WEST AFRICA FARMER-TO-FARMER PROGRAM
YEAR 3 ANNUAL REPORT

OCTOBER 1, 2015 – SEPTEMBER 30, 2016
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LEADER WITH ASSOCIATE COOPERATIVE AGREEMENT NUMBER: AID-OAA-L-13-00004

AOTR USAID: Gary Alex

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Disclaimer:
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<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADVANCE II</td>
<td>Agricultural Development and Value Chain Enhancement II</td>
</tr>
<tr>
<td>ASRP</td>
<td>Agriculture Sector Rehabilitation Program</td>
</tr>
<tr>
<td>CRS</td>
<td>Catholic Relief Services</td>
</tr>
<tr>
<td>CBL</td>
<td>Central Bank of Liberia</td>
</tr>
<tr>
<td>CCMA</td>
<td>Consumer Cooperative Management Association</td>
</tr>
<tr>
<td>COOPERKING</td>
<td>Cooperative de Riziculteurs de Kingabwa</td>
</tr>
<tr>
<td>CSIR</td>
<td>Council for Scientific and Industrial Research</td>
</tr>
<tr>
<td>DIRFEL</td>
<td>Directoire des Femmes en Elevage</td>
</tr>
<tr>
<td>DRC</td>
<td>Democratic Republic of Congo</td>
</tr>
<tr>
<td>EVD</td>
<td>Ebola Virus Disease</td>
</tr>
<tr>
<td>ECCA</td>
<td>Europe, Caucuses and Central Asia</td>
</tr>
<tr>
<td>FAID</td>
<td>Fanaye Association for the Integrated Development</td>
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<tr>
<td>F2F</td>
<td>Farmer-to-Farmer</td>
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<tr>
<td>FED</td>
<td>Food for Enterprise Development</td>
</tr>
<tr>
<td>FTF</td>
<td>Feed the Future</td>
</tr>
<tr>
<td>FY</td>
<td>Fiscal Year</td>
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<tr>
<td>GGRWFMCS</td>
<td>Gbelay Geh Rural Women Farmers Multipurpose Cooperative Society</td>
</tr>
<tr>
<td>GIDA</td>
<td>Ghana Irrigation Development Authority</td>
</tr>
<tr>
<td>GLARIA</td>
<td>Groupe de Leaders pour l’Aménagement et Réhabilitation des Infrastructures Agricoles</td>
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<tr>
<td>GPP</td>
<td>Ghana Poultry Project</td>
</tr>
<tr>
<td>GTC</td>
<td>Groupe de Travail Citoyen</td>
</tr>
<tr>
<td>HA</td>
<td>Hectare</td>
</tr>
<tr>
<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
</tr>
<tr>
<td>JWFMCS</td>
<td>Johnsonville Women Farmers Multipurpose Cooperative Society</td>
</tr>
<tr>
<td>KPF</td>
<td>Koukatonu Farm Project</td>
</tr>
<tr>
<td>KNUST</td>
<td>Kwame Nkrumah University of Science and Technology</td>
</tr>
<tr>
<td>LOP</td>
<td>Life of Project</td>
</tr>
<tr>
<td>LNFCs</td>
<td>National Federation of Cooperative Societies</td>
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<td>LIFE III</td>
<td>Livelihood Improvement for Farming Enterprise III</td>
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<td>LCCC</td>
<td>Lofa County Community College</td>
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<tr>
<td>MTIC</td>
<td>Makonah Trading and Investment Corporation</td>
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<tr>
<td>MOA</td>
<td>Ministry of Agriculture</td>
</tr>
<tr>
<td>MOFA</td>
<td>Ministry of Food and Agriculture</td>
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<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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<td>NCBA/CLUSA</td>
<td>National Cooperative Business Association, CLUSA International</td>
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<td>National Peace Corps Associations</td>
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<td>NGO</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>NOVAS</td>
<td>Networked Online Volunteer Assignment System</td>
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<tr>
<td>NRM</td>
<td>Natural Resource Management</td>
</tr>
<tr>
<td>ODI</td>
<td>Organizational Development Index</td>
</tr>
<tr>
<td>PRODADEKK</td>
<td>Programme de Développement Agricole et de Désenclavement Dans les Districts du Kwilu et du Kwango</td>
</tr>
<tr>
<td>PRIME</td>
<td>Project Reporting, Information, Monitoring and Evaluation</td>
</tr>
</tbody>
</table>
RING  Resiliency in Northern Ghana
SOW  Scope of Work
SHI  Self Help International
SPRING  Results, and Innovations in Nutrition Globally
ToT  Training of Trainers
UDS  University of Development Studies
ULPAT  Union des Leaders Producteurs Agricoles de la Tshangu
USADF  United States African Development Fund
UN  United Nations
USAID  United States Agency for International Development
USDA  United States Department of Agriculture
USG  United States Government
VNC  Association Relais et Volontaire Nutrition Communautaire
WAWEEP  War Affected Women Educational Empowerment Program
WRWS  Welekamai Rural Women Structure
WA  West Africa
WHO  World Health Organization
YATC  Youth in Agriculture Training Center
I. SUMMARY OF EXPERIENCE WITH PROGRAM IMPLEMENTATION

In the report below, ACDI/VOCA certifies that for this project we: a) used established indicators and definitions, b) participated in regular (annual) workshops reviewing indicators and monitoring and evaluation (M&E) systems, and c) trained field staff on indicators and data collection systems.

ACDI/VOCA certifies that we collected three references for every volunteer who has not done a volunteer assignment with us in the past 18 months. We also used Amber Road software to make sure that our volunteers were not listed as sanctioned individuals on any U.S. government or United Nations list.

During the reporting period, West Africa Farmer-to-Farmer (F2F) placed a total of 114 volunteers out of directly benefitting 7,660 individuals (3,851 of whom were women. As of September 30, 2016, 68 volunteer assignments are planned for the first half of fiscal year (FY) 17.

In this report, ACDI/VOCA presents impact data for volunteer assignments that took place in FY15. For the same period, volunteer technical assistance in to host organizations serving smallholder farmers catalyzed an estimated increase in gross sales of $1,527,068 and an estimated increase in net income of $3,204,230 for 78,021 beneficiaries.
## Table 1. F2F West Africa FY2015 Key Impacts

<table>
<thead>
<tr>
<th></th>
<th>Total Direct &amp; Indirect Benes</th>
<th># of Recs Adopted</th>
<th>Increase in Gross Sales</th>
<th>Increase in Net income</th>
<th>Area under improved NRM (ha)</th>
<th>Increase in Value of Ag Lending</th>
<th>Increase in Number of Ag Loans</th>
<th># of Improved Products and Services</th>
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<tbody>
<tr>
<td>DRC Staple Crops</td>
<td>1,006</td>
<td>13</td>
<td>$(64,662)</td>
<td>$(23,182)</td>
<td>12,525</td>
<td>$0</td>
<td>0</td>
<td>6</td>
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<td>DRC Poultry &amp; Aquaculture</td>
<td>276</td>
<td>23</td>
<td>$(1,009,430)</td>
<td>$(402,737)</td>
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<td>$0</td>
<td>0</td>
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<tr>
<td>Ghana Staple Crops</td>
<td>1,920</td>
<td>66</td>
<td>$(281,380)</td>
<td>$(260,290)</td>
<td>0</td>
<td>$0</td>
<td>0</td>
<td>29</td>
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<tr>
<td>Ghana Horticulture</td>
<td>1,151</td>
<td>59</td>
<td>$1,846,567</td>
<td>$3,844,093</td>
<td>0</td>
<td>$0</td>
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<td>Ghana Ag Research &amp; Education</td>
<td>191</td>
<td>19</td>
<td>$</td>
<td>$</td>
<td>0</td>
<td>$0</td>
<td>0</td>
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<tr>
<td>Ghana Flexible</td>
<td>24</td>
<td>20</td>
<td>$898,380</td>
<td>$(30,584)</td>
<td>0</td>
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<td>Liberia Livestock</td>
<td>35</td>
<td>6</td>
<td>$3,300</td>
<td>$2,000</td>
<td>20</td>
<td>$0</td>
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<td>Liberia Horticulture</td>
<td>852</td>
<td>6</td>
<td>$13,351</td>
<td>$7,010</td>
<td>773</td>
<td>$0</td>
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<td>Liberia Youth In Agriculture</td>
<td>80</td>
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<td>$47</td>
<td>$27</td>
<td>0</td>
<td>$0</td>
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<td>Liberia Flexible</td>
<td>1,442</td>
<td>3</td>
<td>$4,500</td>
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<td>45</td>
<td>$0</td>
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<td>Senegal Millet</td>
<td>1,959</td>
<td>16</td>
<td>$1,404</td>
<td>$1,099</td>
<td>0</td>
<td>$0</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Senegal Horticulture</td>
<td>50,746</td>
<td>30</td>
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<td>313</td>
<td>$0</td>
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<td>Senegal Environmental Conservation</td>
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<td>12</td>
<td>$106,657</td>
<td>$53,095</td>
<td>115</td>
<td>$0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>TOTAL</td>
<td>78,021</td>
<td>270</td>
<td>$1,527,068</td>
<td>$3,204,230</td>
<td>13,791</td>
<td>$0</td>
<td>0</td>
<td>70</td>
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ACDI/VOCA missed the FY16 target for volunteer assignments completed by 14 volunteers or 11 percent. ACDI/VOCA plans to accelerate the pace of our progress towards our life of project (LOP) target for the number of volunteer assignments completed by taking the following actions:

