addis Ababa, Debre Zeit and Bahir Dar which focused on attributes of business and its dimensions, business planning and evaluation, balance sheet, income statement and cash flow. A total of 63 people (57 male and 7 female) have benefited from these trainings.

Dr. Nolte returned to Ethiopia in November, 2006 and conducted phase II training in Addis Ababa and Bahir Dar to the same group of trainees as well as to new private agribusiness people (veterinarians, animal drug dealers, AI technicians, and feed dealers). This training covered financial business management, business plan preparation, personal sales and strategies for expansion customer services. Twenty two (two were women) participants were trained in this phase. In addition, **Dr. Nolte** provided consulting service to a 400-cow milk processing plant in Addis Ababa.

Both the assignments of **Dr. Nolte** were successfully completed as planned since it was organized and closely followed by LOL. The trainings were also given to selected agribusiness people who are participants of LOL's overall dairy development projects. Feedbacks from LOL showed that participants have benefited from the trainings and have adopted the recommendations at various levels. Some success stories from these assignments have also been reported (Annex 5).

Livestock feed resource assessment and feed plant management

A total of seven assignments were completed in the feed resources assessment and feed plant development. AMAREW, LOL and ESGPIP were the three partners and one dairy cooperative in the southern region through ACDI/VOC that have requested the FtF technical assistances in the feed area.

As feeds are the major constraints for sheep and goat production in many parts of the country, AMAREW and ESGPIP requested assistance to asses the feed resources and naturally occurring browse species for their use as feed for small ruminant animals and recommend ways for their efficient utilizations. **Dr. Ozzie Abaye** and **Ms. Pat Donovan** from Virginia Tech were hosted by ESGPIP in March 2007. They made GPS assisted assessments of browse plant species in reference to their ground cover and relative abundance in the Ethiopian Rift Valley**. Ms Donovan**, specialist in GPS, has mapped the spatial extent and diversity of the available plant species. **Ms. Donovan** also demonstrated the use of GPS data collection in the field and its importance in providing a quick, accurate and quantitative assessment of vegetations. She held a seminar to the faculty and staff of College of Agriculture of Hawassa University on her GPS/GIS work conducted in the field.

Dr. Ozzie Abaye came again in May, 2007 and made similar feed resources assessment and utilization of browse species for small ruminant animals in Northern Ethiopia. This assignment was requested by the AMAREW Project at Bahir Dar. This time, **Dr. Ozzie** was accompanied by **Dr. Steven Oberle**, land conservationist from Wisconsin. Their assessment showed that severe overgrazing greatly affected the natural vegetation cover in the northern region of the country and many important

browse species have already disappeared. Land degradation and decrease in pasture productivity are major problems that affect the productivity of the small ruminants in the region. They remarked that the integrity of the ecosystem and future food security in the region is in great jeopardy. They have made several recommendations of interventions that have to be implemented in short and long terms in the region.

Mr. Robert Albrecht from Wisconsin was hosted by LOL in August, 2006, March 2007 and December 2007, to provide consecutive trainings to small feed millers and feed dealers in feed supplement formulation, feed plant establishment, development and management in LOL project sites in and around Addis Ababa, Bahir Dar, Gondar and Asela. The feed millers were trained on how to improve quality, production and efficiency of the existing feed plants. He also suggested some technical specifications on the structure and equipment installations to proposed new feed mill plants.

Mr. Robert Albrecht also came in January, 2007, upon the request of the ESGPIP to assist on the development of supplemental feed for sheep fattening in Arsi-Negele, Hawassa and Wolita-Sodo, in the Southern Regional State. He spent several days visiting small produces that practice sheep fattening, feed suppliers and markets and made several recommendations that would improve the sheep fattening practices and enhance the income of farmers.

Another FtF volunteer, **Dr. Mekonnen Lema** from Tennessee was fielded by ACDI/VOCA under the sub agreement in January, 2007, to provide assistance that enhances feed development through ration formulation using locally available by-products, management of drought resistant forage species and feed preservation techniques such as small-scale silage preparation. The emphasis was on improvements of the supply and quality of dairy feed during the dry season in Lemo Wereda (District), Hadya zone of Southern Regional State. **Dr. Mekonnen** gave training to extension agents, technical staff, dairy cooperative members and processing technicians of Lemo Wereda (district) in the area of dairy ration formulation, planting and inter-planting of grasses and dry season feeding strategies.

Dairy production, processing and marketing

A total of 8 assignments were completed in this area and most were done in partnership with LOL and IPMS (please see Table above). Technical assistance was requested by IPMS in dairy processing and business development/marketing for dairy cooperatives and farmers in four of its project areas. The major objectives of these assignments were to assess the current dairy activities in these areas and recommend potential models to develop the dairy industry in a market oriented approach. **Ms. Gretchen Dhooge** from Arizona came in June, 2006 and studied the dairy activities in Dale Wereda (district), Southern Ethiopia. She made extensive recommendations that IPMS and the Wereda level experts of the Ministry of Agriculture and Rural Development (MoARD) could do to bring the dairy cooperatives to more competitive and business oriented entities.

Mr. Henry McNeilly from Ontario, Canada and **Mr. Paul Heinzen** from Alaska came in 2007 for similar assignments with IPMS for the Adaa dairy cooperative in central Ethiopia and for the Bahir Dar milk shed in northwestern Ethiopia, respectively. They characterized the dairy activities in these areas and suggested a number of ideas for their improvements and become more market oriented. **Mr Glen Huskey** from California has done similar assignments at Mekele in Tigray Regional State, northern Ethiopia in October, 2007. After visiting dairy farms, dairy cooperatives, and milk sheds, and markets in and around Mekele, the regional capital, he forwarded several recommendations including milk hygiene and quality control programs with some testing procedures.

The requests for technical assistances that came from LOL focused on appropriate energy for milk cooling at farm and collection centers in the rural areas where electric power not readily available; improving AI services in Tigray region which is far from the bull center in Addis Ababa; and assistance in dairy cooperative development in Gondar and Mekele areas in northern Ethiopia.

Mr. Michael Tierney, an environmental engineer from Wisconsin, volunteered for the solar and other appropriate technology application for cooling (and heating water for cleaning) milk and other dairy products at farm levels, during transportations, and at collection centers. **Mr. Tierney** came to Ethiopia in July/August, 2006 and visited dairy farms, cooperatives and milk sheds in and around Addis Ababa, Bahir Dar, Debre Zeit, Gondar and Mekele. He suggested many solar and non-solar energy sources that should be demonstrated at local levels and select the ones that fit the specific local conditions. A team of two volunteers, **Mr. Braxon Kinsey** from Alabama and **Mr. William Hagen** from Florida came in June, 2008 to investigate further the alternative energy issues for cooling milk at the farm household and milk collection centers. After visiting different dairy farms in and around Addis Ababa and Bahir Dar, they suggested “passive cooling systems” using local materials, such as “Agelgil”, that the small producers would know how to create them.

They also suggested solar energy which is relatively expensive compared with other alternatives such as biogas based devices. They also suggested ice packs and biogas digester as alternative source of energy for milk cooling at farm levels and collection centers. The volunteers identified lack of technical knowledge to perform routine maintenance on the energy devices as a major obstacle in the adaptation of these technologies. This frequent equipment malfunctioning was the most common cause for failure of 95% of the biogas digester installed. They further emphasized that most dairy farmers are economically incapable to install such system unless their income from dairy sell is considerably enhanced by increasing dairy price to reach “economic equilibrium”. For the over all improvement of the small holders dairy in the country, the volunteers suggested the “Tira Menga” concept. This system is based upon an integrated cooperative design where production and milk processing are achieved under the same roof. The system can have subsystems such as; cattle hutu, biogas digester, forage production fields, processing unit, and solar power unit. All of these lend to sustainability and a form of economic independence.

Another group of two volunteers worked in the same subject but in different perspective. **Mr. Ryan Anderson** of Washington State and **Mr. Kenneth Koers** of Michigan, who are members of the Engineer without Boarders, came in July, 2008 and shared their experiences in "pot-in-pot" cooling concept. The concept was developed in West Africa for cooling vegetables. The volunteers tried to modify it to fit cooling milk which is liquid. They visited different potters in Addis and Gondar to find out and design appropriate pots that fit the purposes. Unfortunately, the designed clay pots by the potters could not be dried on time, due to the wet rainy season, and they could not make the testing. However, they anticipated the pot-in-pot design could very well be suited for small scale farmers, but needs to be tested by a follow up of volunteer assignments. They also suggested "Clay brick evaporative cooler" which is similar to pot-in-pot concept but is larger and more permanent. They also suggested biogas power and charcoal cooler to be considered.

Mr. Don Hutzel from Accelerated Genetics in Tiffin, Ohio came to Ethiopia in July 2007 for the AI service improvement assignment in Tigray, Northern Ethiopia. The Tigray Regional Government requested this assistance through LOL in order to assess the current AI activities in the region and study the feasibility of partial or complete privatization of the service. The current service which is government-operated and controlled from Addis Ababa is inefficient. His recommendations, however, focused on the necessity of breed (genetic) improvements towards more productive dairy herds in the region as well as in the country through the introduction of semen from other countries and employ AI technology. He has made several useful suggestions that could improve the efficiency of AI service in the country.

Mrs. Mary Albrecht volunteered for a dairy cooperative development assignment and came to Ethiopia in November/December, 2007. In the smallholder dairy farmers perspective, dairy cooperatives are identified as being essential to dairy development and for overcoming problems of collection, transportation, processing and marketing of milk. Smallholder farmers produce little amount of sellable milk and unless their milk is pooled for collective processing and marketing the economic of scale couldn't allow them to do meaningful business. As a result several dairy groups and cooperatives have been established and many more will be established in the future. However, the dairy cooperatives lack management and business skills and most of them are inefficient. **Mrs. Albrecht** held several training sessions on principles of cooperative formation and managements, record keeping and some accounting, and benefits and issues of milk processing and marketing to cooperative members at both locations.

Dairy cooperatives usually face problems on how to raise and profitably dispose male calves in the dairy herd. On the other hand, export abattoirs and live animal exporters are always in need of animals with best quality meat. SPS-LMM came with an idea that if dairy coops get assistances and trained on how to raise their bull calves and market them to the abattoirs, both parties will economically benefit. The objective of this assignment was to increase income of the dairy coop members by selling their bull

(male) calves at profitable prices and to supply export abattoirs with quality beef animals.

Mr. William Turner was fielded in March, 2008 in partnership with SPS-LMM. The volunteer assessed the current handling of the dairy farms by the Adaa Dairy Cooperative, with more emphasis on male calf management. He found out that the farms are well run but the animals suffer from lack of quality feed. He made recommendations on the type of feeds to cows at different stages of lactation, and on the benefits and ways of feeding the first milk (colostrums) to calves for their fast and healthy growth. The Coop is working on physical structures needed to house the male calves and follow the recommendation for their management.

Dairy waste management using composting

Dairy manure is usually considered as waste, especially around urban dairy farms. Current systems of disposing manure in Ethiopia are “pit” systems which are labor intensive and are small in size. The product is usually not fully composted due to the space limitations of the pit. Composting is a technology that if managed correctly can reduce costs of chemical fertilizer while minimizing soil degradation. Composting will improve soil structure, improves farm waste management, increases yield and contributes towards improved soil organic matter. Farmers tend to use less than the recommended units of synthetic fertilizers because of high prices. Compost can supplement or replace chemical fertilizer on the small holder farms.

Through the request of LOL, **Dr. Gerald Nolte** came in April, 2007 and conducted workshops and demonstrations on on-farm composting techniques to agents who work with urban milk producers who are viewed as leaders in Addis Ababa and Bahir Dar. Coinciding with **Jerry Nolte’s** efforts there have been several localized trainings conducted by various NGOs. Consequently, **Dr. Nolte** came again in March/April, 2008 since LOL felt that there is a need to bring the technology into an institutional structure by targeting the local extension personnel. Extension personnel and agronomists from agriculture bureau of the Amhara and Tigray Regional States were gathered at Mekele and those from Oromiya Regional State met at Debere Zeit and were trained by **Dr. Nolte** in a train the trainers approach to improve and expand composting on small holder farms. He gave a list of recommendations to both the participants and the partner for future implementation.

Meat quality and processing

The meat processing enterprises and export abattoirs are recently growing fast in the country although the expected growth level in the volume of exports has not been yet attained. The problems include import restrictions due to stringent SPS requirements by importing countries; inconsistent price for competitive export quality meat and livestock; insufficient capacity for cattle slaughter, cold chain processing, packaging and transport of export quality meat and meat products by road and sea. SPS-LMM has requested technical assistance from FtF. A volunteer with expertise in the area, Mr. **James VanEss** from Green Bay, Wisconsin, came in March, 2008 and trained plant managers and employees at Elfora and Modjo meat processing plants and demonstrated different methods of beef fabrication and standard operational procedures. **Mr. VanEss** also made several recommendations for the plants to follow and improve their activities.

Another concern, expressed by ESGPIP was that meat/carcasses from highland sheep and goat get accelerated darkening and have relatively short shelf life compared to those from lowland animals and requested expertise assistance to identify the cause and suggest ways that might minimize the problem. **Dr. Govind Kannan** from Fort Valley State University, Georgia, came in February/March, 2008 and gave formal training to researchers, abattoir managers and employees on pre-slaughter animal management and handling methods, post-slaughter carcass and meat handling and meat quality assessment at the Ethiopian Meat and Dairy Technology Institute in Debre Zeit. The training program was conducted at the Organic Export Abattoir in Mojo. **Dr. Kannan** has also participated in the evaluation of the ongoing research on identifying meat darkening in highland sheep and goat. He made several recommendations to be implemented in short and long term basis.

Small ruminant production and marketing

Two partners, AMAREW and ESGPIP, have requested FtF volunteers' technical assistance that enhances the income of the small holder farms and foreign trade from the potentially huge small ruminants industry of the country. AMAREW, a USAID-funded development project in the Amhara Regional State in north-western Ethiopia needed assistance in three areas of small ruminant production in the region; 1) assess the current small ruminant production systems and design workable production strategies; 2) assess the current marketing system, opportunities and development of marketing strategies that benefit producers and traders of small ruminants and 3) provide professional training to producers, traders, and development workers on strategies of small ruminant rearing and marketing that insures better economic return.

Ms. Judy Moses, experienced goat farmer from Wisconsin completed the first part of this assignment in July/August, 2006. She briefly assessed eight of the nine zones of the Amhara region. She identified that feed shortage and low productivity in meat production, and poor reproductive performance, diseases (especially tropical parasites) and genetic improvement issues are the major constraints that limit small ruminant production in the region. She made a number of research and development

recommendations to alleviate these problems and suggested follow up technical assistances.

Mr. Larry Jacoby, from Wisconsin took the second assignment in August, 2006 and assessed the current small ruminant marketing system, opportunities and suggested some ways of improving the performance of the market. He reiterated what **Judy Moses** has stated as the major challenges such as the lack of feed/nutrition, inefficient disease control, breed mixes, gaps in communicating market information to stake holders and lack of farmers training on the use of improved technologies for the production and marketing of small ruminants.