1. **New F2F program management database**
   In the summer of 2016, ACDI/VOCA started using a new program management database—the Networked Online Volunteer Assignment System, or NOVAS. NOVAS consolidates into one system information about scopes of work (SOW), volunteer CVs, and assignment outputs. We anticipate that NOVAS will make management of volunteer assignments more efficient, which will in turn, enable the team to spend more time on recruiting additional volunteers.

2. **New SOW template**
   In late FY16, ACDI/VOCA revised the volunteer SOW template. The new template enables the team to write and approve SOWs faster, and generates SOWs that improve the efficiency of volunteer recruitment.

3. **Concrete recruiting goals**
   F2F West Africa (WA) set a goal for FY17 of placing an average of eight volunteers throughout the region each month. Consistently recruiting eight volunteers every month in each region will enable the F2F WA team to achieve LOP targets for volunteer assignments completed. During this time period, the program team will evaluate its progress and make adjustments accordingly.

**Democratic Republic of Congo**

Over the reporting period, F2F Democratic Republic of Congo (DRC) deployed 11 volunteers, including two in eastern DRC (South Kivu province). These volunteers completed 183 volunteer days, donated an estimated $86,010 worth of professional time, and worked with 376 beneficiaries (149 men and 227 women).

As planned and approved in the FY15 Annual Report, F2F DRC incorporated technical assistance in aquaculture into its project. The integration of aquaculture into the poultry subsector provides farmers increased income, diversified income sources, increased food security, and farm job creation. Since the integration, five volunteer assignments have been completed in this project.

**Ghana**

Over the reporting period, 47 volunteers were deployed to Ghana. These volunteers completed 778 volunteer days, donated an estimated $365,560 worth of professional time, and worked with 3,606 (2,168 men and 1,438 women).

The F2F Ghana program focused on staple crops, horticultural crops, agricultural research and education, and some flexible assignments. Volunteer interventions mainly addressed challenges in agricultural production, processing, post-harvest handling, organizational strengthening, and marketing and strategic plan development. Assignments in the agricultural research and education project were diverse; they supported curriculum development, intellectual property rights, and development of compost using vermiculture. Flexible assignments addressed improving swine feed formulation and reducing mortality rates, improving poultry processing and packaging, and designing an aquaponics system.
Liberia

F2F Liberia deployed 18 volunteers in the following sectors: five in livestock, six in horticulture, two in youth in agriculture, and four in flexible assignments. The 18 mobilized volunteers contributed 362 volunteer days, donated an estimated $170,140 worth of professional time, and worked with 732 beneficiaries (475 men and 257 women).

Senegal

During the reporting period, F2F Senegal deployed 31 volunteers in the following sectors: 10 in millet, eight in environmental conservation, 10 in horticulture, two in non-core flexible assignments, and one in a flexible assignment. The 31 volunteers worked with 17 new host organizations, contributed 508 volunteer days, and worked with 2,269 beneficiaries (766 men and 1,803 women).

Flexible Non-Core

F2F Senegal held two non-core flexible assignments during FY16 performed in Zimbabwe in the areas of organizational development and business with Honde Valley Banana Producers Association. The two volunteers traveling to Zimbabwe contributed 34 volunteer days, donated an estimated $15,980 worth of professional time, and worked with 126 beneficiaries (73 men and 53 women).

Through its partner organization BRIDGES in Ukraine, ACDI/VOCA executed six volunteer assignments in Ukraine as well as one in Serbia. The six volunteers traveling to Ukraine contributed 97 volunteer days, donated an estimated $45,590 worth of professional time and worked with 547 beneficiaries (474 men and 73 women).

A. Key Implementation Accomplishments over the Reporting Period

Democratic Republic of Congo

The F2F DRC project’s technical assistance resulted in the creation of a cooperative named Cooperative of Kinshasa Farmers. The volunteers trained the cooperative’s Board of Administration on the necessary skills for contract negotiation with third parties and government services. As a result of the training by volunteers, the cooperative was able to make key negotiations to strengthen their operations. As an example, they successfully negotiated a contract with a Dutch firm to supply the cooperative with concentrate for poultry feed at a relatively low price.

In addition, the cooperative board negotiated member loans from the DRC government service—the Federation Nationale des Artisans, Petites et Moyennes Entreprises Congolaises. Loan amounts range between $5,000 and $30,000 per farmer with a payback period of three years, and an interest rate of 5 percent per year. These loans enabled farmers to afford low cost and balanced feed produced by the cooperative’s members. With access to these loans, some farmers were able to resume their businesses because they could afford needed inputs. The fact that the cooperative successfully negotiated loans for its members is a major change to banking products in the DRC as banks and government services traditionally have not provided farmers with credits or loans because of the perceived risk.

The F2F DRC project also helped some of its partner organizations (ACOTREPAL and ADACRI) in the development and submission of project proposals to obtain funding from donors (e.g., small grants from
Summary of key impact findings:
F2F DRC evaluated 20 host organizations that benefited from the F2F technical assistance in FY15. The overall result of this mid-term evaluation indicated that the host organizations adopted volunteer recommendations. Despite the adoption of the recommendations, only eight of the 20 host organizations improved their gross and net income over the baseline.

Staple crops impact:
1. Six host organizations (GLARIA, COOPERKING, UFAM, COFEBA, ULPAT and APRM) improved their gross sales and net incomes.
2. Two associations, AREK and AMARKING, did not produce rice for over a year because their fields had been confiscated for housing construction.
3. Three host organizations (ADACRI, COAGRI and IDEA) did not improve their gross sales and their net incomes because the price of their main agricultural commodity, cassava, was low in the Bas Congo province market. For this reason, two of the host organizations (COAGRI and IDEA) decided to grow vegetables as an alternative or new product to serve as their new income source.
4. For host organization, APERKING, gross sales and net income realized were lower than the baseline because of low harvest production.

Poultry
1. Several poultry farms were forced to close, but the Cooperative of Kinshasa was able to provide services including ingredients for feed production, technical assistance, and loans that enabled some farms to resume operations.
2. As a result of training on prevention and control of poultry diseases provided to veterinarians by the volunteer Jennifer Bowman, the National Ministry of Agriculture, Livestock and Fishing established its first poultry and small ruminant’s vaccination program. Veterinarians from the Directorate of the DRC Animal Production and Health that were trained by the project on poultry disease and prevention reported the importance of vaccination to the General Secretary of the Ministry of Agriculture, Fishing and Livestock.

Aquaculture
1. FESIC and Yaki Farm increased their gross sales and net incomes. These increases in gross sales and income are the result of adoption and implementation of recommendations from training on fish feed and nutrition, and the participatory demonstration and trial on fish feed and fish pond fertilization conducted by CADIM in collaboration with the University of Kinshasa, Pedagogical University of Kinshasa, Belgian universities, and F2F DRC.
2. Muwalawala farm adopted the fish feed and fish pond fertilization recommendations, but at the time of this report, the fish ponds had not yet been harvested so the impact couldn’t be measured.

Ghana
At the end of the reporting period, two volunteers were in-country, 14 assignments were in recruitment, six assignments had been accepted, and nine SOW were in development. To maximize project impact, F2F Ghana continues to collaborate with government organizations such as the Council for Scientific and Industrial Research (CSIR), the Ghana Irrigation Development Authority (GIDA), the Ministry of Food and Agriculture (MOFA), USAID Feed the Future Projects (FTF) such as Ghana Agricultural Development and
Value Chain Enhancement II (ADVANCE II) and the Fisheries and Coastal Management Capacity Building Project. The program is also collaborating with several universities such as The University for Development Studies (UDS), Kwame Nkrumah University of Science and Technology (KNUST).

For the current report, F2F Ghana conducted a mid-term survey of 38 FY15 hosts with 43 assignments using a mid-term impact survey questionnaire progress towards LOP goals. The study assessed the extent to which the program has achieved its objective of increasing the economic growth of the program beneficiaries. The study was conducted on host organizations that benefitted from volunteer assistance in FY15.

Summary of key impact findings:
Increase in gross sales and net income
Although beneficiaries in the staple crops sector increased their annual gross sales, this did not translate into increased net income. In Ghana, the majority of the staple crops volunteer assignments were in the northern region which usually experiences very harsh weather conditions and has just one farming season. During FY15, host organizations complained of low and irregular rainfall which greatly reduced agricultural yields, sales, and farmer incomes. Depreciation of the Ghana cedi against the U.S. dollar also increased the cost of agricultural inputs.

Host organizations in the horticultural crops sector reported a steady increase in their gross sales and income in FY15. Most of the farmers in the horticultural crop sector are located in areas of the country where rainfall is adequate and consistent. However, farmers across all subsectors especially the flexible, were negatively affected by depreciation of the Ghana cedi against the U.S. dollar, thus increasing production costs. Host organizations in the agricultural research and education institutions sector make very few sales, and depending on the institution, do not have significant income.

Adoption of recommendations
Host organizations in all sectors are doing well in adopting volunteer recommendations, except in situations where the recommendation involves significant financial commitment. In such situations, the host may delay adoption because they need time to raise funds for investment. In particular, government institutions often must delay adoption while they complete protocols to get their budgets approved. The universities are successfully adopting recommendations. For example, KNUST has started using the curriculum developed by a volunteer for its bachelor’s degree program.

New products and services
Survey results indicated that some host organizations developed new products and services such as ploughing services, provision of inputs on credit to members of farmer organizations, training programs to support members, and bulk marketing of produce.

Liberia
F2F Liberia partnered with the USAID-funded Food for Enterprise Development (FED) program, the USDA-funded Livelihood Improvement for Farming Enterprises (LIFE III) program, the Central Bank of Liberia, and the Liberia National Federation of Cooperative Societies (LNFC). At the end of the reporting period, three volunteers were in-country and seven assignments were in recruitment.

Summary of key impact findings:
F2F Liberia worked with several host organizations that strengthened operations as a result of volunteer
assistance. This enabled the organizations to fulfill the requirements of complementary donor projects. During the reporting period, Liberia F2F recommended a number of former F2F host organizations to the United States African Development Foundation (USADF) for possible funding. As a result of volunteer technical assistance, two women’s organizations succeeded in obtaining grants from USADF due to improvements in their organizational and financial management. Details follow:

1. Johnsonville Women Farmers Multipurpose Cooperative Society (JWFMCS) received a grant of US$88,000 in September 2016 from USADF as an initial amount to construct a rice processing facility on the cooperative’s farm near Monrovia.
2. War Affected Women Empowerment Program (WAWEP) near Gbarnga, received in-kind supplies and equipment for their operations including a power tiller, a laptop, desk printer, an external hard drive, and office equipment totaling $6,555 from USADF based on F2F’s recommendation made on their behalf in March 2016.

**Senegal**

In FY16, F2F Senegal reached its target of 31 assignments and assisted 26 host organizations. Working with other U.S. government programs managed by NCBA CLUSA in Senegal was key to achieving the target. USAID Yaajeende, NCBA CLUSA’s “Nutrition-Led Agriculture for Food Security Project in Senegal,” and USDA’s Millet Business Services Project supported SOW development, volunteer mobilization, and identification and selection of host organizations. In turn, the program beneficiaries of the two U.S. government-supported programs received F2F volunteer technical assistance. In addition, developing and maintaining partnerships with host organizations was critical to achieving the target.

Programmatic success includes volunteers transferring valuable skills to the host organizations. The most requested trainings included: conservation agriculture and composting (nine trainings), organizational development (six trainings), and business and finance (five trainings). Trainings, particularly organizational development and marketing, resulted in improved operations at host organizations. Other trainings such as vegetable processing and soap making resulted in new income streams. Assignments such as organic farming, soil fertility, and conservation agriculture and composting improved farming productivity.

During the reporting period, the project initiated a number of activities to improve volunteer recruitment and to promote the volunteer program. F2F volunteer opportunities and stories are posted on the NCBA website and listed in the Cooperative Business Journal—NCBA CLUSA’s weekly publication to their members. Furthermore, NCBA CLUSA posts the opportunities on RCPV Career Link, Idealist, and Devex, and has F2F information under its outreach section. A F2F Facebook group was created during this year and helped the volunteers to network and share experiences. NCBA CLUSA made a presentation on the F2F program and had a booth at the Consumer Cooperative Management Association (CCMA) conference in June 2016. NCBA CLUSA staff attended Peace Corps Connect—the National Peace Corps Associations’ (NPCA) annual meeting. At the conference, staff made connections with returned Peace Corps volunteers who are potential F2F volunteers, as well as with six universities and the NPCA itself, which expressed interest in posting F2F opportunities for their graduate students and membership. The F2F program reconnected with former F2F Senegal volunteers and encouraged them to spread the word about new opportunities to their networks. Collectively, all these activities increased recruitment.

At the beginning of each assignment, F2F Senegal established baseline impact indicator data for each host organization. For the current report, we prepared an impact survey questionnaire to assess host...
performance and progress towards LOP goals for key impact indicators. The field staff conducted the impact survey and interviewed all 22 host organizations that had volunteers in FY15. These organizations reported a seven percent overall increase in their net income. Seven of 22 organizations reported a 50 percent increase in net income. In the environmental conservation sector, the two organizations surveyed (APROFES (Nguidor) and Daminare Groupe 1 Diamel), reported net income increases of 401 percent. Organizations in the horticulture sector witnessed a 20 percent increase of net income, and the millet sector a reported a six percent increase. Details are listed below.

Summary of key impact findings:

APROFES Nguidor
The group is now earning $961 versus $117 at the time of the baseline. The group reported that they are now producing more vegetables at better quality after receiving volunteer assistance. They also reported improved understanding of their soil composition and have learned how to conserve their land.

Daminare Groupe 1 Diamel
The group witnessed a 102 percent increase of their net income. This group focused its effort on disseminating the techniques they learned from the volunteers. They shared the knowledge gained from the volunteers by training the remaining group members and women from the village. As a result of the composting techniques they learned, they reduced their need to purchase fertilizers and chemical pesticides. The members reported improved transparency in the management of the group and are more willing to pay dues. The treasurer is recording all the expenses, costs, and all other financial transactions. The group also added vegetable drying and vegetable processing techniques to their activities which helps them earn extra income when fresh vegetable markets are not profitable. Membership numbers decreased based upon a review where inactive members, those that moved to other locations, or those who had died were removed from the list.

Groupe de Travail Citoyen (GTC) Ourosidi
The group increased its net income by 218 percent. The members of the organization are now better organized and are using the new techniques in composting, cheese and yogurt processing, and marketing. One of the members is also a community-based service provider with the USAID Yaajeende project. She is using the marketing techniques to sell her products and encourage women to use her products. She is working with the Debbo Galle women’s groups to help them start small businesses and is training them on the marketing approaches she had learned from the F2F volunteer.

Hosts who reported an increase in new or improved products and/or services.

Association pour le Développement de Ganguel Soule: The group learned how to make and use compost; access to new techniques enabled them to produce better quality vegetables. Members now use compost instead of chemical fertilizers and are covering the soil instead of burning the grass in the field.