Based on the recommendations of these two volunteers, **Mr. Steven Weerts** and **Mr. David Kier**, both sheep and goat farmers in Wisconsin, took the third assignment in September, 2006 and trained development workers at Debre Berhan and Bahir Dar. Their training mainly focused on alleviation of production and marketing problems identified by previous volunteers and was delivered in training of trainers approach on improved methods of early weight gain for market lambs and marketing issues. The training was provided in classroom as well as practical activities and a large volume of materials were provided to trainees for future references.

The ESGPIP had to import Boer goats and Dorper sheep from South Africa to be crossed with locals by regional research centers and ultimately distributed to farmers. Quarantine was the major concern in this activity and in conjunction to this ESGPIP has requested FtF volunteers' technical assistance to train technicians on internal parasite control in small ruminants.

Dr. Dwight Bowman, a professor at the Department of Microbiology and Immunology in the College of Veterinary Medicine at Cornell University, NY, and his colleague **Ms. Janice Liotta,** a research technician in the same department, came to Ethiopia in May, 2007 to train veterinarians on small ruminant internal parasites diagnosis and control. They trained 32 veterinarians (24 men and 8 women) at the National Animal Health Diagnostic Center (NAHDC) at Sebeta on the diagnosis of helminthes, arthropods, and protozoal infections of goats and sheep. The training consisted of lectures by **Dr. Bowman,** followed by hands-on laboratory exercises led by **Ms. Liotta** and assisted by members of the NAHDC staff. Trainees made field visits to three of the regional sites where ESGPIP will temporarily house the new local-Boer-cross goats and local-Dorper-cross sheep, prior to their distribution to regional centers and ultimately to the Ethiopian farmers. For the successful introduction of Dorper sheep and Boer goats from South Africa, the volunteers recommended that the animals be carefully monitored for resistant parasites and should be kept under observation in a quarantine facility before they are released.

Trainers and trainees also discussed methods for the protection of drinking water from contamination with pathogens from animal manure, methods for the treatment and disinfection of drinking water to destroy or inactivate pathogens, and methods for the

immuno detection and molecular characterization of stages of parasites found in drinking water, soil, feces, and manure.

Aquaculture

Per capita fish consumption in Ethiopia is reported to be one of the lowest in the world with less than one kilogram consumed per person per year. Much of this consumption occurs during fasting periods when Orthodox Christian believers are required to refrain from eating other animal products. However, demand for fish is increasing at fast rate due to population increase and a large market demand in Addis Ababa and other big cities. Approximately 50% of the harvested fish that enters this market is from Lake Tana. Administrators and farmers in the Amhara National Regional State where Lake Tana (the largest lake in the country) is located are interested in developing the fishery and aquaculture industry. Some assessment studies indicate that the region has huge fishery resources; 13,000 to 15,000 tones of fish is harvested annually from Lake Tana alone and only 10-15% of the region's potentials are exploited annually. It is believed that the sector will greatly contribute to alleviate food insecurity problems, create employment opportunities, and a major source of economic income for the regional population if its performances can be improved from the current traditional and inefficient state to a more developed and productive industry.

AMAREW project in partnership with the Regional Bureau of Agriculture and Rural Development and the Amhara Regional Agricultural Research Institute (ARARI) has taken a step towards the development of aquaculture in the region. AMAREW requested FtF volunteers' technical assistances to assess the current fishery practices and to recommend ways of improving the production and marketing of fish in the region. **Dr. Brian Nerrie**, extension specialist (aquaculture) from Virginia State University, came in July, 2006 and assessed the fishery activities of Zeghe and St. George Fishing and Marketing Associations operating at Lake Tana, in Bahir Dar. He obtained an overview of the fishery industry from government offices and non-government institutions engaged in fishery development and marketing in Addis Ababa. Although he acknowledged the challenges the industry is facing, he made several recommendations and suggested several follow up action to be taken.

Mr. Daniel Theisen, from Department of Animal and Avian Science, the University of Maryland continued the work of Dr. Nerrie in July/August, 2007. He trained researchers from Bahir Dar Fish and Aquatic Life Research Center association members and development agents on tilapia culture stressing on manual sorting of fingerlings by sex, tank culture systems for fingerling production, chemical and organic fertilizers for fish ponds, feeding fishes, and fish pond management.

At the same time, **Mr. Perry Raso** of Matunuck Shellfish Farm in Rhode Island assessed the fish marketing system of Zege and St. George Fishery Production and Marketing Associations in Bahir Dar. He made several management and facilities recommendations for the associations to consider for better handling and marketing of their products.

4.3. Agricultural Credit and Finance Focus Area

This focus area was known in the previous annual and semiannual reports as 'Market Development', 'Agricultural Marketing and Financing' or 'Credit Development/Banking'. Since the marketing aspects were covered in the horticulture and livestock focus areas, the emphasis of the latter assignments had became on agricultural credit and finance and the focus area was changed accordingly.

The Ethiopian Bankers Association (EBA) is the only host with whom VSU worked in the agricultural credit and marketing focus area. EBA requested V-FtF for technical assistances on the feasibility of introducing an electronic payment system by a bank or consortium of banks in Ethiopia. **Mr. Dean Peterson**, Vice-President of Wachovia Bank at Charlotte, NC came in September/October, 2006 and studied the feasibility of electronic payment system in Ethiopia. He concluded that electronic payment system is viable to the country, especially now when the economic development moves at an encouraging pace, but its implementation would require longer term technical consultancy support beyond what an FtF volunteers could deliver. VSU consequently cancelled the follow up assignments on electronic banking. However, EBA came up with another request for volunteer assistances in improving the capability of agricultural lending of public and private banks in the country.

Lending to agricultural enterprises averages only 10-13% of the total loans given in Ethiopia, which is concentrated on housing and construction sectors. This is due in part to bankers' limited knowledge of the agricultural enterprises and unsubstantiated fear of risks associated with these enterprises. Very few agricultural professionals work in banks, and those who do are only found in the government-owned Development Bank of Ethiopia, which is the major lender to the sector.

The EBA request for volunteers' technical assistance focused primarily on problems identification that hinders agricultural lending in the Ethiopian banking system, and to recommend possible solutions for its improvement.

Mr. Ray Williams from Jackson, Mississippi came to Ethiopia in June 2007 and assessed the lending practices and experiences of these banks to the agriculture sector. He identified problems, and recommended ways of improving the practices. **Mr. Williams** found that bankers were knowledgeable of the credit and regulatory requirements banks must meet in order to comply with the National Bank of Ethiopia and generate quality assets. The banks indicated a profound interest in enhancing loan activities to the agricultural sector. Those banks most active in agriculture lending exhibited several best practices in this field, including utilization of the USAID guarantee, establishment of farmer cooperatives, partnering with micro-finance institutions, and utilization of the regional governments guarantee. The Cooperative Bank of Oromiya (a two year-old bank operating only in Oromiya Region) has proven to be very successful in lending to farmers.

The most frequently mentioned lending risks by bankers were those related to collateral and credit risks. The volunteer concluded that there is a general thinking among bankers (with the Development Bank of Ethiopia and the Cooperative Bank of Oromiya as possible exceptions to this case) that agricultural financing is a risky undertaking. He concluded that this was due to a lack of information and understanding about the sector, and recommended that training on fundamentals and risk management of agricultural lending, lending through microfinance institutions, and basic agricultural practices, be organized for the bankers.

Follow up assignments were then developed together with EBA for the trainings with the objective of enhancing the local banks' capacity to lend to the agricultural sector that comprises small, medium and large-scale enterprises. Two training sessions with similar content were held at two different times for the head quarter staff in Addis Ababa and for regional staff at Bahir Dar and Hawassa.

The first training was given from August 19 to 22, 2007 in Addis Ababa. The trainers were a team of two bankers: **Mr. Chale Espinosa**, a financial consultant (residing in Managua, Nicaragua) with over 20 years of experience, and **Mr. David Kappelman**, Senior Vice-President of Premier Community Bank in Marion, Wisconsin..

The second training was planned for bankers working in regional branches offices of the banks who are thought to be much nearer to the farming community than the ones first trained in Addis Ababa. It was held at two regional capitals, Bahir Dar in the north and Hawassa in the southern Ethiopia. The second training took place between August 2 and 14, 2008 and was given by **Mr. David Kappelman** who came again for this session and **Mr. James Raymond**, an experienced agricultural lender in Wisconsin.

The training was given to a total of 97 loan officers and credit analysts (9 were women) from 10 public and private banks, comprising nearly all functional banks in the country. Topics covered in the two trainings included the nature and characteristics of the agricultural sector, different types of agricultural credit instruments, existing agricultural lending and in-country credit facilities; best practices of agricultural lending systems in other developing countries and as applicable to the Ethiopian situation, the cost benefit of managing small loans and experiences in other countries, new (alternative) models for agricultural lending in Ethiopia; practical and analytical tools for credit analysis and management (case study), and alternative ways and means of dealing with agricultural risk. Agricultural tours to dairy and chicken farms and a milk collection and marketing cooperative and a privately owned milk processing plant allowed the bankers to see for themselves the value chain from producer to consumer, and to observe that Ethiopian agriculture is progressing in certain areas. Based on this visit, groups of trainees prepared case studies and discussed with the volunteers.

Mrs. Claudia Whitehead from Chandler, Arizona, came in July 2008 to assists the Ethiopian Bankers Association and senior bank officials in the development of strategic plan for the association. **Mrs. Whitehead** had thorough discussion with the General Secretary and Board Chairman of the Association and with their inputs she developed a

draft of 5 year strategic plan for the association. The planned workshop for the Board of Directors, however, could not be arranged due to last minutes scheduling conflicts. However, she left the Association with a letter on "next steps" to be taken at the next meeting of the Board of directors. Built into the Strategic Plan is working towards increasing the Ethiopian banking industry's ability to lend to farmers. It is believed that the Board of Directors will discus the plan, make the necessary changes and adopt the plan during its next meeting.

5. ANALYSIS OF KEY IMPACTS, SUCCESSES AND FAILURES

As summarized in the section above, a large number of volunteers were fielded in the five selected focus areas and numerous recommendations were made that would address the value chain constraints. However, all the information regarding the implementation of volunteer recommendations was not available. If this project is to continue the fate of many of the recommendations could be determined with follow-up visits to hosts who received volunteer assistance.

Some recommendations definitely need resources and can be implemented on the long term basis. Others are studies that could be used as inputs for further development undertakings in the focus area. About 63% of the volunteers were fielded in the last two years of the program which could be a very short time for some hosts to implement the recommendations and see impacts. In fact, fielding volunteers has continued into August a month before the end of the project. Impacts from such assignments can not be expected to occur such a very short time.

Methodology for measuring impacts

At first, the FtF M&E plan in FY 2003-2005 was to make use of ACDI/VOCA's web-enabled Project Reporting, Information, Monitoring and Evaluation System. According to ACDI/VOCA, PRIME is a customized relational database designed to facilitate the management, monitoring, and reporting of capacity building programs. Because the system can be customized, it was expected to enable FtF program to link program indicators to USAID Performance Monitoring Plan (PMP) impact indicators. However, this did not materialize since VSU-FtF's sub agreement with ACDI/VOCA was terminated before the hiring and training of a M&E expert.

Dr. Fantahun Assefa, M&E consultant, trained two VSU-FtF staff, **Dr. Lulseged Gebrehiwot** and **Dr. Eshetu Mulatu**, on basic principles of M&E in April, 2006.

Later on, a logical framework (Log Frame) has been developed which described the objectives, activities, outputs, outcomes, and impact for each of the focus areas embraced by the VSU-FtF project (Annex 3). Performance indicators at each stage in the chain, as well as risks which might impede the attainment of the objectives have also been identified. The Log Frame has also been used as a useful tool to review progress and measure impacts as much as possible.

A significant number of volunteers were fielded in the last three years of the program. Volunteers have made numerous recommendations to be implemented by the hosts and the partners they have worked with. Outside help have been sought to strengthen the M&E aspect of the project. In this regard, **Mr. Bill Witting** and **Ms. Sharon L. Blackett**, came to Ethiopia in September 2006 and March 2007, respectively, to assist in developing an M&E system. They tried to develop formats for M&E activities. Since most of the FtF activities were carried out in support of partner organizations that implement USAID-funded development projects, **Bill Witting** developed a template for partners' profile (one but detailed template for each partner) from which VSU-FTF staff can extract relevant data for analysis and reporting. **Sharon L. Blackett** on the other hand reviewed what has been done by **Bill Witting** and further developed separate formats for each focus or intervention area with each partner. The formats developed by the two consultants were primarily used by the AMAREW and LOL (Annex 5).

For a short period, a part time M&E person, **Mr. Awoke Tilahun**, was hired, through the renewed sub-agreement with ACDI/VOCA in 2007/08, and a significant effort have been made to strengthen the monitoring and evaluation system. In this regard, VSU organized a one-day meeting with partners to create a common understanding on the M&E activities to be undertaken by VSU-FtF in collaboration with them. The discussion mainly focused on partners' existing M&E practices and methods for obtaining both baseline and impact data for volunteers assignments as well as follow-up of volunteers' recommendations.

As a step towards this effort, questionnaire designed for data collection were distributed to partners, together with the list of volunteers, their assignments and recommendations they made. These questionnaires (see Annual Report FY2007) were designed to collect information on each assignment on a 3-month, 6-month and 12-month basis. The content of the questionnaires, the type of data to be collected and methods of data collection were thoroughly discussed and agreed upon, so that each partner has a solid understanding of the requirements. These discussions covered the major indicators in the LOP Tables, including economic impact, organizational capacity building, financial service/credit and natural resources management/environment.

The fact that VSU did not work directly with the hosts, except in very few cases, but rather provides technical assistance to partners' programs makes M&E challenging. The major challenge was the assessment of the contributions made by volunteers or the impact that FTF assistance adds to the overall achievement of the partners' programs, which have multiple inputs and resources. Partners designed their Performance Monitoring Plan (PMP) for the project as a whole, not for each of the volunteer assignments as this would be impractical from their project design and M&E points of view. Due to this challenge, partners were only expected to show FtF's impact on their program beneficiaries using "best" estimates of quantitative information.

Qualitative assessment of impacts

In the earlier period, the assignments concentrated on capacity building and providing input to policy makers and development projects. But later most of the assignments dealt with specific problems across the value chains of FtF focus areas. In most cases volunteers provided recommendations that are specific and easily applicable to bring about changes.

There is no information on the implementation of recommendations and the impacts that might have resulted from the activities of the four volunteers fielded in Eritrea in 2005. In Ethiopia, a number of partners/host reported implementation of most of the recommendations made by volunteers. Some success stories have been reported, for example, in agribusinesses development, livestock feed formulation and feed plant development, potato production and marketing in the Amhara regional state and aquaculture production and marketing by fishery associations on Lake Tana and in small fish ponds (Annex 6). Most partners and hosts reported that they are on the process of implementing some of the volunteers' recommendations and expressed their need for assistances, such as resources (funding), and active participation of more stakeholders such as government agencies and NGOs in order to implement recommendations and bring impacts. Some volunteers' assignments were completed very recently; for example, 19 assignments were completed during FY 2008 of which six were done in the last six months.