Daminare Groupe 1 Diamel: The group learned the difference between the types of insects in their field resulting in better selection of the type and quantity of pesticide applied to their soil. They also learned how to make a compost pile which helped reduce the cost of fertilizers.

GPF Kissal Diawdi: As a result of the skills learned during the vegetable processing training, the group introduced a number of new products to the market such as mango juice and processed couscous.
Fedde Balal Allah: The group doubled their rice production this year because of improved inputs purchased utilizing a bank loan of $430 obtained as a result of volunteer technical assistance.

Groupe de Promotion Feminine GPF Ganki: The group is now making and selling soap and body cream in local markets.

CARITAS: The group noticed an increase of their production of vegetables which increased their income. Moreover, to protect the soil, the group is now using a crop rotation calendar that is also based on the market demand.

Hosts organizations that added new members or hired employees:
- Association Relais et Volontaire Nutrition Communautaire (VNC)
- GPF Kissal Diawdi
- Oyawel

Hosts who added new clients
Groupe de Travail Citoyen (GTC) Ourosidi: The women involved in small trade reported improved sales because they are successfully applying marketing techniques learned during the assignment. The women realized the importance of packaging and labelling their products, as well as the need for a sanitized, clean production environment. They noticed that their products are now much more valuable on the markets and are generating more income.

Hosts who improved their business model
Association Relais et Volontaire Nutrition Communautaire (VNC): Some members opened small businesses after receiving training on social marketing. Further, the group organized activities such as general discussions and trainings to promote their organization within the community and to build trust.

**B. CONSTRAINTS TO PROJECT IMPLEMENTATION**

**Democratic Republic of Congo**

The main constraint to F2F implementation in DRC is the security situation. The eastern DRC (South Kivu and North Kivu) has been subject to the insecurity caused by various militias killing and abducting people. The insecurity in the eastern DRC has worsened since the beginning of this year in particular along the roads that lead to the city of Butembo, Beni, and Lubero and the surrounding area in the North Kivu province. Therefore, three assignments planned for north Kivu Province in Butembo could not take place and were postponed until FY17.

Additionally, F2F DRC has been closely monitoring election disputes between the government and opposition ahead of the presidential and parliamentary elections planned for November 2016. The insecurity, unrest, and loss of life that took place this year in September 2016 especially in Kinshasa resulted in the cancellation of one assignment.

**Ghana**

During the mid-term evaluation, analyzing income data was extremely challenging because of the depreciation of the Ghana cedi against the U.S. dollar. This was exacerbated in situations where there
was a complete change in the management teams of host organizations.

**Liberia**

Host farmers’ expectations of receiving financial and material assistance from volunteers continues to be a challenge. The F2F Liberia team will provide more education of new hosts to ensure they understand the difference between F2F and other U.S. government-funded programs. F2F Liberia also faces challenges in placing volunteers in rural Liberia during the rainy season due to poor road conditions which constrains the total number of volunteer assignments in a year.

**Senegal**

Regarding FY16 implementation performance, F2F Senegal achieved its target of 31 assignments, with only minor issues encountered and with the assignments evenly distributed throughout the year. The major problem faced during the implementation this year was the additional costs incurred from vehicle repairs in Matam.

**II. PLANNED ACTIVITIES FOR THE NEXT SIX MONTHS**

**Democratic Republic of Congo**

The F2F DRC has developed five SOWs including four for the eastern DRC. All of the five SOWs are in the flexible component of the DRC project plan. The deployment of volunteers in the DRC will depend on the security situation in the country and on the consensus of the dates for the presidential and legislative elections. Six additional SOWs will be developed by February 2017, to support the recruitment and deployment of volunteers before the end of the next fiscal year. The F2F project will continue to contact international and local non-governmental organizations (NGOs) and local associations that may be interested in hosting volunteers in their respective programs and projects.

**Ghana**

As of September 30, 2016, 31 assignments are in the pipeline for the first half of FY17. Of these 31 assignments, nine are in agricultural research and education, six are in staple crops, 10 are in horticulture, and six are flexible assignments. In the next six months, F2F Ghana will continue to collaborate with other ACDI/VOCA projects such as ADVANCE II and Ghana Poultry Project (GPP) for logistical support to be able to place the high volume of volunteers targeted.

**Liberia**

A total of 24 volunteer assignments are planned for FY17: seven livestock, eight horticulture, five youth in agriculture, and four flexible assignments.

**Senegal**

In October and November 2016, F2F Senegal will finalize all 28 SOWs for FY17 and will actively recruit volunteers to fill those assignments. F2F Senegal plans to host three to four volunteers per month, slightly decreasing to one to two volunteers between mid-December and mid-January— typically a slow volunteer period.
To continue host organization recruitment, F2F staff will capitalize on coordination with NCBA CLUSA projects in the regions. F2F Senegal is prepared to complete the mid-term evaluation. Interns or consultants will be tasked to handle volunteer activities while staff focus on data collection.

### III. MONITORING AND EVALUATION

The West Africa teams have continued to use ACDI/VOCA’s M&E database system—Project Reporting, Information, Monitoring and Evaluation (PRIME)—as well as our new NOVAS system, to capture relevant M&E information and generate project indicator tables. The teams work with the host organizations in their country to develop and maintain trusting relationships, enabling them to capture much of the required information for project M&E documentation. In January 2016, the F2F West Africa country directors participated in supplemental training and question and answer sessions in preparation for impact data collection reported this year.

### IV. VOLUNTEER SAFETY

**Democratic Republic of Congo**

In the DRC, safety and security measures are important for all volunteer assignments. Prior to a volunteer’s arrival in-country, the F2F country director travels to the assignment location to ensure there are lodging facilities for the volunteer and that the implementation environment is safe. The DRC F2F project has developed a brief that contains security and safety measures for volunteers. Upon arriving in-country, the volunteer attends the briefing meeting on assignment, safety measures, and security measures. Any incidents that volunteers report are submitted to the ACDI/VOCA security director, the F2F program manager, and to the USAID Mission in Kinshasa.

**Ghana**

In Ghana, safety measures are important for all volunteer assignments. Prior to a volunteer’s arrival in-country, the F2F staff travel to the assignment location to ensure there are lodging facilities for the volunteer and that the implementation environment is safe. Volunteers receive country specific briefing documents with recommendations related to personal safety.

**Liberia**

Staff and volunteer safety continues to be a high priority in program implementation. As a part of managing volunteer safety and addressing volunteer concerns about Ebola virus disease (EVD), every volunteer during the reporting period was given information on EVD symptoms and prevention.

**Senegal**

NCBA CLUSA has contracted with a security management company, RSM. They conducted trainings, guided newly-chosen security focal points in the field, and helped develop a security protocol document. F2F Senegal is included in the Senegal-wide security plan which includes a field staff phone tree for notification of a security incident, evacuation plans, etc. Volunteers are with field staff during their two to three week assignment and follow the guidance of field staff in the event of a security incident. NCBA CLUSA had the following security related incidence:
A volunteer reported an incident at her hotel in which she was “accosted by a member of the kitchen staff (an old man, who strongly grabbed hold and wrapped his arms around me and repeatedly kissed my neck and chest).” NCBA CLUSA staff moved her to another hotel where she said she was much more comfortable. NCBA CLUSA reported the incident to the hotel manager and decided to no longer use the hotel.

V. PUBLIC OUTREACH

DEMOCRATIC REPUBLIC OF CONGO

The F2F DRC project has established a collaboration with the Faculty of Agricultural Sciences of the University of Kinshasa to facilitate technical and scientific exchanges between faculty members and volunteers through volunteer lectures given during their assignments. Three volunteers (Roger Palm, William Zimmerman, and Mark Wade) conducted lectures on fish feed and nutrition, tropical soil fertility, and contract farming at the University of Kinshasa. The lectures were attended by 242 people (professors, researchers, students, and farmers). Additionally, during the reporting period, the DRC national radio broadcasted interviews of volunteers and trainees from three assignments. The interview topics included artificial insemination of catfish, fish feed and nutrition, and contract farming. These interviews provided an opportunity to share information about the F2F DRC activities to the other DRC provinces.

GHANA

F2F Ghana participated in the USAID Implementing Partners Meeting held at the Alisa Hotel Ghana on March 15-16, 2016. The meeting highlighted the progress of FTF projects and how to pave the way for excellence in agriculture in Ghana. Participants shared best practices and lessons learned on how to increase local government engagement in addressing nutritional needs through integrated agricultural and nutrition interventions. This meeting was a great opportunity for F2F Ghana to discuss volunteer opportunities with the other FTF projects.

F2F Ghana participated in several meetings organized by some of the FTF implementing partners such as ADVANCE II’s pre-harvest and pre-season events, FINGAP’s Agribusiness Financing Opportunities, and African Lead’s Champions for Change events to discuss with other actors the volunteer opportunities available.

SENEGAL

In FY16, F2F Senegal conducted outreach activities and leveraged $1,023 in volunteer resources. Volunteer Erin Schneider donated financial support to the organizations she visited. These leveraged resources were used to buy seeds, tools, and materials. NCBA CLUSA staff along with F2F volunteer, Molly Moisan, participated in the Consumer Cooperative Management Association (CCMA) annual conference in June 2016 and made a presentation about the F2F program. In August 2016, F2F Volunteer Sequoia Ireland shared her experience with NCBA CLUSA HQ staff, along with USAID, ACDI VOCA, and VEGA staff members. Further, Makhtar Diop and Pamela Karg participated in a panel discussion on September 15, 2016, “Volunteer Perspective: What Makes a Good Volunteer Assignment”, during VEGA’s quarterly meeting. NCBA CLUSA staff participated in the Peace Corps Annual conference on September 19, 2016.
Annex 1: Volunteer Assignment Summaries

DRC: Staple crops
Training on Integrated Weed Control for Rice Production, Michael J. Matthews, November 29 – December 19, 2016

Assignment Description: Michael J. Matthews provided a training on integrated weed control for rice production. This training resulted from a previous training on improved farm management in November 2014. Upon arrival, the volunteer and farmers analyzed the full list of activities for rice production in Kingabwa and the cost of each activity. The analysis identified manual weeding as the most significant cost for the farmers, leading the volunteer to recommend that farmers use herbicide to reduce the cost of weeding and enable rice farmers to have the income needed to invest in the next rice production season. Michael trained 10 individuals, including 1 woman, on integrated weed control techniques including safety measures. Trainees were from the local NGO BATIDE, association APRKING, cooperative COOPERKING, CLEMYS farm, Kaza farm and from a pesticide supply company ALM.

Target host organizations: BATIDE, APRKING, and COOPERKING

Recommendations:
- Develop a series of short trainings on planting, mechanical weed control, insect problems, disease problems.
- Hold multiple small meetings to conduct these trainings, enabling women to attend (encourage children). Begin with the AfricaRice planting video prior to the start of this planting season.
- Monitor effect of initial training (Planting Video) by developing a metric counting tillers and/or recording yield numbers.
- For BATIDE- Conduct immediate pesticide safety training for key co-op leaders and co-op applicators. Include the importance of a leadership role in this training.
- Develop a Crop Calendar for the each of the three growing conditions in Kingabwa (A, B,C).

Training on Rice Seed Production Techniques, Roland Peer Groves, March 26 – April 13, 2016

Assignment Description: Roland Peer Groves trained 38 individuals, including 16 women, which belonged to three associations, one cooperative, and one local NGO, National Rice Program and National Seed Service. Farmers that benefit from the local NGO, MAMBELI, did not have skills and knowledge of sustainable rice seed production techniques. MAMBELI requested a F2F volunteer to provide technical assistance on rice seed production training. Roland conducted a training on best practices for rice seed production and advised MAMBELI on how it can help train other associations on the techniques learned after the assignment.

Target host organization: Association des Paysans Riziculteurs de Mikonga 2 (APRM2), Association des Mamans Maraîchères et Riziculteurs de Kingabwa (AMAMAR) and Union des Leaders Producteurs
Agricoles de la Tshangu (ULPAT)

Recommendations:

- MAMBELI should provide associations involved in seed production with basic training in rice seed production techniques through the existing documentation.
- MAMBELI should help associations involved in seed production with a basic planning for rice seed production.
- MAMBELI, in conjunction with the National Rice Program, should start demonstrations for best agricultural practices (SRI, etc.)
- MAMBELI should help the associations develop into self-sustaining organizations.


Assignment Description: Ilan Bar trained 14 agronomists, including 4 women, from the NGO Bureau d’Appui et d’Assistance Technique aux Initiatives du Développement (BATIDE), farmer members of the Association de Paysans Riziculteurs de Kingabwa (APRKing), and Groupe de Leaders pour l’Aménagement et Réhabilitation des Infrastructures Agricoles (GLARIA). BATIDE requested technical assistance from Ilan on conducting an environmental impact assessment. The purpose of the assessment was to mitigate impacts caused by the renovation of the irrigation scheme and the intensification of rice and vegetable production. Ilan trained the group on the necessary steps of such an assessment and worked with the participants to conduct the assessment.

Target host organization: BATIDE

Recommendations:

- BATIDE performs a thorough and complete water and soil analysis using a reliable lab.
- BATIDE and farmers monitor the changes in water quality and soil condition by measuring EC and pH with the test meters.
- BATIDE and farmers try to install a very small (8m. vegetable row) of gravity fed drip system (bucket drip irrigation).

DRC: Poultry, including Aquaculture subsector

Training on Catfish Artificial Insemination, Joseph Sullivan, November 8 – 22, 2015

Assignment Description: Joseph Sullivan trained 18 individuals, including 4 women, who were members of two associations, independent
farmers, and the staff of National Ministry of Agriculture, Fishing and Livestock. Farmers raise tilapia, catfish and some fresh water fish species, but had not received training on fish culture techniques, pond construction, or artificial insemination fish. Catfish receive the best market prices, however rarely reproduce in ponds. Joseph trained the participants on African catfish spawning to produce fingerlings. Joseph’s assignment provided trainees with information on fish feed, fingerling production considerations, artificial insemination techniques, and on hatchery management practices including feeding.

Target host organizations: Associations des Pisciculteurs, Eleveurs et Planteurs de la Vallee de Mikondo; Ferme Consommons Local (FCL); Croisade Nationale Pour la Sécurité Alimentaire (CNSA), and Centre d’Encadrement Pour le Développement Communautaire (CEDEC)

Recommendations:
- Fish culture association start producing catfish fingerlings.
- Fish culture associations build infrastructure to obtain the equipment and supplies for good fish culture.
- Fish culture association should do what is necessary to produce feed within their members or other potential feed buyers.
- Other forms of fish cultures should be considered in areas where the soil is too sandy to support traditional earth ponds.

Training on Fish Feed and Nutrition, Roger Palm, January 27 – February 7, 2016
Assignment Description: Roger Palm trained 16 individuals, including 1 woman, who were members of three farmers associations or independent farmers. Fish farmer members of host organizations had not been trained on fish feed formulation, feed production or fish nutrition resulting in low productivity of fish and subsequently low income for the farmers. Based on his previous experience in the DRC as a Peace Corps volunteer working on fish farming and visits of the farms during the assignment, F2F volunteer, Roger, determined that there were a number of barriers to fish production that farmers were facing beyond just fish feed development. He addressed these issues in his training sessions and farm visits, including topics such as organization management that were not originally planned for.

Target host organizations: Associations des
Pisciculteurs et Eleveurs et Planteurs de la Vallee de Mikondo, Association Tomibikisa, Centre d’Encadrement Pour le Développement Communautaire (CEDEC), Ferme Ngeli-Ngele, Ferme Consommons Local (FCL), Ferme Dalis Bompanga, and Ferme FORAGELIE.

Recommendations:
- ACDI/VOCA continue to provide short-term training opportunities to fish farmers as much as possible in the absence of provision of service by the National Extension Service.
- ACDI/VOCA provide fish farmers with on-site technical advice from competent aquaculture experts.
- The advanced fish farms Ngeli-Ngele and the CDL farm should hold meetings with all of the workers and technicians to create a fish pond management plan.
- More basic changes including better pond site selection, improved pond construction, and aquatic plant removal, as well as better and more consistent feeding and fertilizing for the less advanced fish farms.