Some of the volunteers' recommendations on potato and strawberry have already been implemented and outcomes and impacts are being observed. As the production of clean potato seed has been given the highest priority, fifteen nucleus groups of seed producers were initially formed which later increased to seventy seven, and have produced significant amount of basic seed and generated higher income from the exercise. Other producers have continued constructing additional diffused light storage (DLS) from locally available materials to produce seed potato. Attempt is underway to upgrade the existing seed potato growers group in to cooperative status. A team of AMAREW project staff, district subject matter specialists, extension workers and farmers had visited potato seed producing farmers in Holleta area, in central Ethiopia, who have already benefited from the business. The visiting farmers were excited about this opportunity and are expected to get more involved in the seed production business.

The involvement of extension workers in assisting seed producers has also improved significantly. Ware potato producers have significantly increased yield as a result of using clean seed. Through the participation of different stakeholders, preparation is underway to organize ware potato producer groups so that a link is established with seed producers. The problem of bringing seed potato to the market is being addressed through the maintenance of roads, connecting peasant associations with the different watersheds, using community labor and other resources. Farmer, research and extension groups have been formed in most of the pilot Woredas (districts) to facilitate the flow of timely and appropriate technology to smallholder potato farmers.

A strawberry producer with stunted plants and deformed leaves changed into green and healthy plants within few weeks of applying one of the many volunteers` recommendations (the removal of plastic covers stretched on the soil between rows). Significant improvements, in size, color and taste of fruits, have also been observed.

The Erer Cooperative Union has chosen the least expensive of the three alternative plans, recommended by the volunteer, for going into a lentil splitting business. The cooperative union made some changes in the design, to make the business less costly, by purchasing locally made cleaning machine and cheaper mill. The cleaning machine has already been bought and the Union is in the process of buying the mill. Construction of the building for housing the machines has been completed. There is a plan to resume processing as soon as the mill is purchased and electricity is installed. Lentil producing member farmers will benefit from, dividends, job opportunities and selling lentil to the Union. The profit earned from the business will make the Union stronger financially. This in turn will raise the ability of the Union to provide the different services (fertilizer, pesticides, credit service etc.) to member farmers

Key Accomplishments in Addressing Sector Constraints

As Eritrea is an agricultural economy, boosting agricultural productivity is the only way of attaining economic growth. The training conducted by VSU's FtF volunteers are expected to produce university and agricultural research staff who are now capable of conducting applied research and thereby producing improved technologies that would contribute towards improved agricultural production and productivity. The training has a multiplier effect in that the university staff would also transfer the knowledge they acquired to their students. The training on proper utilization of irrigation and growing of vegetables is expected to provide the alternative of growing vegetables during the dry season, and eventually address the problem of dependency on rain fed agriculture

The six volunteers` combined interventions in potato in the Amhara National Regional State have played a great role in enabling seed and ware potato producers produce marketable and quality product, which will guarantee the year round supply of potato to the dehydration plant, to be established soon. Furthermore, the volunteers identified the means that provided mutual benefit to all parties in the value chain thereby creating a strong bond among the stakeholders. Therefore, the recommendations of volunteers have created a sustainable system where stakeholders in the value chain benefit each other and stayed away from any actions that would disrupt the interrelationship existing among them.

The assignments, targeting small holder farmers of pepper and mango, properly identified the problems that are limiting the production, processing and marketing of the crops and ways of combating the problems. The demonstration and hands on training conducted by the volunteer on grafting mango seedlings have created extension workers and farmers who can carry out the above practice with ease and use this skill to the future improvement of the mango plant. The other demonstration on the use of a

locally made mango picking device will contribute towards improving the marketability of mango.

One volunteer described the situation of one of the strawberry farms by saying “The farm is destined for complete failure but expect it to turn around by implementing the recommendations.” Presently, the farm is showing a steady improvement after implementing the recommendations of the volunteer.

The major constraints identified in livestock focus area for the interventions by FtF technical assistance include the need for improving the performance of agribusinesses such as animal feed dealers/retailers, animal health care providers and AI technicians. A volunteer provided training to the people engaged in theses businesses in two separate sessions. Some success stories have been already reported.

Feed resources, feed formulations, and feed plant management were sought to be major problems in small ruminant production and productivity of the dairy enterprises in the AMAREW, LOL, and ESGPIP project areas. Seven volunteers were fielded to share their experiences with hosts in three partners’ project areas and one cooperative. Some feed plants have reported success in ration formulation and in the management of their feed plants. Processing of dairy products to add value and create lucrative markets was another area that has been selected by partners and hosts for FtF interventions. A total of ten assignments were developed regarding these and were executed mostly in partnership with LOL and IPMS. Assistance, requested by SPS-LMM, was also given to dairy cooperatives on raising and management of male calves for beef production in a way that the dairy farms gain additional economic benefits. Lack of appropriate energy for cooling milk in rural milk sheds and collection centers where there is no access to electricity was considered as a major constraint in the dairy sector by LOL. As the result, three assignments on appropriate alternative energy sources were taken up by five volunteers. Two of the assignments were accomplished very recently and the implementation of recommendations is yet to be seen.

In the small ruminant (sheep and goat) area a total of four assignments were developed and executed by six volunteers in partnership with AMAREW and ESGPIP. The major constraints for the small ruminant production and marketing were identified as lack of feed/nutrition, inefficient disease control, breed mixes, gaps in communicating market information to stakeholders and lack of farmers training on the use of improved technologies. A number of recommendations and training have been given to the development workers in the districts of the Amhara Regional State to alleviate some of these constraints. The training given to veterinarians on internal parasite diagnosis and control has been effectively used to carryout quarantine follow-ups on the sheep and goat breeds imported by ESGPIP from South Africa for breed improvement.

The two meat processing plants which got the training given by a volunteer on meat processing, sanitation and procedures to be followed have started to apply the recommendations. The recommendations of some pre-slaughter animal management and handling methods, post-slaughter carcass and meat handling and meat quality

assessment methods to reduce the unwanted darkening of meat from highland sheep and goats are not yet implemented. Constraints associated with the Zege and St. George Fishery Production and Marketing Associations in Bahir Dar have been identified. The volunteers have made several recommendations on management issues and facilities requirements for the associations to consider for better handling and marketing of their products. They also suggested pond cultures and their management which are applicable to the small holder farmers as supplement to the family diet and as source of income.

The major constraints identified in Agricultural Credit and Financing were that despite agriculture being the biggest enterprise in which more than 80% of the Ethiopian population is engaged, it gets a very small share (10-15%) of the total loan given in Ethiopia. This is mainly due to lack of awareness by the bankers about the agricultural enterprises (since very few agricultural professionals work in the banks) and resulted in general thinking that agriculture is a risky business. To this effect, in addition to the one volunteer assignment for assessing the problems, two training assignments were developed on agricultural lending and executed by four volunteers at different times. Loan officers and credit analysts for all public and private banks in the country were trained at the head quarters in Addis Ababa in the first assignment and at regional levels in the second assignment. Although no quantitative data has been yet collected, there are indications that there is an increase in agriculture lending in the public and cooperative banks and some private banks have also started lending to a few agricultural enterprises (according to EBA).

EBA has acknowledged, however, that because Ethiopian agriculture is characterized by smallholdings which are numerous, scattered and difficult to monitor, banks are very reluctant to consider the sector for financing. This may constrain the banks from adopting all the recommendations made by volunteers and achieving the required impact on the agricultural operators in a very near future. As a panacea to this and to encourage banks to lend agricultural business, the EBA has indicated the importance of a guarantee scheme by the government and other partners as proposed by volunteers. EBA is also eager to make use of the strategic plan developed by one volunteer in order to strengthen itself and render more efficient service to members of the association.

Broader impacts beyond scope of focus areas: VSU-FtF has been working with partner organizations by providing technical assistances to specific areas in their broader development objectives. Most of the partners were USAID supported programs mandated to do development projects that increase the economic income of small holder farmers by transforming the production system from subsistence to market oriented enterprises. The mandate of the partner organizations is much broader and comprehensive than that of FtF's assistances. Volunteers fielded by VSU's FtF have significantly contributed to the overall success of the broader undertakings of partner organizations. For example, FtF volunteers were largely responsible to the establishment of the ESGPIP project itself, and made further contributions to its activities it carried out later**.**

Apart from the technical support volunteers provided to improve some sectors of the Ethiopian agriculture, the people to people contacts created by the FtF program has created a significant understanding of both countries. Many volunteers expressed significant changes of opinions from what they have perceived about Ethiopia before to the new thinking they developed after visiting the country. On the other hand, FtF program has strengthened the positive image of Ethiopian towards U.S. citizens. This is especially the case when Ethiopians see volunteers traveling to remote areas to help them.

Failures- reasons for lack of success: As indicated above during FYs 03, 04 and 05 volunteers` assignments focused in capacity building in both Eritrea & Ethiopia for which it has been difficult to measure impact and report success. The termination of USAID presence in Eritrea also made it difficult to follow on the impact of volunteer recommendations there.

Some assignments in Ethiopia also dealt with broad issues that led to recommendations demanding for more information gathering to see any impact. This information may have to be obtained through further study or an assessment that may take years. In some instances the issue for which recommendations have been made may involve a number of stakeholders. Bringing together such diverse groups and make them take a common stand on the issue can be an uphill task. In other instances, some recommendations attach factors such as population pressure to be solved first before one can see any impact in the foreseeable future. One volunteer expressed such a situation by saying “I see no significant progress possible without reducing the population pressure on these resources”. A case in point is an assignment on range land management where population pressure plays a major role in the utilization of rangeland in a sustainable way.

The responsibility of implementing recommendations lies at large in the hands of the hosts. Depending on the type of recommendations the hosts may implement some by themselves while others need technical assistance from other organizations. For example, the strawberry farms can easily implement the recommendation on hygiene practices without the help of others. But, need the assistance of others in implementing the soil and water management recommendations. But implementing only part of a package of recommendations can not bring the desired outcome and thereby impact.

In some instances FtF relied on partners for impact data. Some provided data and success stories have been written on it. In other instances the activity conducted by volunteers becomes part of a large number of activities of partners that it has been difficult to produce any meaningful impact data out of it.

Global phenomena may have also contributed to lack of impact in some instances. The recent increase in feed prices, which has resulted in the increase of the price of ingredients used for preparing animal feed, has drastically changed the production, supply and demand equation. A volunteer’s recommendation, of ways of diversifying milk buyers to sell the excess milk produced by farmers, can not any more be

implemented because this time the milk supply has gone down so much that farmers are not facing lack of market for their milk.

Although assessment for the feasibility of electronic payment system by a volunteer indicated that it is much more feasible and urgently needed for the currently fast moving economic growth in the country, it could not be moved further because the volunteer concluded that it needs longer term consultancy than the one provided by FtF volunteers in short term basis.

One of the major challenges for the project was obtaining impact data collected by partners who have direct contact with hosts. Partners carry out much more activities than the ones FtF participated and their data collection system is designed to encompass their comprehensive activities. Furthermore, the time they collect data for their purposes usually did not fit the need of the FtF. The baseline data some partners provided was so cumbersome that FtF could not take advantage of using it. It was not because some partners could not supply FtF the necessary data; it was rather, the differences in magnitude of our activities that created technical difficulties in using them. However, despite some difficulty in sharing impact data, working with partners has saved VSU's FtF a lot in local transport cost for volunteers and other expenses related to local logistics.

Experience with sub-grantees: ACDI/VOCA, sub-grantee of the VSU's FtF program, initial mandate was limited to providing support to VSU in the setup and management of the program. Later on it became a technical assistance partnership through sub-agreement amendments which redefined the organization's scope of work in July 2004 and June 2007. Per the most recent amendment in 2007, ACDI/VOCA was involved in fielding of volunteers, and developing scopes of work for volunteers to be fielded by VSU. The first sub agreement ended after fielding of three of the planned fourteen volunteers. The second agreement came to an end within a short time after the USAID has temporarily stopped funding the program in 2008. So, participation of ACDI/VOCA in the implementation of VSU's FtF is minimal.

6. MAJOR LESSONS LEARNED

Volunteers fielded by VSU's FtF have technically contributed towards the improvement and growth of small market-oriented enterprises in horticulture, livestock and finances. Volunteers were very effective in introducing specific practices or technologies that can quickly impact the production and marketing of agricultural products in those areas.

The focus areas selected, other than the capacity building which takes long time to show impact, were relevant and timely to Ethiopia's economic development. American volunteers contribute relatively more in market-oriented activities than capacity building which sometimes favored by some partners and hosts. So, future activities of volunteers should focus only in such areas.

There may be a need to further narrow the fields within the horticulture and livestock focus areas so that the work of one volunteer will be advanced by another one in the same specific field. Experience showed that the program is more effective if there is a follow-up activity to previous volunteer work in a specific area over several years.

As a strategy, working with partner organizations relieved VSU's FtF from identifying hosts, gathering baseline data, developing scopes of work, and transporting volunteers locally. Working in partnership always helps to accomplish the tasks of both parties at a low cost. However, there should be functional system of sharing data and other information between a partner and FtF implementer. An agreement should be developed at the beginning of the partnership.

Our experience also showed that any FtF project even if it reaches hosts through partners should have its own M&E personnel. This person should directly work with hosts to gather data on the implementation of volunteer recommendations. The M&E person should be highly mobile to reach the various project sites as frequently as needed.

VSU-FtF has enjoyed working with USAID-Mission in Ethiopia. The Mission has been instrumental in identifying appropriate partners among development projects funded by USAID. VSU-FtF sends the scope of work developed for an assignment to the Mission for comments. VSU-FtF also notifies the Mission about volunteers' schedule, arrange for debriefing at the completion of volunteer assignments, and submit copies of final reports. Overall the relationship between VSU's FtF and the Mission was beneficial for the project.

7. RECOMMENDATIONS FOR THE FUTURE

Experiences with FtF, in the last five years of implementation showed that the program has increasingly got acceptance by not only by those who are directly involved in the program and received the volunteers' assistance, but also by government officials at various levels and other stakeholders in the agricultural development sector. Its contribution is highly valued by hosts, partner organizations, agricultural development workers of federal and regional agricultural bureaus, emerging commercial farm enterprises, and those engaged in agribusinesses and agro-processors. More impacts are expected in the near future from those FtF assignments completed towards the end of the project. It is hoped that the partners and host institutions will follow-up their target groups implementing volunteers' recommendations and assess the impacts even after the phasing out of the program and acknowledge in appropriate way.

The continuation of this program in Ethiopia is, therefore, of prime importance to the government's effort to transform the agriculture to a more productive and market oriented enterprises. The experiences already gained in this completed FtF program will be highly valuable for better implementation of a new FtF program in the country. More recommendations have been given above in Section 6.

With respect to measuring program economic, organizational, financial sector and environmental impacts stipulated under LOP Tables 5 and 6, the program would recommend conducting independent impact survey under stratified sampling to arrive at figurative measures. However, there are also proxy indicators that demonstrate better program achievement as stated in the various success stories, improvement in livelihood and recent agri-business financing.

The Ethiopian Bankers Association has acknowledged that though the Ethiopian agriculture is characterized by smallholdings which are numerous, scattered and difficult to monitor, banks are very reluctant to consider the sector for financing. This may constrain the banks from adopting all the recommendations made by volunteers and achieving the required impact on the agricultural operators in a very near future. As a solution to this and to encourage banks to lend agricultural business, the EBA has indicated the importance of a guarantee scheme by the government and other partners.