Training on Cooperative Business Planning and Market Studies, Edward Doherty, February 6 – 24, 2016

Assignment Description: Edward Doherty trained 21 individuals, including 6 women on cooperative business planning and market studies. The volunteer provided a framework for the cooperatives to build their own plans to fit the unique structure and leadership of each cooperative. Edward’s training included defining the roles of leaders and members, leadership development, and how the group can conduct a market analysis. This assignment was a one of the follow up assignments recommended by a previous F2F volunteer.

Target host organizations: Croisade Nationale Pour la Sécurité Alimentaire (CNSA) and Société Cooperative de Développement (SOCODAG)

Recommendations:
- SOCODAG and the new cooperative COFEKI should meet on quarterly basis.
- The new cooperative COFEKI should carry out a market analysis.
- The new cooperative COFEKI should develop a list of members’ rights and responsibilities.
- The association CNSA should select and develop future leaders who will assist in carrying out plans. They should be in direct contact with current and prospective members to provide energy and growth for the new cooperative COFEKI.

Training on Cooperative Leadership and Governance, Anais Troadec March 28 – April 13, 2016

Assignment Description: Anais Troadec trained 18 individuals, including 7 women, from two organizations. After working with the host organization on a previous assignment, Anais recommended two follow-up trainings for CNSA members, including one in leadership and governance. Anais discussed with the groups topics, such as communication and leadership skills, which were aimed at building participants’ capacities to run a for-profit cooperative.
Target host organizations: Croisade Pour la Sécurité Alimentaire (CNSA) and Société Cooperative de Développement (SOCODAG)

Recommendations:
- The new cooperative, Cooperative des Fermiers de Kinshasa (COFEKIN) should complete and submit its Statutes and Bylaws to the appropriate government office.
- Organize a General Assembly in the Cooperative des Fermiers de Kinshasa, holding elections for new officers.
- Develop a three year strategic plan including vision, mission, objectives, etc.
- Hold a meeting between COFEKIN and SOCODAG on a quarterly basis.

Training on Contract Farming, Mark A. Wade, June 17–July 2, 2016

Assignment Description: Mark A. Wade trained 15 poultry farmers, including 4 women, belonging to the (newly created) Cooperative des Fermiers de Kinshasa (COFEKIN) and managers of the cooperative Société Coopérative de Développement Agricole (SOCODAG). The two cooperatives SOCODAG and COFEKIN plan to sign contracts with farmers, services providers and input suppliers, however did not know how to execute contract farming. Mark discussed with the two cooperatives different types of contract farming, identifying the appropriate type of contract farming for their social and economic environment, and establishing the foundation of a long-term partnership among contract parties.

Target host organization: Cooperative Des Fermiers De Kinshasa (COFEKIN) and Société Coopérative de Développement Agricole (SOCODAG)

Recommendations:
- Development of an information mechanism (fact sheet, extension bulletin etc.) for the farmers to better understand contract farming, characteristics of successful cooperatives, and strengths of a free-market economy.
- Make a contract template available for all the parties involved in the contract farming.
- Adoption of good management practices (record keeping, benefit/loss statement, etc.).
- Development of partnership with the University of Kinshasa.

DRC: Flexible

**Assignement Description:** William James Zimmerman trained 16 members, including 3 women, of the Association de Paysans Riziculteurs de Kingabwa (APRKING), Groupe de Leaders pour l’Aménagement et Réhabilitation des Infrastructures Agricoles (GLARIA), Bureau d’Appui et d’Assistance Technique aux Initiatives du Développement (BATIDE), AVODEC, and Cooperative de Riziculteurs de Kingabwa (COOPERKING). The groups requested technical assistance on compost production and management to enable farmers to sustainably produce compost for vegetable production with on farm inputs, like crop residues, and off farm inputs, such as household wastes. William trained the technical team that will manage the compost production unit in compost production techniques, compost quality, compost use, and management of the unit.

**Target host organization:** Association de Paysans Riziculteurs de Kingabwa (APRKING) and Cooperative de Riziculteurs de Kingabwa (COOPERKING)

**Recommendations:**
- Construct the central composting facility during the 2016 dry season.
- Provide alternative sources of soil organic matter (SOM) and nitrogen from general plant waste, uncomposted rice straw, and rice bran over the next 12 months.
- Attempt to diversify leaf vegetables effectively in Zone A and on selected raised beds in Zone B during the dry season.
- Switch to transplanting rice as a row crop or in the Système de Riziculture Intensive (SRI).


**Assignement Description:** Eric Steven Guetschoff trained 15 individuals, including 6 women, from the local NGO APDIK and from the cooperatives Monyi, Luberizi, Sange and Nyakabere. The volunteer educated the participants on the necessary knowledge and skills to develop a strategic business plan and how to link their business plans to their visions, missions, objectives and overall strategies. Eric emphasized the importance of considering their available resources, economic environment, and associated risks when developing their business strategies.
Target host organization: Cooperatives Monyi, Luberizi, Sange and Nyakabere

Recommendations:

- Host further training on improved agro-pastoral farm management.

Training on Rabbit Husbandry, Julie Martha Engel, August 30 – September 1, 2016

Assignment Description: Julie Martha Engel trained 199 individuals, including 176 women, from the Cituzo-Kashesha farmer groups and Cisheke-Ihembe farmer groups. Julie’s training covered topics on rabbitry management, rabbit feed and nutrition, rabbit reproduction, and rabbit disease prevention and control. The training built capacity in the groups’ abilities to effectively and profitably manage their businesses.

Target host organization: Cituzo-Kashesha farmer groups and Cisheke-Ihembe farmer groups

Recommendations:

- Provide water for the rabbits.
- Feed the rabbits a wide variety of forage.
- Make sure forage is off the substrate.
- Remove feces, bedding and urine frequently (every other day).
- Provide natural light.
- Increase ventilation and airflow in the rabbitry.

Julie explains to farmers rabbit disease in a rabbitry. Cisheke-Ihembe village, South Kivu province DRC, 2016.
Ghana: Staple Crops

Business Development Strategies (YEMFU), Bill Nichols January 16 – 30, 2016

Assignment Description: Volunteer Bill Nichols trained the leaders of Yemyoliya Food Farming and Marketing Union on business development strategies, the development of proposals and linkages to end markets. Mr. Nichols trained 20 participants on how to strategically improve their farming businesses. The topics discussed included how to identify and approach prospective customers and partners; management structure and organization of primary groups; dry season inactivity; writing winning proposals for credit, customers, partners; and how to approach farming as a business.

Target host organization: Yemyoliya Food Farming and Marketing Union

Recommendations:
- Offer technical training on soil fertility and selection of crops to plant, as suggested by the members.
- Prepare proposal for MOFA if Yemyoliya plans to seek tractors on loan.
- Seek dry season activities to keep the members busy.

Improved Business Planning, Conrad Brian Law, October 10 – 24, 2015

Assignment Description: Volunteer Conrad Law worked with the Garu-Tempane Farmers Association (GFA) to draft a business plan covering the general administration and trained them on leadership, teamwork and goal setting in order to strengthen the association’s operations and make it more sustainable. Members of the association (47% of which are women) cultivate mainly sorghum, maize and soybeans as their major crops under rain-fed conditions. He also worked with the group to redefine their values, vision and mission and assisted the group in restructuring their electronic records system and provided several recommendations for improvement.

Target host organization: Garu-Tempane Farmers Association

Recommendations:
- Complete development of goals and action plans and the Strategic Business Plan by January 2015
- Seek additional training for members on best practices and farming as a business
- Begin the process of writing policies and procedures for operating the association and establish a Records Management program for the office.

Capacity Building on Credit Management and Negotiation, Janet Buresh, February 13 – 26, 2016

Assignment Description: The activities of Garu-Tempane Farmers Association (GFA) include facilitating members’ access to agro inputs, loans and bulk marketing of members’ produce. Volunteer Janet Buresh built the capacity of members of GFA in credit management and negotiation, record keeping and...
contract management. In addition, Janet educated GFA members on loan acquisition and repayment processes and facilitated an activity to have members calculate the real cost on loans. The training was very practical and involved many hands-on activities to engage the association’s members.