8. ANNEXES

Annex 1. Standard Indicator Tables

Table 1a: Farmer-to-Farmer Program Volunteers FY 2003 - FY 2008

Implementing Agency	Geographic Region	Country	Focus Area	No. of Volunteers																															
				Male						Female						Total						Number of Volunteer Days Completed						Estimated FTF Program Expenditures*						FTF Program Cost/ Volunteer-Day**					
				Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total
VSU	East Africa	Eritrea	Agrl. Service Development		2				2								2				2		80				80		75847				75847		948.1				
			Farm diversification		1				1		1				1		2				2		47				47		44560				44560		948.1				
		Ethiopia	Agrl. Service Development		5			1	6								5			1	6		85			21	106		80588			19910	100498		948.1			948.1	
			Farm diversification	1	3				4		1				1	1	4				5	19	90				109	18014	85328				103342	948.1	948.1				
			Horticulture			2	5	3	10				1		1			2	6	3	11			39	120	55	214			36975	113771	52145	202891			948.1	948.1	948.1	
			Livestock			7	12	11	30			2	4	1	7			9	16	12	37			153	273	222	648			145058	258828	210476	614362			948.1	948.1	948.1	
			Agrl. Lending & Credit			1	3	2	6					1	1			1	3	3	7			10	53	51	114			9481	50249	48353	108083			948.1	948.1	948.1	
			Total	1	11	10	20	17	59		2	2	5	2	11	1	13	12	25	19	70	19	302	202	446	349	**1318**	18014	286323	191514	422848	330884	1249583						

*** Estimated FTF Program Expenditures is determined by a formula = Total program expenditure / total number of volunteer days * number of volunteer days in a given focus area or year. The total program expenditure of 1,249,581 USD reported here may change later when all the expenses are tabulated.**

**** FTF Program Cost/ Volunteer-Day is determined as: Total program expenditure per focus area per year / Number of volunteer days per focus area per year**

Table 1b: Farmer-to-Farmer Program Funding Mobilized and Leveraged - FY 2003 - FY 2008

Implementing Agency	Geographic Region	Country	Focus Area	Value of Volunteer Professional Time (US$)						Resources Leveraged by the Grantee/ Volunteers (US$)*						Value of Resources Mobilized by Host (US$)						Estimated Value of Host Contribution (US$)					
				Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total
VSU	East Africa	Eritrea	Agrl. Service Development		37662				37662		3000				3000												
			Farm Diversification		22126				22126		3000				3000												
		Ethiopia	Agrl. Service Development		40015			9886	49901		7500			1500	9000												
			Farm Diversification	8945	42369				51314	1500	6000				7500												
			Horticulture			18360	56492	25892	100744			3000	9000	4500	16500												
			Livestock			72028	128520	104511	305059			13500	24000	18000	55500										1160		1160
			Agrl. Lending & Credit			4708	24951	24009	53668			1500	4500	4500	10500										4240	4841	9081
			Total	8945	142172	95096	209963	164298	620475	1500	19500	18000	37500	28500	105000										5400	4841	10241

*** Resources Leveraged by Grantee/Volunteer is estimated as average number of hours the volunteers spent at home (in the US) preparing for the assignment (which is 25 hours/volunteer) multiplied by average value (USD) of the rate per hour (which is 60USD/Hour)**

Table 2 - Number of Volunteers by Gender and US State of Residence FY 2003 - FY2008

		Year 1			Year 2			Year 3			Year 4			Year 5			Five Year Total		
Regions	States	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Northeast																			
	Connecticut																		
	Delaware																		
	Maine																		
	Maryland										1		1				1		1
	Massachusets																		
	New Hampshire																		
	New Jersey																		
	New York										1	2	3				1	2	3
	Pennslyvania																		
	Rhode Island										1		1				1		1
	Vermont																		
	Washington, DC																		
	Subtotal										**3**	**2**	**5**				**3**	**2**	**5**
Southeast																			
	Alabama													1		1	1		1
	Arkansas								1	1								1	1
	Florida													2		2	2		2
	Georgia													1		1	1		1
	Kentucky																		
	Louisiana				1		1										1		1
	Mississippi										1		1				1		1
	North Carolina							1		1							1		1
	South Carolina																		
	Tennessee													1		1	1		1
	Virginia				4		4	1		1		3	3	1		1	6	3	9
	West Virginia																		
	Subtotal				**5**		**5**	**2**	**1**	**3**	**1**	**3**	**4**	**6**		**6**	**14**	**4**	**18**
Midwest																			
	Illinois																		
	Indiana																		
	Iowa										1		1				1		1
	Kansas																		
	Missouri																		
	Nebraska																		
	Ohio										1		1				1		1
	Subtotal										**2**		**2**				**2**		**2**
Upper Midwest																			
	Michigan													1		1	1		1
	Minnesota							1		1	2		2	1		1	4		4
	North Dakota										1		1				1		1
	South Dakota																		
	Wisconsin							5	1	6	5		5	5	1	6	15	2	17
	Subtotal							**6**	**1**	**7**	**8**		**8**	**7**	**1**	**8**	**21**	**2**	**23**
Rocky Mountain																			
	Colorado										1		1				1		1
	Idaho							1		1	1		1				2		2
	Montana							1		1							1		1
	Utah										1		1				1		1
	Wyoming																		
	Subtotal							**2**		**2**	**3**		**3**				**5**		**5**
West Coast																			
	Alaska										1		1				1		1
	California	1		1										2		2	3		3
	Hawaii																		
	Oregon													1		1	1		1
	Washington							1		1				1		1	2		2
	Subtotal	1		1				1		1	1		1	4		4	7		7
Southwest																			
	Arizona				2	1	3								1	1	2	2	4
	Nevada																		
	New Mexico																		
	Oklahoma				2		2										2		2
	Texas				2		2										2		2
	Subtotal				**6**	**1**	**7**								**1**	**1**	**6**	**2**	**8**
Other	Canada										1		1				1		1
	Necaragua										1		1				1		1
	Subtotal										**2**		**2**				**2**		**2**
	TOTAL	1		1	11	1	12	11	2	13	20	5	25	17	2	19	60	10	70

Table 3a: Farmer-to-Farmer Program Volunteer Assignments By Type of Volunteer Assistance FY 2003 - FY 2008

Implementing Agency	Geographic Region	Country	Focus Area	Technology Transfer						Oranizational Development						Business/Enterprise Development						Financial Services						Environmental Conservaiton					
				Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total
VSU	East Africa	Eritrea	Agrl. Service Development		2				2																								
			Farm Diversification		2				2																								
		Ethiopia	Agrl. Service Development		1			1	2		4				4																		
			Farm Diversification		1				1								3				3	1					1						
			Horticulture				2	3	5				1		1			2	3		5												
			Livestock			2	7	7	16			2	1	1	4			5	7	4	16										1		1
			Agrl. Lending & Credit			1			1					1	1					2	2				3		3						
			Total		**6**	**3**	**9**	**11**	29		**4**	**2**	**2**	**2**	10		**3**	**7**	**10**	**6**	26	**1**			**3**		4				**1**		1

Table 3b: Farmer-to-Farmer Program Volunteer Assignments By Location in Commodity Chain - FY 2003 - FY 2008

Implementing Agency	Geographic Region	Country	Focus Area	Information and Input (pre-production) Support Services						On Farm Production Farmers						Processing (including primary and final product transformation, storage, transportation)						Marketing (including branding, advertising, promotion, distribution, sales)						Environmental Conservaiton						Overall Total Number of Volunteer Assignments					
				Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total
VSU	East Africa	Eritrea	Agrl. Service Development								2				2																			2				2
			Farm Diversification								2				2																				2				2
		Ethiopia	Agrl. Service Development		5			1	6																										5			1	6
			Farm Diversification								1				1							1	3				4							1	4				5
			Horticulture				2		2					3	3				1		1			2	3		5									2	6	3	11
			Livestock			4	12	1	17			2		2	4			2		7	9			1	4	2	7									9	16	12	37
			Agrl. Lending & Credit			1	3	3	7																											1	3	3	7
			Total		**5**	**5**	**17**	**5**	32		**5**	**2**		**5**	12			**2**	**1**	**7**	10	**1**	**3**	**3**	**7**	**2**	16							**1**	**13**	**12**	**25**	**19**	70

Table 4a Farmer-to-Farmer Program Number and Types of Host Institutions - FY 2003 - FY 2008

Implementing Agency	Geographic Region	Country	Focus Area	Cooperatives and Associations						Individual Private Farmers						Other Private Enterprises						Non Profit, Public Interest NGOs						Public and Private Education Institutions						Rural Financial Institutions						Public Sector Technical Agencies						Total Number of New Host Institutions					
				Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total
VSU	East Africa	Eritrea	Agrl. Service Development																																				2					2					2
			Farm Diversification																																				2					2					2
		Ethiopia	Agrl. Service Development																																		5			1	6		5			1	6
			Farm Diversification		2				2							1					1		2				2															1	4				5
			Horticulture									2	5	1	8				1	2	3																					2	6	3	11
			Livestock			2	3	6	11			4	10	2	16			1	1	3	5																					9	16	12	37
			Agrl. Lending & Credit			1		3																																		1	3	3	7
			Total		2	3	3	9	17			6	15	3	2	1		1	2	5	9		2				2										3		3		9	2	2	2	15	1	13	12	25	19	70

* The figueres in this table are the number of volunteers fielded under each group or type of hosts. The total No. of "New Hosts Inst tutions" is taken as the total number of volunteers fielded in the different hosts .

Table 4b Farmer-to-Farmer Program Beneficiaries - FY 2003 - FY 2008

Implementing Agency	Geographic Region	Country	Focus Area	Direct Beneficiaries																		Beneficiaries Receiving Training														Indirect Direct Beneficiaries					
				Male						Female						Total						Male						Female						Total						Male & Female					
				Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total
VSU	East Africa	Eritrea	Agrl. Service Development		60				60		5				5		65				65		60				60		5				5		65				65		1300				1300
			Farm Diversification		225				225		25				25		250				250		225				225		25				25		250				250		2700				2700
		Ethiopia	Agrl. Service Development		617			4	621		75				75		692			4	696		27				27		5				5		32				32		8460			15	8475
			Farm Diversification	11	87				98		38				38		125				136		77				77		36				36		113				113	350000*	11250				361250
			Horticulture			35	409	120	564			5	63	23	91			40	472	143	655					45	45					2	2					47	47			7240	47778	2870	57888
			Livestock			233	6423	256	6912			34	365	78	477			267	6788	334	7389			130	250	160	540			23	55	29	107			153	305	189	647			22987	145670	8012	176669
			Agrl. Lending & Credit			36	20	2	58			3	1	1	5			39	21	3	63				50	63	113				10	4	14				60	67	127			3750000**		3750000**	7500000
			Total	11	989	304	6852	382	8538		143	42	429	102	716		1132	346	7281	484	9254		389	130	300	268	1087		71	23	65	35	194		460	153	365	303	1281	350000	23710	3780227	193448	3760897	8108282

* Assuming 5% of the 7 million pastoralist benefit indirectly from the recommendations on livestock marketing.

**Assuming 5% of the farming community benefit indirectly from the traing of bankers on Agricultural Lending.

Table 5: Farmer-to-Farmer Program Economic and Organiizational Impacts - FY 2003 - FY 2008

Implementing Agency	Geographic Region	Country	Focus Area	Economic Impacts						Organizational Capacity Impacts					
				No. of Relevant Hosts[6]	No. of Hosts Adopting Vol. Recommendations	No. Hosts Reporting Improvement	No. of beneficiaries associated with hosts reporting improvement	Increased incremental net income across all hosts adopting (US$)	Increased gross value of sales (US$)	No. of Relevant Hosts[6]	No. of Hosts Adopting Vol. Recommendations	No. Hosts Reporting Improvement	No. of beneficiaries associated with hosts reporting improvement	Increased Revenue (US$)	Increased Number of New Products and Services
VSU	East Africa	Eritrea	Agrl. Service Development							7					
			Farm Diversification							4					
		Ethiopia	Agrl. Service Development							11					
			Farm Diversification							20					
			Horticulture	313	3*	3*	507		35275**						
			Livestock	597	19	6	854		51100***						
			Agrl. Lending & Credit												
			Total	**943**	**22**	9	**1361**		**$86,375.00**						

*** Information could be obtained only from 3 hosts; 1 coop from FY07 and 2 strawberry commercial farms in FY08**

**** Based on sample survey made in February, 2008, the average gross value of sale of potato per house hold was 205 USD. This is the total sale of the 77 hoseholds plus the gross sale reported last year. VSU-FtF's contribution is estimated to be 40% based on the amount of time spent with the hosts**

***** The gross sale value reported here is only from saleas of inputs (feeds, drugs, and AI services) after VSU-FtF training on agri-business development in the last two years; plus first year sale from pond aquaculture. VSU-FtF's contribution is estimated to be 40% based on the amount of time spent with the hosts**

Table 6: Farmer-to-Farmer Program Financial Sector and Environmental Impacts - FY 2003 - FY 2008

Implementing Agency	Geographic Region	Country	Focus Area	Improved Financial Services (e.g. Credit)							Environment/NRM								
				No. of Relevant Hosts	No. of Hosts Adopting Vol. Recommendations	No. Hosts Reporting Improvement	Number of hosts with loan delinquency rate maintained at less than	Increase in the amount of rural and/or agricultural loans (US$)	Increase in the number of rural and/or agricultural loans	Increase in the value of host's net equity (US$)	No. of Relevant Hosts	No. of Hosts Adopting Vol. Recommendations	No. Hosts Reporting Improvement	Increased incremental net income (US$)	Increase gross value of sales (US$)	Area covered by improved natural resourse management (ha)	Total number of hosts adopting one or more environmental	People with improved safety and working conditions	People with improved environmental services
VSU	East Africa	Eritrea	Agrl. Service Development																
			Farm Diversification																
		Ethiopia	Agrl. Service Development																
			Farm Diversification																
			Horticulture																
			Livestock								314								
			Agrl. Lending & Credit	13	13														
			Total	**13**	**13**						**314**								

Table 7 - Increased Awareness in the U.S. Agricultural Sector Concerning International Agricultural Development

Implementing Agency	Geographic Region	Number of Volunteers Performing Public Outreach Activities						Number of Press Releases to Local Media						Number of Media Events by Implementors and Volunteers						Number of Group Presentations by Implementors and Volunteers					
		Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year Total
VSU			1	3	6	11	21			3		5	8								1	1	5	14	21

Note: Information on volunteer outreach activities presented in this table might not be complete. Presnted here is only those that could be accessed. Sor

Annex 2. Log Frame Table of the Program

Annex 2.1. Capacity Building

	Summary	Indicator (s)	Evidence	Assumptions
Goal	*Build and improve the capacity of government institutions and private enterprises*	▪ Increase in improved service delivery ▪ Increase in income of clients from improved services	▪ # of clients received improved services ▪ # of clients with increased income as a result of receiving improved services ▪ Tracking sheet registering new/improved services ▪ Registration sheet ▪ Income and sales book by clients ▪ Impact assessment report	▪ Host/Partners are devoted to gather information for impact assessment
Purpose	▪ Enhance agricultural education and research system ▪ Improve business development	▪ Number of new agricultural education programs introduced ▪ Number and type of capacity building services offered to	▪ Annual research report ▪ Graduates list ▪ Government economic development reports	▪ Continuing of on-going training education for extension agents is in place. ▪ Strategic partnership with NGOs and MOARD is developed

	Summary	Indicator (s)	Evidence	Assumptions
	of private sector ▪ Integrating extension, research and small business enterprises	agricultural education universities ▪ Amount of investment incurred by agricultural universities ▪ Number of new technologies generated ▪ Number and type of new private enterprises created ▪ Increased income of private enterprises	▪ Financial reports by agricultural education institutions	▪ Agricultural universities and research institutions allocate budget
Outcome	▪ Improved service delivery by cooperative extension agents to beneficiaries ▪ Improved service delivery of agricultural education and research institutions to beneficiaries ▪ Diversified & improved agricultural productivity of private enterprises	▪ Increase in number of beneficiaries received training ▪ Increase in number of qualified direct beneficiaries graduated ▪ Increase in number of agricultural technologies ▪ Improved quality &	▪ Graduation data from farmers` training centers ▪ Farmers testimony ▪ Graduation data from Agri education Universities ▪ Annual research report ▪ Export market report	▪ hosts are willing to implement volunteers` recommendations ▪ Access to rural financial services is improved ▪ Information on regional markets is accessible to target groups ▪ Rural infrastructure such as roads and information technology is improved

	Summary	Indicator (s)	Evidence	Assumptions
		quantity of export produce		and is accessible ▪ Agricultural Universities implement new curriculum
Output	▪ Capacity building for cooperative extension: o Appropriate extension training model developed o Mechanisms for rural extension service delivery developed ▪ Capacity building for educational and research system: o Personnel capable of conducting effective research produced o Personnel capable of operating and maintaining laboratory equipments produced o Agricultural production and marketing curriculum Developed o	▪ # and type of extension training model developed ▪ Proxy indicators on number of extension agents trained ▪ # and type of mechanisms developed ▪ # and type of curriculum developed ▪ # of personnel trained ▪ # and type of training provided ▪ # and type of new businesses emerged	▪ Training modules ▪ Training manuals ▪ Pre-and post training reports ▪ Volunteers technical reports ▪ Curriculum ▪ University and research reports ▪ Government reports	▪ Government policy on agricultural education and research system favors the initiative, and budget is allocated in support of the objectives of the capacity building programs.

	Summary	Indicator (s)	Evidence	Assumptions
	▪ Capacity building for private enterprises o New market oriented business area developed			
Activities	▪ Create partnership with partner organizations and hosts engaged in horticulture development programs and orient VSU-FtF focus area and its objective ▪ Conduct meetings with partners on the type of technical assistance to be delivered to partners target beneficiaries ▪ Develop SOW to assign a volunteer to provide capacity buildings development specific subject ▪ Post the SOW on a website to look for volunteers ▪ Collect CV and screen out relevant volunteer for conduct the assignment based on the SOW	▪ Partnership developed ▪ Number of meetings conducted between local VSU employees and partners ▪ SOW stating the purpose of a particular volunteer assignment ▪ Posting the SOW on website ▪ Number of volunteers applying to conduct the assignment	▪ Memorandum of Understanding (MOU) ▪ Minutes of the meeting ▪ SOW on file ▪ VSU-FtF website ▪ CV's on file	▪ VSU-FtF program focus area is in line with partner's goal and the partner is willing to dedicate requesting volunteers and develop a SOW ▪ If a volunteer specializing on the various aspects capacity building in coops extension, curriculum development and diagnostic service laboratory is available

Annex 2.2. Horticulture Development

	Summary	Indicator (s)	Evidence	Assumptions
Goal	Increasing productivity and market success of horticulture production through enhancing the participation of small producers and commercial farmers.	▪ Increase in sales and number of market outlets. ▪ Increase in asset acquisition of small producers.	▪ Impact data comparing baseline and end line data ▪ Proxy indicators of improved living standards. ▪ CSA reports	▪ Embraced by the overall government development plan.
Purpose	▪ Introduce low cost vegetable production, processing, and access to market technologies such as:- o Introduction of low cost irrigation systems, o developing tissue culture techniques for wide and fast dissemination of vegetable and fruit crop planting materials to farmers o develop post-harvest processing and value adding practices	▪ Type and number of technologies introduced ▪ # of farmers adopting new and improved technologies ▪ # of demonstrations made.	▪ Lists of farmers adopting improved or new technologies ▪ Impact assessment reports ▪ Success stories ▪ Digital pictures ▪ Testimonies	▪ The new technology is within the capacity of adopting farmers ▪ Availabilities of early adopters for new technologies disseminate to others.
Outcome	▪ Improved horticultural and fruit crops production system.	▪ Number of cooperatives, farmers and agricultural service providers	▪ Dissemination of improved practices ▪ Cooperatives	▪ Hosts are dedicated to implement volunteers' recommendation and

	Summary	Indicator (s)	Evidence	Assumptions
	▪ Improve the business development capacity of cooperatives, farmers and agricultural input suppliers	adopting volunteers recommendation ▪ Number of cooperatives, farmers and agricultural service providers exhibited high sales ▪ Increased market out lets for horticultural and fruit produces. ▪ Increased financial income of cooperatives, farmers and agri-businesses. ▪ Increased asset of small producers ▪ Increased number of new producer's cooperatives, commercial farmers and input suppliers. ▪ Low rejection rate of horticultural products	financial and physical records ▪ Input suppliers and coops financial and sales records ▪ Success stories ▪ Digital pictures ▪ Farm records ▪ Extension agents testimony ▪ Membership registration sheet ▪ Type of coop membership service introduced ▪ Past input suppliers data, if any ▪ Rejection registration books	availability of field level technical support ▪ There is good record keeping system. ▪ Access to rural financial services is improved ▪ Information on regional markets is accessible to the target groups
Output	▪ Provision of hands on technical support in terms of trainings, demonstration of new and	▪ Number and type of training and technical supports provided	▪ Training reports and demonstration conducted	▪ Target groups are motivated and willing to adopt new technologies

	Summary	Indicator (s)	Evidence	Assumptions
	improved technologies for horticulture production to increase adoption rate by farmers ▪ Provide recommendations ▪ Prepare manuals, reports & seminars	▪ Number of farmers, cooperatives and agricultural service providers received training on new/improved technologies	▪ Attendance sheet ▪ Digital pictures ▪ Volunteers' reports	
Activities	▪ Create partnership with organizations implementing USAID funded horticultural projects to field volunteers ▪ Conduct meetings with hosts/partners on type of technical assistance to be delivered to target beneficiaries ▪ Develop SOW on horticulture and fruit crops development specific subject ▪ Advertise the SOW ▪ Collect CV of volunteers and Evaluate. ▪ Volunteers preparations according to the SOW communicating with VSU-FtF staff and hosts/partners	▪ Partnership developed ▪ Number of meetings conducted between local VSU employees, hosts and partners ▪ SOW stating the purpose of a particular volunteer assignment ▪ Recruiter's report ▪ Volunteers' CV ▪ Number of volunteers applying to take the assignment ▪ Number of email exchanges between volunteers, FtF staff, and host/partners.	▪ Number of SOWs developed collaboratively ▪ SOW on file ▪ Recruiters' file ▪ Accepted file CV's on file ▪ Volunteers report ▪ Time spent on preparation of assignments	▪ Hosts/partners staff work cooperatively with VSU's-FtF personnel in developing SOW ▪ Volunteer Experiences are relevant to developing countries like Ethiopia.

Annex 2.3. Livestock Development

	Summary	Indicator (s)	Evidence	Assumptions
Goal	*Increasing productivity and market success of livestock sector through enhancing participation of small producers and commercial farms.*	▪ Increase in sales. ▪ Increased market outlet ▪ Increase in asset acquisition of small producers and commercial farms	▪ Impact data comparing baseline and end line data ▪ Proxy indicators of improved living standards. ▪ CSA reports	▪ Embraced by the overall government development plan.
Purpose	▪ Improve input and service delivery to the livestock sector. ▪ Enhance value added processing practices for livestock and livestock products ▪ Develop market system for livestock and livestock products	▪ Volume of livestock & livestock products marketed through markets ▪ Number of technical assistances offered ▪ Number of retailers input & service delivery ▪ Number & type of new products developed	▪ Production & market reports. ▪ Impact data ▪ Technical reports ▪ Change in consumption habits of consumers survey reports	▪ Value added products are customers driven ▪ The new technology is within the capacity of adopting farmers ▪ Availabilities of early adopters for new technologies disseminate to others
Outcome	▪ Improved market access of livestock production of partners target groups ▪ Improved inputs and services provided. ▪ Improved business development capacity of selected input suppliers	▪ Number of cooperatives, farmers and service providers adopting volunteers recommendation ▪ Number of cooperatives, farmers and service providers exhibit high sales	▪ Cooperatives financial and physical records ▪ Input suppliers financial and sales records ▪ Success stories ▪ Digital pictures taken demonstrating	▪ Hosts are dedicated to implement volunteers' recommendations and application of field level technical support ▪ There is regular follow up to

	Summary	Indicator (s)	Evidence	Assumptions
		▪ Growth in membership of cooperatives ▪ Increase in asset structure of small producers ▪ Increase in sales of small producers & commercial farms ▪ Increase in sales and number of input suppliers ▪ Number of new cooperatives ▪ Low rejection rate of livestock products	success of clients based on the volunteers training ▪ Farm records ▪ Extension agents testimony ▪ Membership registration sheet ▪ Producers & service providers status reports ▪ Producers and service providers sales book ▪ Rejection rate registration sheet	implement volunteers' recommendation ▪ Regular monitoring of records, farm books, cooperative and input suppliers financial books
Output	▪ Provide business development and management training and field level technical support to individual farmers, cooperatives, agri-businesses and commercial farms. ▪ Assessment of field resources, feed formulations, and feed plant management ▪ Development of dairy and small ruminant production, processing and marketing	▪ Number and type of trainings provided to livestock cooperatives, individual farmers, commercial farms and service providers ▪ Number of participants attended trainings disaggregated by the type of engagements ▪ Number and type of training manuals	▪ Training reports ▪ Training materials ▪ Attendance sheet ▪ Volunteers reports ▪ Training manuals developed ▪ Technical support report ▪ Digital pictures	Target groups are motivated and willing to adopt new technologies

	Summary	Indicator (s)	Evidence	Assumptions
	systems ▪ Training and demonstration of livestock waste management through composting ▪ Recommendations on meat processing and quality assessment ▪ Improvement in aquaculture production and marketing	developed ▪ Number of field visit for technical support conducted by volunteers		
Activities	▪ Create partnership with organizations implementing USAID funded horticultural projects to field volunteers ▪ Conduct meetings with hosts/partners on type of technical assistance to be delivered to target beneficiaries ▪ Develop SOW on horticulture and fruit crops development specific subject ▪ Advertise the SOW ▪ Collect CV of volunteers and Evaluate. ▪ Volunteers preparations according to the SOW communicating with VSU-FtF staff and hosts/partners	▪ Partnership developed ▪ Number of meetings conducted between local VSU employees, hosts and partners ▪ SOW stating the purpose of a particular volunteer assignment ▪ Recruiter's report ▪ Volunteers' CV ▪ Number of volunteers applying to take the assignment ▪ Number of email exchanges between volunteers, FtF staff, and host/partners.	▪ Number of SOWs developed collaboratively ▪ SOW on file ▪ Recruiters' file ▪ Accepted file CV's on file ▪ Volunteers report ▪ Time spent on preparation of assignments	▪ Hosts/partners staff work cooperatively with VSU's-FtF personnel in developing SOW ▪ Volunteer Experiences are relevant to developing countries like Ethiopia.

Annex 2.4. Agricultural Financing

	Summary	Indicator (s)	Evidence	Assumptions
Goal	*Increase access to financial support to boost agricultural production and marketing.*	▪ Policy changed and/or amended ▪ Increased agricultural financing.	▪ Policy/procedure documents and manuals ▪ National Bank's reports	▪ Financial institutions are willing to change their policy/procedure towards lending to agri-business ▪ The policy in place ▪ Agriculture become a competitive economic sector
Purpose	▪ Increase knowledge of financial institutions to diversify their services to agricultural lending. ▪ Improve the technical capacity of financial institutions in analyzing agri-business credit applications ▪ Introduce new technologies of payment system ▪ Increase performance of Ethiopian Bankers Association	▪ Number of clients received agri-business credit ▪ Change in knowledge, attitude, practices of ag-lending ▪ Amount of loans disbursed to agri-business ▪ Number of loans approved and disbursed to agri-business ▪ Type of new technologies introduced ▪ Strong association	▪ Procedural manuals ▪ Follow up reports ▪ Loan approving books ▪ ATM card, visa cards, loan processing computer programs, etc ▪ EBA's influence on governments financial policy towards agricultural funding	▪ Financial institutions have adequate loadable funds for agri-business financing ▪ Financial institutions are willing to invest in new technologies for agri-business development ▪ Conducive environment for EBA's strength.

	Summary	Indicator (s)	Evidence	Assumptions
		(EBA) formed		
Outcome	▪ Improve the efficiency of service delivery of financial institutions to agricultural producers and agri-business operators ▪ Increase agricultural credit portfolio of financial institutions ▪ Decrease the reluctance of financial institutions to agri-business credit applications ▪ Farmers and agribusiness get sufficient funds to improve their operations.	▪ Number of new agricultural loan applications ▪ Number of new agricultural loans processed	▪ Credit committee minutes ▪ Agricultural credit portfolio status report ▪ Monthly loan output reports ▪ Annual reports of financial institutions ▪ Success stories ▪ Impact data ▪ Digital pictures	▪ Lending units of financial institutions decreased reluctance to process agri-business credit application ▪ Farmers are motivated to borrow money from financial institutions
Output	▪ Assessment of problems associated with agricultural lending in financial institutions. ▪ Training agricultural lending and risk management training ▪ Feasibility study of introducing new technologies (electronic payment system) ▪ Business plan development for Bankers Association	▪ Number of training ▪ Number of participants attending each trainings ▪ Number and type of feasibility assessment conducted ▪ Volunteers recommendations adopted	▪ Volunteers training reports ▪ Attendance sheet ▪ Digital pictures ▪ Feasibility assessment report ▪ Minutes of EBA board meetings ▪	▪ Members of the EBA is willing the cover the local costs associated with the training ▪ Members of the EBA are interested to get the training on agricultural lending and risk management ▪ Banks are willing to take the feasibility assessment, and introduce new technologies based on the

	Summary	Indicator (s)	Evidence	Assumptions
				recommendations
Activities	▪ Create partnership with Ethiopian Bankers Association (EBA) and orient VSU-FtF focus area ▪ Conduct meetings with EBA on the type of trainings and other technical assistance to be delivered to financial institutions ▪ Develop SOW for agricultural lending and risk management training, the feasibility of new payment technologies, and business plan development ▪ Advertise the SOW ▪ Collect CV and evaluate ▪ Volunteers' preparations according to the SOW ▪ Communications between volunteers, hosts/partners and VSU staff.	▪ Partnership developed ▪ Number of meetings conducted between VSU-FtF staff and EBA ▪ SOW stating the purpose of a particular volunteer assignment ▪ Recruiter's report ▪ Number of volunteers applying to take the assignment ▪ Number of email exchanges between volunteers, FtF staff, and host/partners	▪ Memorandum of Understanding (MOU) ▪ Minutes of the meeting ▪ SOW on file ▪ Recruiter's file ▪ CVs accepted ▪ Volunteers report ▪ Time spent on preparation of assignments	▪ VSU's FtF program focus area convinced EBA to dedicate on increasing agri- business lending and in a position to develop understanding on agri-business lending risk management ▪ Volunteer specializing on agricultural lending and risk management have enough experiences in situations in developing countries.