**Target host organization:** Garu- Tempane Framers Association

**Recommendations:**
- GFA should communicate with their bank about loan acquisition problems its members are facing.
- Leaders of GFA should engage frequently with fertilizer dealers, learn delivery schedules and negotiate terms, penalties and dates for their transactions.
- Leaders of GFA should talk to sorghum aggregators/buyer about pick up dates and then identify other aggregators to interview by August 2016.

**Improved Farm Management, Dr. Paul Gorman, November 1 – 14, 2015**

**Assignment Description:** The objective of Dr. Paul Gorman’s assignment was to improve members of N’popin Farmers Association’s (NFA) understanding of farm management, improved production strategies, and outgrower schemes. He was also expected to build the capacity of the association in “farming as a business”, financial management and record keeping. Dr. Gorman provided training on farm management, financial management and record keeping that included farm budgeting, financial and production records, and break-even analysis. He also developed a recording template and tractor activity log sheet to guide NFA in its operations. He led outgrowers in discussions about their common purpose and priorities for the future in addition to advising NFA on measures to strengthen and enhance the sustainability of their business model. N’popin Farmers Association (NFA) was originally a farmer association setup in 2006 at Nankpanduri in the northern region of Ghana. Due to management challenges, it was dissolved and revitalized under the leadership of a young entrepreneur who acted as a nucleus farmer and introduced a new management model that utilized the same growers. NFA produces rice, maize and soybeans and works with 320 outgrowers.

**Target host organization:** N’Popin Farmers Association

**Recommendations:**
- NFA should utilize a simple mechanical 1-row crop cultivator, either pushed by a farmer or pulled by an animal such as a donkey, to remove all weeds between each row and loosen hard soil for improved aeration and absorption of rain water.
- NFA should use the recording template created during the assignment to improve small farmer production and financial records.
- Improve organic matter content of the soil by spreading animal waste on the soil, avoid burning crop residue and by mixing crop residue into the soil with a tillage tool to avoid surface decomposition.

**Organizational Management and Strengthening, Jose Molina, May 13 – 27, 2016**

**Assignment Description:** The purpose of this assignment with the Jirapa Farmers Network was to build members’ and leaderships’ capacity in keeping records of their activities, mobilizing resources, and effective management of the association. Volunteer Jose Molina, an Agricultural Market Systems Development Specialist, worked with the members and leadership of the association to assess the various management constraints of the association. The training session he led included education on revenue mobilization, record keeping, and managing savings. The volunteer also discussed leadership roles and responsibilities and made several recommendations for improvement.
Target host organization: Jirapa Farmers Network
Recommendations:
- The district managers should draft association bylaws and ensure that all members have access and become familiar with them.
- Replace zone- and group-level managers that are inadequately performing as soon as possible.
- JFN should continue to develop and provide useful benefits for members so that they will continue to want to pay for the service of the association.

Assessment of Agricultural Land, Dr. Seth Asare, March 4 – 18, 2016
Assignment Description: Akandem Farms (AKAF) is a private enterprise engaged in the production of maize, rice and soybeans. It works with 1,860 outgrowers and provides plowing services to these farmers on credit basis. Currently, AKAF is receiving support from the Ghana Commercial Agriculture Project (GCAP) to expand their farm by an additional 500 acres. 312 acres of these land has already been developed. F2F Volunteer Seth Asare assisted AKAF to assess the current utilization of the company’s agricultural land and provided suggestions for improvement on drainage, moisture retention and erosion reduction to improve the productivity of the land in addition to planning for sustainable land tenure in the future.

Target host organization: Akandem Farm Ltd
Recommendations:
- Akandem Farms should use their agricultural land as agroforestry parkland, often referred to as “farmed park land.”
- The company should install temperature indicators inside the green house.
- Soil tillage and best seeding practices should be used along the land contours.
- Protect all river banks with native grass shrubs.

Group Dynamics and Organizational Strengthening, Dr. Thomas Miller, March 19 – April 2, 2016
Assignment Description: The Akutuase Rice Farmers Onuado Kuw (ARFOK) is an association of 50 farmers located in the Ashanti region of Ghana. The group was established in 2009 with the assistance of the Ministry of Food and Agriculture (MoFA) and cultivates mainly rice and maize as their major crops. ARFOK faces challenges on how to manage their association effectively as well as keeping records of their operations. Volunteer Thomas Miller, conducted a SWOT analysis of the group and trained them on the roles and responsibilities of leadership and members. He addressed the concepts of problem solving and decision-making, effective
communication and how to organize effective meetings. He also trained the members on strategies to increase association membership.

**Target host organization:** Akutuase Rice Farmers Onuado Kuw (ARFOK)

**Recommendations:**
- ARFOK should request assistance to establish a village savings bank, credit union or an agricultural finance cooperative.
- Solicit assistance for determining the feasibility and source of funds to rent or purchase a rice thresher and a corn sheller.
- Work with agencies and organizations to provide literacy training for members of the farmer’s associations.

**Group Dynamics and Organizational Strengthening, David K. Addae, March 11 – 26, 2016**

**Assignment Description:** Amenuveve Farmers and Fish Growers Association (AFFA) has 250 members located at Awate-Todzi in the Volta region of Ghana. The group has been in existence since 2012 and cultivates rice and maize as major crops. Other farmers are involved in bee keeping, livestock rearing and the cultivation of cassava, ginger and sugar cane. To help strengthen and sustain the association, AFFA requested technical assistance in organizational strengthening and group dynamics. F2F Volunteer Dr. David K. Addai trained the association’s members and leaders on their roles, responsibilities, team work, record keeping and association management. He also helped AFFA to develop a strategy to increase association membership.

**Target host organization:** Amenuveve Farmers and Fish Growers Association (AFFA)

**Recommendations:**
- The association needs to commit to adopting better record keeping for both the organization’s and farmers’ records.
- To maximize marketing and increase sales, association members should sell their harvested corn to a selected group of aggregators, if possible.
- AFFA should develop a better working relationship with the Ministry of Food and Agriculture (MoFA) and solicit agricultural inputs and extension services on regular basis.

**Group Dynamics and Organizational Strengthening, August Braaskma, January 22– February 6, 2016**

**Assignment Description:** The Zurugaluluabkanbey Farmers Association (ZFA) requested a Farmer-to-Farmer volunteer to build the skills of the leaders of their primary groups in relation to record keeping, group dynamics, leadership roles and duties to enable them succeed in the globally competitive world. Farmer-to-Farmer volunteer, August Braaskma, assessed the problems associated with the group’s
operations, leadership structure, and roles. Based on his findings, Mr. Braaskma trained 17 members of the primary groups on the role of group leaders, good leadership characteristics, organizational resiliency, optimal mechanization for farming, budgeting, business plan development and proposal writing.

Target host organization: Zurugaluujaabkanbey Farmers Association
Recommendations:
- ZFA should schedule a meeting to create a budget for crops, specifically rice.
- Develop an annual budget for the Secondary Level Farmer Based Organization (SFBO).
- Schedule a budget training for the association’s farmers.

Organizational Management and Marketing, Dr. Carl Pherson, February 27 - March 13, 2016
Assignment Description: The Tikarinungu Farmers Association (TIFA) located in the West Mamprusi district of the Northern region was formed in 2007 through the assistance of the Association of Church Based Development (ACDEP). Despite their engagement with ACDEP, TIFA has little capacity to manage the association and train its leaders on cooperative management. Dr. Carl Pherson trained the association on setting organization objectives, developing a farm budget, cash flow management, and made recommendations for improvements. The enhanced organizational capacity will help the association to serve their members better.

Target host organization: Tikarinungu Farmers Association
Recommendations:
- The Executive and Finance Committees should use a customized version of the cash flow template (developed during the training) to make a number of trial calculations.
- Commit to reviewing the accuracy of the 2016-17 cash flow budget in order to make adjustments for the 2017-18 year.
- Include the modified cash flow budget as part of the documentation presented to lenders to justify a request for lower rates.

Assignment Description: To improve their yield and consequently their economic wellbeing, Farmer-to-Farmer fielded Kenneth Rice to assist the Tumsomma Farmers Association in its farming operations. Kenneth assessed the production constraints related to the association’s farming operations, such as seed selection and fertilizer application methods. Based on his findings, he trained 18 individuals in improved agronomic practices in maize and soybean production. He also donated sachets of soya bean inoculants and assorted vegetable seeds to the members of the association. Kenneth made recommendations to improve yield.