Annex 3. Questionnaire for Volunteer Outreach

Most VSU-FtF volunteers have indicated in their final reports that they would deliver public outreach activities, regarding the assignment they had carried out in Ethiopia, to various public & private organizations, university students or write on newsletter, local newspaper etc. Some have done so and sent details of the activities. This is, therefore, to request volunteers to fill the questionnaire below & send to the following address as soon as possible

Mary Albrecht: E-mail albrechtrm@prodigy.net

Part I: About volunteer and assignment

Name of volunteer _____

Type of Assignment Focus Area (Livestock, Horticulture Banking or Others (specify) _____

Assignment Date (Month & year) _____

Type of assistance provided to host _____

_____

Part II: Type of public outreach activity: Oral Presentation, Newsletter, Newspaper, Others (specify)_____

A. If oral presentation (seminar, community gathering, debriefing etc), please provide information on

Title of presentation_____

Date _____

No. of Audiences_____

Content of presentation _____

B. If an article on Newsletter, please provide information on

Title of Newsletter_____

Title of Article _____

Date Article published _____

Expected No. of readers _____

Content of Article _____

C. If an article on Newspaper, please provide information on

Name of Newspaper_____

Title of Article _____

Date Article published _____

Expected No. of readers _____

Content of Article _____

D. Others, specify_____, please provide information on

Type of medium information is disseminated_____

Date of dissemination_____

Title of disseminated information_____

Content of information_____

Part III. Other information you want to provide (use back of page if needed)

_____

Thank you for taking your time to fill the questionnaire

Annex 4. List of Major Reports and Studies

- VSU-FtF Farmer to Farmer Program in Ethiopia. Poster Displayed at FtF Implementers Workshop. Feb. 19-22, 2007. Cairo, Egypt.
- Farmer to Farmer Program in Ethiopia: A brochure prepared by Ms. Sharon Blacket.
- Annual report FY 2006
- Semi-Annual report FY 2007
- Annual report FY 2007
- Semi Annual report FY 2008
- Volunteers' reports
- Success stories

Annex 5. Success Stories

FARMER TO FARMER TRAINING MAKES A DIFFERENCE

As a result of training in feed rationing and balancing, Ethiopian livestock feed dealer Sanford Legesse increased his gross sales by 41 percent and his net profit by 29 percent in just six months. Sanford operates in the Chancho District of Ethiopia. Formerly a development agent with the government, he has 12 years experience, the last six as a private feed dealer. Land O' Lakes selected Sanford as a lead feed dealer to improve service delivery to small holder and commercial dairies in the District. Training was provided in 2006 and 2007 through the Ethiopian Dairy Development Project (EDDP) funded by USAID. The training was conducted by Virginia State University's USAID-funded Farmer-to-Farmer (FtF) program.

Virginia State University's FtF program recruit and livestock feed expert, Robert Albrecht traveled to Ethiopia and provided hands-on practical training on feed formulation and balancing to EDDP-selected input suppliers. The objective was to increase efficiency and enhance the volume of feed sales through optimal mixes to benefit Ethiopian dairy producers.

Sanford, who had never received formal training in the fundamentals of optimal feed rationing and balancing, learned how to formulate feed to satisfy different dairy categories – heifers, milking cows and calves; and how to formulate new products such as mineral blocks and bag tying.

Albrecht also evaluated Sanford's marketing strategy and advised him on ways to enhance his distribution and promotional elements. Since his location was inconvenient for his rural customers, Sanford opened a new shop near a large central market in the rural community. Consequently, his customer base and feed sales increased. With Albrecht's encouragement, Sanford began to use testimonials and endorsements from his "community leader" customers to support the notion that his feeds increased milk production and thereby, increased income. This helped to influence the purchasing decisions of farmers in the area.

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Results Achieved:

- Sanford increased his gross income threefold to 1,400 USD per month. As well, his equity working capital increased to 2,500 USD from the initial leverage of 250 USD.
- Sanford paid school fees for his two children and bought a television set for his family. He also offered employment opportunities to three jobless youngsters from his rural community. For this noble gesture, he was recognized by the local community.
- Sanford also began selling new products such as molasses, vitamin premixes and mineral blocks to satisfy his increased customer base.

Attribution of Credit for Impact:

The success enjoyed by Sanford and many of the other dairy farmers in the EDDDP is attributed directly to the joint efforts of LOL and VSU/FtF. Comparing the number of hours of training and technical assistance provided, LOL calculates that VSU volunteer Bob Albrecht spent 24 hours with Sanford while LOL staff spent 45 hours with him. Based on this calculation, VSU is credited with 35 percent and LOL with 65 percent of the total effort.

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Financial Management Training Led to Improved Efficiency and Sustainability in Private AI Service Delivery.

Yohannes Legesse is a private AI technician in Ethiopia delivering AI and animal health care services to small holder and commercial dairy farms. Yohannes worked as a private business operator since 2004. Prior to his engagement as a private business, he was employed as a government AI technician for 12 years. He was laid off from government office in 2004 as a result of government restructuring process.

Yohannes is selected as a lead AI technician targeted by LOL-EDDP since March 2006. In 2006, LOL in collaboration with VSU-FtF program funded by USAID offered small agri-business management training and field level TA to dairy input suppliers.

During the field visit, FtF volunteer Jerry Nolte assessed his financial performances and noted that Yohannes had been operating in a way leading to voiding the business. Prior to the assessment, Yohannes offered AI service for Birr 20 per insemination which resulted in only Br 0.40 (0.04 $) net profit margin.

Jerry developed a business budget model helps determine the unit cost and profit margin for a single AI service delivery. The budget analysis indicated that AI service at Birr 20 per insemination had negative profit margins that at times lead to bankruptcy. This had been due to the fact that Yohannes had never determined the unit cost of service delivery that considers all cost line items.

Before Jerry met him, Yohannes had no any prior experience how to determine expenses and arriving at determining profit margin. The client only considers visible costs such as fuel, cost of liquid N2, and cost of semen. He never considers costs of capital budget, inspection and circulation fee, license fee, radius of operational area versus service cost.

After Jerry's assistance the client learns how to consider service charge against radius of catchments area and cost build up system to arrive at profit margin. As a result, the client rescued the business from threat of failure.

Since April 2006, Yohannes revived and getting flourished through increased profit. As a result, he was able to buy important equipment that further enhances his business profitability per Jerry's recommendation.

Before Jerry's assistance, he had only small liquid N2 tanker (4lts) which has caused to increased running costs from back and forth move for topping up the tanker to ensure the safety of the semen. Jerry advised him to buy a big N2 tanker (32 Lts) which reduces the running cost from back and forth at least

topping up once in a fort night than every other day. In terms of cost this has at most reduces unproductive travel for topping up by 200 km per week nearly 10USD per week. This turns out to be 480 USD per year.

After his training, Yohannes began to offer efficient AI services to his clients. Prior to the purchase of his large liquid N2 tanker to ensure the viability of semen, many of the farmers in his area were reluctant to use AI because of the low conception rates. The number of AI calls per month in the beginning for Yohannes averaged about fifty per month. However, later on conception rates reached seventy percent by the year 2007. These high conception rates and seeing the offspring from cows that were artificially inseminated convinced farmers begin to use his AI service exclusively. He said "One key to my success is that I visit farms and do not wait for them to contact me. I keep records and know when the farmer is going to need my AI services".

Jerry and Yohannes working on financial analysis of AI servicing

This strategy had had a multiplier effect in increase income for better livelihood among other 6 fellow private AI technicians operating around AA through the purchase of big liquid N2 tanker.

These improvements**,** and the success of Yohannes and other pond AI technicians are the results of the joint efforts of VSU/FtF, USAID-funded project implemented by Land O'Lakes implementing Ethiopia Dairy Development Project. After evaluating the assistance that volunteers recommendations, it is estimated that VSU's share of the overall impact is 40 percent despite it is difficult to appropriation.

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VSU Volunteers Positively Impact Ethiopian Potato Growers

Nebiyu Ayalew, a 50-year-old household head of eight resides in Sawsa Godir Kebele (subdivision) of Sekela Woreda (county) in the Amhara National Regional State. He benefited from Virginia State University's (VSU) technical support provided through the USAID-funded Farmer to Farmer (FtF) program. Potato, maize, barley, teff (a cereal crop indigenous to Ethiopia) and wheat are the major crops that Nebiyu cultivates. Nebiyu has been receiving support volunteers for the production and productivity of potatoes since 2006.

To Nebiyu's household, potatoes are an important crop for both home consumption and as a source of income. In the absence of improved varieties and related technical support for potato production systems, Nebiyu's annual potato production and cash income were less than 3,520 pounds per acre and $93, respectively. Due to this low yield, Nebiyu said his household had a hard time meeting the production level that satisfies home consumption and income needs.

Volunteers' recommendations on the importance of constructing a diffused light store (DLS), advice on sowing methods, plant spacing, top dressing (fertilizer application methods), curing the potato seed from being rotten through removing the upper part of the plant, compost preparation from potato residuals and post harvest (storage management) were key to the improvement of Nebiyu's potato farming.

As a result of improved seed supply from the Regional Agricultural Research Institute and technical supports given by volunteers (as indicated above), Nibeyu could produce 13,640 pounds per acre, which is a 288 percent increase in productivity per acre. After Nebiyu had received technical support (including the supply of improved seed), his annual cash income generated from the sale of potatoes has increased, on average, from $93 to $436, which is an increase of 369 percent.

This increased income generated from potatoes has enhanced the living standard of Nebiyu's household. Maintaining food security in the household was challenging at times before Nebiyu had access to improved potato seed and technical support provided by VSU/FtF volunteers. Insufficient potato production and difficulties in securing other food items from the market due to lack of cash income characterized the daily life in Nebiyu's household. The household could not even use edible oil, as they did not have enough income to buy such food items from the market. Nebiyu bitterly remembers the feeling of desperation.

Diffused light will keep seed potatoes safe for up to six

Thanks to the support he received for the production and marketing of potatoes and the subsequent increase in his income, Nebiyu's household has food security and an improved diet. Now, he is able to buy other food items such as edible oil, and has bought additional livestock and beehives (two horses, one ox and two beehives.) Moreover, Nebiyu has managed to invest $178 from the income earned from the sale of potatoes, for his two sons who were admitted to the athletic club sponsored by the Ethiopian Electric Power Corporation in Addis Ababa.

"Not only my household, but also all potato growers in the area today are better off as we are equipped with the necessary knowledge of improved potato production systems**,"** said Nebiyu. "The technical support we've received has greatly empowered us to make better-informed decisions on how to produce, harvest and store potatoes."

The improvements and successes of Nebiyu and other potato growers are the results of the concerted efforts of VSU/FtF and all the other partners. Although it was found that apportioning the contributions made by each party was very difficult (considering the inter-linked assignments carried out by volunteers fielded by VSU/FtF and the relevance of the recommendations they made and were adopted by hosts/beneficiaries), it is estimated the contribution of VSU's volunteer assignments to the overall impact is approximately 55 percent.

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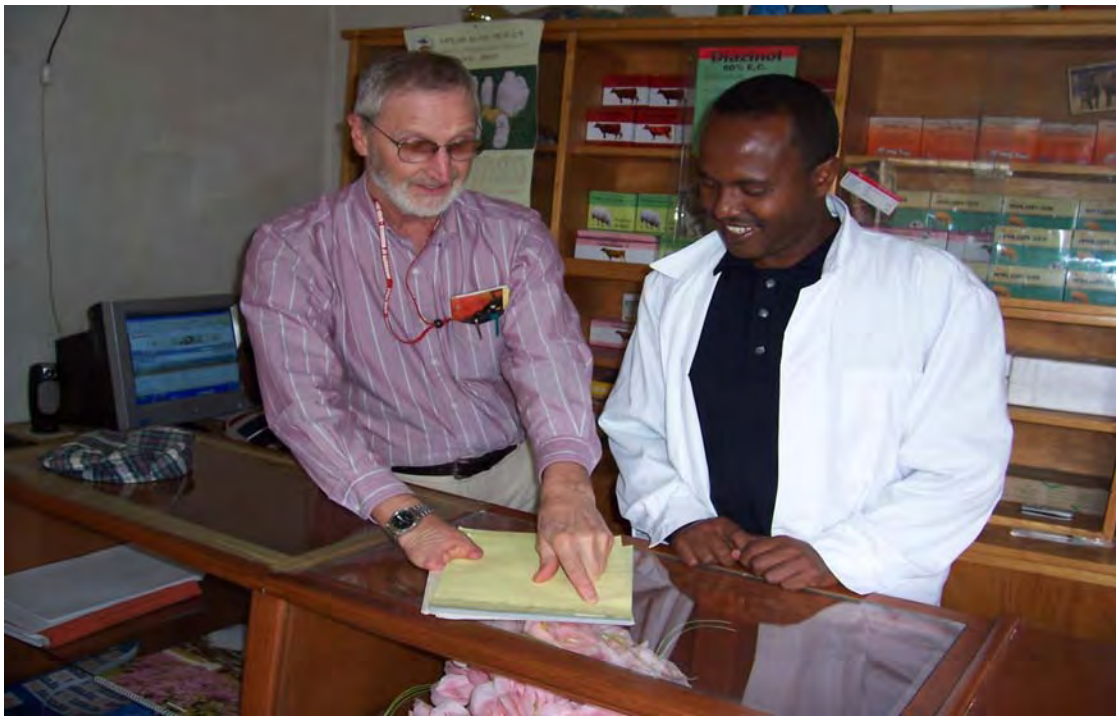
Small-Scale Private Animal Health Care in Ethiopia Made Sustainable

Using small agribusiness management training provided through an assignment by VSU Farmer-to-Farmer Program, volunteer Dr. Jerry Nolte in March 2006, helped animal health product supplier Tekaligne Abebe increase sales by 32 percent and net income by 37 percent in just three months.

Nolte traveled to Ethiopia in March under Virginia State University's (VSU's) USAID-funded Farmer-to-Farmer Program. One of VSU's major activities in Ethiopia is contributing to the success of the USAID-funded Ethiopia Dairy Development Project being implemented by Land O'Lakes (LOL). VSU's volunteer US agribusiness development experts provide hands-on business development training to EDDP-selected input suppliers. The aim is to increase suppliers' profitability and the quality, volume, and sustainability of dairy production in Ethiopia.

Tekaligne Abebe operates an animal health care service and drug supply business in the Chancho District of Ethiopia. Trained as a veterinarian, he has a total of sixteen years professional experience in animal heath care, the last ten years operating as a private vendor. Land O'Lakes selected him as a lead animal health care provider to be targeted by EDDP to improve service delivery to smallholder and commercial dairies in the Chancho District.

Although he had extensive experience with managing his business, Tekaligne had never had formal training in the fundamental techniques of business management. He spent a total of 52 hours in group and one-on-one training with Nolte. With this training, he established a computer spreadsheet-based accounting system to track income and expenses and manage inventory. At the same time, Nolte evaluated Tekaligne's pricing practices and discovered that he was marking up his products by 25 percent. The resulting high prices were making it difficult for Tekaligne to attract buyers in competition with black market suppliers operating in the district. Nolte advised Tekaligne to reduce his mark-up to 10 percent and focus on maximizing volume of sales rather than profit per unit. Increasing his customer base would also help him increase sales of his veterinary services. Nolte also advised Tekaligne to join with other vendors in the district to buy supplies in bulk in order to reduce transportation expense and qualify for bulk discounts.



Results achieved:

- Tekaligne is using a computer spreadsheet to manage his business income, expenses and inventory.
- Tekaligne persuaded other nearby veterinary service providers to join him in a buying club. The buying club succeeded in buying products on behalf of all members and negotiating volume discounts with suppliers, as well as reducing its members expenditures for transportation.
- Tekaligne increased his gross income from drug sales and health care services by 32 percent -- from 25,200 Birr during the first quarter of 2006 -- prior to Nolte's visit - to 33,275 Birr during the second quarter of 2006, immediately following Nolte's visit.
- Tekaligne's net income increased 37 percent –from 4,993 Birr to 6,856 Birr – in the same period.
- Including Tekaligne, Nolte provided training to a total of 44 input suppliers – 11 feed dealers, 20 animal health service providers, and 13 artificial inseminators – including 3 women. It is likely that many of these also increased their sales and profits making use of the training Nolte provided.

Attribution of Credit for Impact:

Tekaligne's success, and that of other dairy sector input suppliers being targeted under EDDP, is a credit to LOL and to VSU jointly. There is no rigorous way to apportion the credit between the two organizations. One informal way to apportion is by comparing the number of hours of training and technical assistance provided respectively by the VSU volunteer and by LOL project staff. In Tekaligne's case, LOL calculates that Nolte spent 52 hours with him while LOL staff spent 68 hours with him during 2006. On this basis, VSU deserves 43 percent of the credit for Tekaligne's success while LOL earned 57 percent of the credit.

VSU Provides Technical Support to Ethiopian Pond Fish Farmers

Molla Getahun, a 48-year-old farmer resides in Gofchima Kebele of Debrealyas Woreda in East Gojjam Zone of the Amhara Regional State. He is head of an eight-member household. It was some 36 years ago that Molla dropped out of school (grade 4) to become a farmer.

In addition to cereal crops which most farmers cultivate, Molla grows different types of fruits and vegetables such as avocado, mango, guava, orange, lemon banana, cabbage beetroot and potato. He said that 50 percent of his annual production is used for home consumption and the remaining 50 percent for sale.

Until recently, fish production was not known in Molla's home or in the community as a whole. But, in 2006, through the technical assistance of researchers and extension agents, Molla developed a fishpond and has stocked 200 fingerlings. With further technical advice and support from volunteers fielded by Virginia State University's (VSU) USAID-funded Farmer to Farmer (FtF) program, Molla learned to properly manage his pond farming.

Volunteers advised Molla about pond management systems including stocking techniques, fertilizing, controlling pond turbidity by planting seedlings, and integrating fish farming with other agricultural activities. This advice was instrumental in improving his fish farming.

It is because of this assistance that Molla was able to harvest 500 fish, since 2006, valued at about $120. Of this, Molla sold 250 fish to earn an income of $59 and the remainder has been used for home consumption. At present, Molla has approximately 1,200 fish in his pond. Apart from its encouraging economic return, Molla's fishpond is now serving as a demonstration site for the nearby schools.

Molla's household credits fish farming as an additional source of food and ~~of~~ cash income. Today, Molla's household prefers fish to chicken (period). Whenever he heads to the pond with his fishnet, all his children follow him happily because they know their father will catch fish for their mother to prepare and serve.

Molla now understands the value of fish as an alternative to regular cereal-based meals. In rural settings, when a young man marries and separates from the household, it is a common practice for him to receive a plot of land from his family for crop cultivation. Nowadays, because of the diminishing size of farms, a household cultivates less than 2.5 acres of land. Such a small land area makes it impossible to share the existing land with a newly-married sibling. Molla is a victim of this plight. When his son married, he was unable to offer him farmland. Instead, Molla developed a fishpond and gave it to his son as a wedding gift. This demonstrates further the acceptance pond fish farming by the community.

Mr. Daniel Theisen, a volunteer, provided training on fish farming.

Molla, using the income earned from the sale of fish, did:

- Construct a barn for his livestock;
- Buy school uniforms for his children; and
- Pay transportation, buy stationery and fund other related expenses for his son matriculating in a degree program in a town called Debre Markos, which is about 150 kilometers from home.

Comparitively speaking, Molla believes that the support he's received has resulted in a 33 percent improvement in his household's standard of living**.**

These improvements**,** and the success of Molla and other pond fish farmers are the results of the joint efforts of VSU/FtF, the AMAREW Project, a USAID-funded project implemented by Virginia Techand and Bahir Dar Fish and Aquatic Life Research Institute. After evaluating the technology that volunteers introduced and the recommendations they made, the Aquatic Life Research Institute estimated that VSU's share of the overall impact is 40 percent.

ADOPTION OF BEST NATURAL RESOURCE MANAGEMENT PRACTICES CONTRIBUTED TO INCREASED INCOME

Compost making as an integral part of agricultural activities and natural resource management contributed to an increase in income for Tigabu, a small-holder dairy farmer in Bahir Dar. When Land O' Lakes (LOL), implementer of the USAID-funded Ethiopia Dairy Development Project (EDDP), requested dairy waste management technical assistance from Virginia State University (VSU), VSU responded. Dr. Jerry Nolte, a dairy waste management expert, was recruited as a volunteer by VSU's Farmer to Farmer (VSU-FtF) program funded by USAID. In April 2007, Nolte provided practical manure management and compost-making training to EDDP lead farmers, teaching them to convert manures from dairy herds and other organic wastes into compost fertilizers for sustainable, high-yield feed production.

Tigabu, a dairy farmer with 15 years experience, had been selected in March 2006 as Land O' Lakes' (LOL) lead/contact farmer to promote dairy extension activities to the surrounding rural community. Tigabu disseminated information on various dairy extension technologies to 20 farmers per LOL's EDDP extension strategy.

Low feed value straw of teff (Ethiopian cereal crop) used for feed by Tigabu prior to intervention.

Tigabu was comfortable with feeding straw and sometimes animal feed to cattle. The feed would be purchased from feed manufacturing companies. Since he had no prior experience in compost making and forage development prior to Nolte's training, it was difficult at first to convince Tigabu to make and use compost as a fertilizer for forage production. However, Nolte was able to persuade him to devote 1.2 acres of his 2.4 acres maize land for the production of Napier grass and use the compost he developed from dairy waste to fertilize the grass. As a result of this conversion from planting corn to forage with compost, Tigabu realized a net return of $65.5 (US).

Results Achieved

- From June to August 2007, milk production increased from 285 gallons to 380.4 gallons. Daily average milk production per cow also rose by 0.5 gallon per day per cow. As a result of this production increment, gross revenue from milk production "before" and "after" the intervention went from $166 (US) to $263 (US) resulting in a marginal increment of $96.7 (US).

- Gross revenue per liter of milk also increased from $0.17 (US) to $0.19 (US). Similarly, net cash profit per lactating cow per day has also increased from $0.67 (US) to $1.13 (US).

Tigabu's daughter is now able to attend school thanks to the increased income of her father's dairy enterprise.

- With the increased income, Tigabu bought a bicycle that helped him deliver milk to Bahir Dar for sale. He rides nearly 9.3 miles roundtrip every day to the Bahir Dar town dairy cooperative to deliver milk in order to get a better price.

- He saved enough to realize his long-time dream of buying a house in a town. He bought it for $1,250 (US). He is now sending two of his children to the nearby primary school.

Nolte provided the training in compost making to 16 other farmers who are expected to follow Tigabu's path to success by increasing their income through compost making and consequent use of this as feed /forage production.

Attribution of Credit for Impact:

Tigabu's success and that of many other dairy farmers being targeted under EDDP, is a credit to LOL and VSU jointly. Although it is difficult to apportion the credit between the two organizations, an informal method is to compare the number of hours of training and technical assistance provided respectively by VSU's volunteer and by LOL project staff. In this case, LOL calculates that Nolte spent 48 hours with Tigabu while LOL staff spent 74 hours with him for follow up during 2007. On this basis, VSU deserves 39 percent of the credit for Tigabu's success while LOL earned 61 percent.

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Annex 6. List of Partners and Their Summary Profiles

AMAREW (Amhara Micro-Enterprise development, Agricultural Research and Watershed Management) is a USAID/Ethiopia Mission-funded initiative established in July 2002 to provide technical assistance in integrated agricultural development in the Amhara National Regional State. The project strengthens agricultural research, extension, watershed management and micro-enterprise development in Amhara in three strategically selected pilot watershed sites and eight pilot food-insecure woredas (districts). Virginia Tech's consortium implementing the project also includes Cornell University and Virginia State University.:

IPMS (Improving Productivity and Market Success of Ethiopian farmers) a five-year project funded by Canadian International Development Agency (CIDA) implemented by the International Livestock Research Institute (ILRI). The project works to improve agricultural productivity and production through market-oriented agricultural development as a means for achieving improved and sustainable livelihoods for the rural population. The project also aims at facilitating the development of partnership arrangements among the various stakeholders in the market chain.

LOL (Land O'Lakes Inc.) is a private, cooperatively owned agribusiness based in the United States. With funding from USAID, Land O'Lakes is implementing the Ethiopia Dairy Development Project (EDDP) to enhance income opportunities for Ethiopian smallholder dairy producers by promoting investment in milk processing and marketing capacity and by expanding the availability of nutritious dairy based foods for Ethiopia's growing urban populations.

ESGPIP (Ethiopian Sheep and Goat Productivity Improvement Program) is a USAID-funded program that seeks to increase small ruminant productivity in Ethiopia and ultimately improve and security. ESGPIP activities are implemented in six regions, namely Afar, Amhara, Oromiya, Somali, Southern States, and Tigray.

FINTRAC implements a USAID funded Agribusiness and Trade Expansion Activity program designed to energize four industry sectors in Ethiopia: horticulture; coffee; hides, skins and leather; and oilseeds. FINTRAC provides market-led production, post harvest, processing, and quality assurance support to the agribusiness and works along all points of the farm-to-market value chain with particular emphasis on small holders, food processors, exporters, and related business services with a mission of increasing the sales and profitability of clients. FINTRAC has an array of international and national partners including Ethiopian private and public sector organizations such as the Ethiopian Horticulture Producers and Exporters Association (EHPEA), the Ethiopian Coffee Exporters' Association (ECEA), the Ethiopian Tanners Association (ETA), the Pulses, Oilseeds & Spices Processors Exporters Association, the Ministry of Agriculture and Rural Development (MoARD), and the Ministry of Trade and Industry (MoTI).

EBA (Ethiopian Bankers Association**)** is a non-for-profit body representing the banking sector. Members of the association include six private banks (Awash, Dashen, Abyssinia, Nib, Wegagen and United), three state-owned banks (Commercial Bank of Ethiopia, Development Bank, and Construction and Business Bank) and one financial cooperative (Oromiya Cooperative Bank). Three of the private banks (Awash, Dashen, and Abyssinia) participate in the USAID Development Credit Authority (DCA) loan guarantee program designed to strengthen and facilitate the financing of marketing activities, operational costs and capital investment of agribusinesses and small to medium-sized agri-enterprises.

SPS-LMM (Ethiopian Sanitary and Phytosanitary Standards and Livestock and Meat Marketing) is a USAID funded and Texas A&M University System (TAMUS) implemented project to support the livestock sector of Ethiopia. Export sales of live animals and meat account for less than 1% of the total income from Ethiopian agricultural exports. Export abattoirs in Ethiopia are operating at less than 50% capacity because of various problems. SPS-LMM project is designed to alleviate some of these constraints. Hosts assisted through this partner are:

ASE (Agri-Service Ethiopia**)** is a national non-governmental and non-profit organization with the primary mandate to undertake development interventions in support of the food security efforts in Ethiopia. ASE provided administrative support to the field office of VSU-FtF program since February, 2006.

Annex 7. List of Volunteers by Trip Dates and Partners

No.	Volunteer Name	Country	Trip dates (from/to)	Number of Volunteer Days	Hosts/Partners
1	Tadesse Mebrahtu	Eritrea	Nov 5-Dec 18,2004	44	MOA
2	Tadesse Mebrahtu	Eritrea	June 30-Aug 4, 2005	36	MOA
3	Yemane G. Yessus	Eritrea	June 30-July 24, 2005	25	MOA
4	Michaela Dismann	Eritrea	July 22-Aug 12 2005	22	MOA
5	Kenton Ayers	Ethiopia	Sept 4-Sept 22, 2004	19	MOA
6	Art Goesche	Ethiopia	Jan 23-Feb 7,2005	16	MOA
7	Jackson Dzkuma	Ethiopia	Jan 23-Feb 7, 2005	16	MOA
8	Freddie Richards	Ethiopia	Jan 23-Feb 7, 2005	16	MOA
9	Tilahun Sahilu	Ethiopia	Jan 23-Feb 7, 2005	16	MOA
10	Dave Wagner	Ethiopia	Feb 7- March1, 2005	23	MOA
11	Asmare Atalay	Ethiopia	May 27-June 16, 2005	21	ARARI
12	Dave Wagner	Ethiopia	Jun 3 - Jun 25 2005	23	MOA
13	Florence Wagner	Ethiopia	Jun 3 - Jun 25, 2005	23	MOA
14	Monte Bell	Ethiopia	Nov 29 - Dec 19, 2005	21	MOA
15	Gerald Nolte	Ethiopia	Mar 24-April 11, 2006	19	LOL
16	Roger Knutzen	Ethiopia	April 2-April 21, 2006	20	AMAREW
17	Joe Guenthner	Ethiopia	May 18-June 5, 2006	19	AMAREW
18	Gretchen Dhooge	Ethiopia	June 18-July 2, 2006	15	IPMS
19	Brian Nerrie	Ethiopia	July 8-July 23 2006	16	AMAREW
20	Judy Mosses	Ethiopia	July 23-Aug 13, 2006	22	AMAREW
21	Robert Albrecht	Ethiopia	July 23-Aug 13, 2006	22	LOL
22	Mike Tierney	Ethiopia	July 23-Aug 11, 2006	20	AMAREW
23	Larry Jacoby	Ethiopia	Aug 20-Sept 3, 2006	15	AMAREW
24	Steve Weerts	Ethiopia	Sept 13-Sept 22, 2006	10	AMAREW
25	Dave Kier	Ethiopia	Sept 13-Sept 26, 2006	14	AMAREW
26	Dean Peterson	Ethiopia	Sept 28-Oct 7 2006	10	EBA
27	Gerald Nolte	Ethiopia	Nov 21-Dec 11,20006	21	LOL
28	Terrill Christensen	Ethiopia	Feb 2-Feb 17, 2007	16	AMAREW
29	Robert Albrecht	Ethiopia	Jan 7-Jan 18, 2007	12	ESGPIP
30	Ozzie Abaye	Ethiopia	Mar 4-Mar 18, 2007	15	ESGPIP
31	Pat Donovan	Ethiopia	Mar 4-Mar 18, 2007	15	ESGPIP
32	Robert Albrecht	Ethiopia	Mar 10-Mar 25, 2007	16	LOL
33	Charles Basham	Ethiopia	Mar 21-April 6 2007	17	AMAREW
34	Gerald Nolte	Ethiopia	April 13 - 22, 2007	10	LOL
35	Henry McNeilly	Ethiopia	May 7 - 25, 2007	19	IPMS
36	Ozzie Abaye	Ethiopia	May 7 - 25, 2007	19	AMAREW
37	Steven Oberle	Ethiopia	May 7 - 25, 2007	19	AMAREW
38	Paul Heinzen	Ethiopia	May 14 - June 3, 2007	21	IPMS
39	Dwight Bowman	Ethiopia	May 18 - June 3, 2007	17	ESGPIP
40	Janice Liotta	Ethiopia	May 18 - June 3, 2007	17	ESGPIP
41	Ray Williams	Ethiopia	June 22 - July 6 2007	15	EBA
42	Don Hutzel	Ethiopia	July 9 - 22, 2007	14	Land O Lakes
43	Perry Raso	Ethiopia	July 18 - August 8, 2007	22	AMAREW
44	Dan Theisen	Ethiopia	July 20, - Aug 6, 2007	17	AMAREW
45	David Kappleman	Ethiopia	Aug 17-Sept 4, 2007	19	EBA
46	Carlos Espinosa	Ethiopia	Aug 17-Sept 4, 2007	19	EBA
47	Alan Laird	Ethiopia	Sep 19 - Oct 6, 2007	18	AMAREW
48	Kevin Heaton	Ethiopia	Aug 29 - Sep 16 2007	19	AMAREW
49	Larry White	Ethiopia	Sep 12 - Sep 27,2007	16	IPMS
50	U.R. Palaniswamy	Ethiopia	Sep 14-Oct 6,2007	23	Farmers-ACD /VOCA
51	Charles Higgins	Ethiopia	Aug 27- Sep 25,2007	30	AMAREW
52	Glen Huskey	Ethiopia	Oct 4 - 20, 2007	17	IPMS
53	Robert Albrecht	Ethiopia	Nov 23 - Dec 16, 2007	24	LOL
54	Mary Albrecht	Ethiopia	Nov 23 - Dec 16, 2007	24	LOL
55	Mekonnen Lema	Ethiopia	Dec 19 - Jan 06 2008	19	Dairy Coops-ACDI/VOCA
56	Malcolm Manners	Ethiopia	Dec 25 - Jan 07,2008	14	Farmers-ACD /VOCA
57	Clive Kaiser	Ethiopia	Feb 13 - Mar 01,2008	18	Fintrac
58	Govind Kannan	Ethiopia	Feb 29 - Mar 12, 2008	13	ESGPIP
59	James VanEss	Ethiopia	Mar 14-30, 2008	17	SPS-LMM
60	William Turner	Ethiopia	Mar 14-30, 2008	17	SPS-LMM
61	Gerald Nolte	Ethiopia	Mar 21 - Apr 06, 2008	17	LOL
62	Robert Nottelmann	Ethiopia	Apr 12-4 May 2008	23	Fintrac
63	Braxon Kinsey	Ethiopia	Jun 20-Jul 9 2008	20	LOL
64	William Hagen	Ethiopia	Jun 20-Jul 9, 2008	20	LOL
65	Ryan Anderson	Ethiopia	Jul 14 - Jul 30, 2008	17	LOL
66	Kenneth Koers	Ethiopia	Jul 14 - Jul 30, 2008	17	LOL
67	Claudia Whitehead	Ethiopia	Jul 18 - 3 Aug, 2008	17	EBA
68	Clyde McNamee	Ethiopia	Jul 20 - Aug 09, 2008	21	ARARI
69	David Kappleman	Ethiopia	Aug 1 - 17, 2008	17	EBA
70	James Raymond	Ethiopia	Aug 1- Aug 17, 2008	17	EBA

Annex 8. List of Volunteers by Assignment and Hosts

No.	Volunteer Name	Assignments	Hosts Assisted
1	Tadesse Mebrahtu	Training on common bean production and research methodology	National Agricultural Research Institute of Eritrea
2	Tadesse Mebrahtu	Training on research methodology and production of Sesame and Cotton	Eritrean Minstry of Agriculture
3	Yemane G. Yessus	Training on practical use of Irrigation in crop production	Eritrean Ministry of Agricutlture
4	Michaela Dismann	Production, processing & marketing of horticultural crops	Eritrean Ministry of Agricutlture
5	Kenton Ayers	Assessment of livestock marketing in the Southern Tiers Region	Southern Tier Initiative, Min. of Agric, Ethio
6	Art Goesche	Assessment of sheep and goat industry	Ethiopian Ministry of Agriculture
7	Jackson Dzkuma	Assessment of sheep and goat industry	Ethiopian Ministry of Agriculture
8	Freddie Richards	Assessment of sheep and goat industry	Ethiopian Ministry of Agriculture
9	Tilahun Sahilu	Assessment of sheep and goat industry	Ethiopian Ministry of Agriculture
10	Dave Wagner	Training in strategic business plan for Southern Tiers Region	Southern Tier Initiative, Min. of Agric, Ethio
11	Asmare Atalay	Training on laboratory equipments installation.maintainance & operation	Amhara Regional Agric. Research Institute
12	Dave Wagner	Market survey in the Gurage zone	Ethiopian Minstry of Agriculture
13	Florence Wagner	Market survey in the Gurage zone	Ethiopian Ministry of Agriculture
14	Monte Bell	Rangeland and herd management	Southern Tier Initiative, Min. of Agric, Ethio
15	Gerald Nolte	Workshops on small scale agribusiness management training- Phase I	Small scale private agribusinesses
16	Roger Knutzen	Assessment of ware potato marketing opportunities	Potato growers in Amhara Regional State
17	Joe Guenthner	Devel. of on-farm potato seed tuber production & marketing schim	Potato growers in Amhara Regional State
18	Gretchen Dhooge	Dairy feasibility study in Yirgalem, Dale Woreda	Dairy farmers & cooperatives in Dale Wereda
19	Brian Nerrie	Aquaculture development	St. George & Zege Fisheries Association
20	Judy Mosses	Assessment of small ruminant rearing & marketing opportunities	Anhara Micro & Small Enterprize Dev. Agency
21	Robert Albrecht	Livestock feed plant management	Feed millers in Addis, Bahir Dar, & Gondar
22	Mike Tierney	Applied solar cooling application for dairy	Dairy Cooperatives & farmers in Addis, Bahir Dar, etc
23	Larry Jacoby	Small ruminant marketing opportunity in Amhara Region	Anhara Micro & Small Enterprize Dev. Agency
24	Steve Weerts	Training on production & marketing of small ruminants	District Bureau of Ag. at D.Berhan & Bahir Dar
25	Dave Kier	Training on production & marketing of small ruminants	District Bureau of Ag. at D.Berhan & Bahir Dar
26	Dean Peterson	Feasibility of Electronic Banking (Payment system) in Ethiopia	Ethiopian bankers Association
27	Gerald Nolte	Small scale agribusiness management Training-Phase II	Small scale private agribusinesses
28	Terrill Christensen	Development of seed potato marketing system	Seed growers in Sekela, Banja & Lay Gayent
29	Robert Albrecht	Small ruminant supplemental feeding	Sheep farmers in Sodo, Negele & Hawassa
30	Ozzie Abaye	Feed resource & utilization of browse vegetation for small ruminants	Sheep Farmers in the Rift Valley, Ethiopia
31	Pat Donovan	Feed resource & utilization of browse vegetation for small ruminants	Sheep Farmers in the Rift Valley, Ethiopia
32	Robert Albrecht	Feed supplements and feed plant development	Feed Millers in Addis, Bahir Dar, & Gondar
33	Charles Basham	Development of ware potato value adding & marketing system	Potato growers in Amhara Regional State
34	Gerald Nolte	Dairy waste management using composting	Diry farmers in Addis Ababa & Bahir Dar
35	Henry McNeilly	Dairy processing and market development	Adaa dairy cooperatives
36	Ozzie Abaye	Feed resource & utilization of browse vegetation for small ruminants	Smallholder sheep farmers in Amhara region
37	Steven Oberle	Feed resource & utilization of browse vegetation for small ruminants	Smallholder sheep farmers in Amhara region
38	Paul Heinzen	Dairy processing and market development	Dairy farmers, coops & processers in Bahir Dar
39	Dwight Bowman	Training on internal parasite management in small ruminants:	Animal health technicians
40	Janice Liotta	Training on internal parasite management in small ruminants:	Animal health technicians
41	Ray Williams	Assessment of agricultural lending in the Ethiopian Banking system	Ethiopian Bankers Association
42	Don Hutzel	Assessment on the utilization of Artificial Insemination	Tigray Bureau of Agriculture, Ethiopia
43	Perry Raso	Development of fish production & marketing system	St. George & Zege Fisheries Association
44	Dan Theisen	Development of "mono-sex tilapia pond aquaculture"	Amhara Regional Agri. Research Institute
45	David Kappleman	Training on Ag. lending, risk analysis & management at HQs	Ethiopian Bankers Association
46	Carlos Espinosa	Training on Ag. lending, risk analysis & management	Ethiopian Bankers Association
47	Alan Laird	Upgrading of seed potato growers nucleus group in to cooperatives	Potato growers in Amhara Regional State
48	Kevin Heaton	Development of small ruminant collective marketing and input use group	Small Ruminant farmers in Amhara Regional State
49	Larry White	Lentil splitting business plan development	Erer Farmer Cooperative Union-Limited
50	U.R. Palaniswamy	Assessment of pepper production	Bako-Tibe Agric. & rural devp. Office
51	Charles Higgins	Development of ware potato storage system	Potato growers in Amhara Regional State
52	Glen Huskey	Dairy processing and market development	Dairy farmers in Tigray Region
53	Robert Albrecht	Dairy supplementary feed plant establishment & feed formulation	Feed plants in Addis & Gondar
54	Mary Albrecht	Cooperative development in Dairy	Dairy farmers in Mkele & Gonda
55	Mekonnen Lema	Dairy feed development & ration formulation	Dairy Farmers in Lemo Woreda
56	Malcolm Manners	Improvement in mango production system	Bako-Tibe Agric. & rural devp. Office
57	Clive Kaiser	Production and marketing of Strawberry/Grape	Almeta, Asamenew & Nuredin Farms
58	Govind Kannan	Training on Meat quality assessment	Modjo Organic Expoert Abattoir
59	James VanEss	Management of meat processing plant	Elfora & Modjo meat processing plants
60	William Turner	Training on Dairy bull calves raising & management	Ada'a Liben Dairy cooperative
61	Gerald Nolte	Dairy waste management using composting	Development workers at DebreZeit & Mekele
62	Robert Nottelmann	Production and marketing of Strawberry	Almeta, Ilan Tot & Nuredin Farms
63	Braxon Kinsey	Alternative energy source for cooling milk - 1	Dairy milksheds at Addis, Debrezeit, Bahir Dar
64	William Hagen	Alternative energy source for cooling milk-1	Dairy milksheds at Addis,Debrezeit, Bahir Dar
65	Ryan Anderson	Alternative energy source for cooling milk- 2 Pot-in-pot	Dairy milksheds at Addis,Gondar, Bahir Dar
66	Kenneth Koers	Alternative energy source for cooling milk- 2 Pot-in-pot	Dairy milksheds at Addis,Gondar, Bahir Dar
67	Claudia Whitehead	Development of strategic plan for bankers` association	Ethiopian Bankers Association
68	Clyde McNamee	Training and, Equipment Installation & Maintenance	Amhara Regional Agricultural Research Institute
69	David Kappleman	Training on Ag. lending, risk analysis & management- at Regions	Ethiopian Bankers Association
70	James Raymond	Training on Ag. lending, risk analysis & management- at Regions	Ethiopian Bankers Association

Annex 9. List of U.S.A. and Ethiopia Based Staff

1. U.S.A. Based:

Dr. Wondi Mersie, Project Director (September 2005 to September 2008)

Dr. Joseph Tritschler, Project Director (October 2003 to August 2005)

Dr. Jacob Mignouna, Assistant Project Director (October 2003 to January 2005)

Mrs. Mary Albrecht, Recruiter (January 2004 to September 2008)

Ms. Sharon L. Blackett, Contractual staff (January 2007 to April 2007)

Mrs. Rose Bland-Lee, Admin. & Program Specialist III (Oct. 2003 to Sept. 2008)

Ms. Glenise Evans Administrative & Program Specialist III (Oct. 2007 Sept. 2008)

Mr. Clyde McNamee, Lab. & Research Practitioner (Sept. 2005 to Sept. 2008)

Mrs. Stephanie McNeil, Admin. & Program Specialist III (Sept 2005 to Sept 2008)

Ms. Patricia Miller, Admin. & Program Specialist III (Oct. 2003 to Sept. 2008)

Mrs.Pamela Mountcastle, Manager, Cash and Invest. (Sept. 2005 to Sept. 2008)

Mr. Billy Porter, Media Specialist (Sept. 2005 to Sept. 2008)

Mrs. Celeste Ricks, Administration and Program Specialist (Sept. 2005 to Sept. 2008)

2. Ethiopia based:

Dr. Lulseged Gebrehiwot, Country Coordinator (February 2006 to July 2006)

Dr. Eshetu Bekele, Country Coordinator (July 2006 to September 2008)

Mr. Million Abebe, Country Coordinator (November 2006 to September 2008)

Dr. Eshetu Mulatu, Country Coordinator (50%) (Aug. 2005 to Dec. 2006)

Mr. Smachew Kasahun, Country Coordinator (50%), (Jan. 2007 to Dec. 2007)

Mr. Awoke Tilahun, M&E expert (August 2007 to February 2008)

Mr. Bezabih Eshetu Security guard (August 2006 to September 2008)

Mr. Gizachew Araya Security guard (August 2006 to September 2008)

Mr. Gtachew Abate Security guard (August 2006 to September 2008)

Ms. Zewditu Assefa Janitor (August 2006 to September 2008)

Mr. Estifanos Bireda Driver (January 2007 to September 2008)

Annex 10. Pictures of Some Ethiopian Based Staff and Volunteers

Pic. 1. VSU-FtF Ethiopian staff: From left to right: Million Abebe (country coordinator); Eshetu Bekele (country coordinator); Smachew Kasahun (part time country coordinator at Bahir Dar); Zewditu Assefa (janitor); Estifanos Zerga (driver); and Getachew Abate (security guard).

Pic. 2. VSU-FtF staff with some volunteers in Addis Ababa, May 2007. From Left to right: Million Abebe (Country Coordinator); Janice Liotta (laboratory technician from Cornell University); Dwight Bowman (professor from Cornell University); Paul Heinzen; Wondi Mersie (VSU-FtF Project Director, Petersburg, Virginia, USA); and Eshetu Bekele (Country Coordinator).