Target host organization: Tumsomma Farmers Association
Recommendations:
- The union should organize interactive meetings with agro dealers to educate their members on the appropriate use of their products including fertilizers, agrochemical, seeds, etc.
- The association should advocate for the farmers training center to establish some demonstration farms to provide the farmers with additional knowledge of good agronomic practices.

Organizational Management and Marketing, Conrad Brian Law, February 19 – March 12, 2016
Assignment Description: While in-country, Conrad Law completed an assignment with the Heritage Seed Company (HSC), a leading seed company in Northern Ghana that specializes in the production of certified seed for maize, cowpea, rice, sorghum and soybeans for supply to farmers at affordable prices. Heritage seed requested training to build leadership capacity to effectively run the association and improve operations management. Mr. Law trained the management and staff of HSC on financial record keeping, inventory management, and the use of information and communication technology in their operations. Conrad also helped the organization to establish a Facebook page, register a domain name, develop a Dropbox and introduce them to Expense Manager software that enables companies to track their income and expenditure.

Target host organization: Heritage Seed Company
Recommendations:
- The management of Heritage Seed Company should develop a standard operational procedure for each item under its current organizational chart.

Organizational Assessment and Strengthening, Mary Albrecht, April 24 – May 7, 2016.
Assignment Description: Mary Albrecht completed an assignment on organizational assessment and strengthening of the Dantolga Farmers and Marketing Cooperative Union. The purpose of the assignment was to improve the services rendered by the leadership to members. Challenges for this organization have included record keeping, group dynamics, leadership roles and duties’ and how to streamline operations to fit the needs of its members. Mary trained the Union’s leadership on leadership skills and record keeping to enhance their operations. She also developed a financial record keeping template to guide their transactions and operations.

Target host organization: Dantolga Farmers and Marketing Cooperative Union
Recommendations:
- Host another volunteer who is a specialist in grain production to train farmers at primary coop levels on cost analysis, advantages of sewing hybrid maize, utilizing low-technology tools to enhance production, and proper harvesting and storage methods.
- The union manager requested that Bob Albrecht return and train members from primary coops and extension agents in new production methods for corn and soybeans.

Assignment Description: The objective of Tikarinungu Farmers Association (TIFA) is to help its members to increase maize and soybeans yields from the current 2-7 bags per acre to the national average of 10-20 bags per acre. In May and April 2016, Robert Albrecht, a Business Consultant, assessed the current farm practices of TIFA. Mr. Albrecht researched possible solutions and designed a training session on topics including yield increase, seed selection, soil testing, row marking, seed sowing, fertilizer application, record keeping, field mapping, weeding, pest control, harvesting and storage. He also engaged the participants in some practical sessions on how to construct a row spacer using local materials like a discarded bicycle wheel and recommended best practices for improvement.

Target host organization: Tikarinungu Farmers Association
Recommendations:
- Farmers should properly prepare the soil before seeding.
- Buy seeds from certified seed dealers rather than from the open market, which in most cases are mixed varieties.
- Encourage the use of hybrid seeds since they produce uniform plants.
- Store seeds with the right moisture content in safe and clean places.
Group Dynamics and Organizational Strengthening, Edward Doherty, April 19 – 30, 2016
Assignment Description: F2F Volunteer Edward Doherty provided technical assistance on group dynamics and organizational strengthening for the Nsikaa Cocoa and Crop Farmers Association (NCCFA). NCCFA is an association of maize and rice farmers. While the group has proven to be effective and gained the support of the Ministry of Food and Agriculture (MOFA), they have little knowledge on operations management and basic record keeping. Cooperative Development expert Edward Doherty conducted training sessions covering leadership, communications, cooperative organizational structure, and conflict resolution. He also emphasized the importance of teamwork and association management. Finally, he helped NCCFA to develop a strategic plan.

Target host organization: Nsikaa Cocoa and Crop Farmers Association (NCCFA).
Recommendations:
• The MoFA extension agent should organize regular meetings for cooperative leaders to discuss successes and problems among themselves and assist one another.
• NCCAF should adopt the Hub and Spoke Model to improve communication between officers and members.
• The community should consider forming an Umbrella Group, under which all cooperatives would operate independently for membership and goals, but have combined strength in marketing, storage, transportation, and buying power.

Organizational Strengthening, Group Dynamics, William Hughes, April 1 – 16, 2016
Assignment Description: The objectives of William Hughes’ assignment were to improve the host (Lorlornyo Food Farmers Association) members’ understanding of financial management and to build the capacity of the association in organizational development and management. Mr. Hughes engaged with the association members to understand the current organizational challenges facing the association. He then provided training on leadership roles, responsibilities, team work, record keeping and association management. He introduced and discussed the “shoe box” method of keeping records and gave guidelines on proposal writing. He finally educated members on how to develop a strategic plan and made recommendations for improvement.

Target host organization: Lorlornyo Food Farmers Association
Recommendations:
• The association needs to commit to adopting better record keeping methods for both the organization’s and farmers’ record keeping.
• To maximize marketing and increase sales, the members of the association should aggregate if possible and sell their rice in groups at an agreed price.
• The association needs to begin keeping records of expenses and income.
• Prepare project plans, budgets, and written funding proposals for the solar bowl irrigation system.

Group Dynamics and Organizational Strengthening, Seneca Gates, July 16 – August 1, 2016
Assignment Description: F2F fielded Seneca Gates to work with the Amenorvinyo Group (AG) at Kpando on group dynamics and organizational strengthening. AG is a women’s group which was formed with the aim of providing bakery services, creating employment and improving the livelihoods of rural women. Mr. Gates provided training to members on how to draft a strategic plan and held discussions on several topics including enterprise management, reduction of monthly dues, book keeping and budgeting. There were also discussions on the importance of acquiring legal registration status and organizing monthly
general meetings to ensure constant contact and knowledge sharing for all members of the cooperative. Seneca anticipates that if his recommendations are adapted, it will help the members to understand the different roles within the cooperative and also help leaders to manage the cooperative more effectively.

Target host organization: Amenorvinyo Group (AG)
Recommendations:
- Write a strategic plan for the organization.
- Reduce the monthly dues from 2 cedis to 1 cedi per month, or alternatively, reduce dues to zero and instead take a percentage of member profits into the cooperative.
- The group should go through enterprise management training and a bookkeeping class (budgeting). This class should also focus on teaching entrepreneurial thinking.
- Establish monthly meetings to ensure constant contact and knowledge sharing for all members of the cooperative.

Organizational Strengthening and Record Keeping, Diane Griffin, July 16 – August 1, 2016
Assignment Description: F2F Volunteer Diane Griffin provided technical assistance on organizational strengthening and record keeping for Volta Cereal Production and Processing Group (VCPPG) at Hohoe. VCPPG is a rice value chain association which was formed in July 2007 to produce and market local rice. Although the group’s membership has increased since its inception, members were not able to keep records or clearly determine their profit margin at the end of each season. Diane was fielded to train the leaders of VCPPG on their roles and responsibilities. Diane conducted an initial assessment of VCPPG and designed a 5-day training focused on record keeping, developing strategic goals, supply management services and how to generate funds for expansion of their activities.

Target host organization: Volta Cereal Production and Processing Group (VCPPG)
Recommendations:
- VCPPG should employ solid record keeping to accurately report what assets and earnings the cooperative has by the end of the year.
- They should clearly show if the cooperative is operating at a profit or loss.
- Develop strategic goals to achieve the mission of the cooperative.

Group Dynamics and Organizational Strengthening, Jose Molina, August 27 - September 10, 2016
Nkoso Farmers Association (NFA) is an association of maize farmers located at Ejura in the Ashanti region of Ghana. The association faces challenges with group dynamic and organizational strengthening, record keeping and financial management. Volunteer Jose Molina conducted trainings on leadership development, membership growth, goal setting, record keeping and strategic planning. He also trained members and leaders on effective communication and team work.

Target host organization: Nkoso Farmers Association
Recommendations:
- NFA should encourage all members to pay dues and attend meetings regularly.
- The leaders should allow only regular and committed members to access benefits from the group.
- Print association constitution and distribute to all members.

Ghana Horticultural Crop Subsector

Electrical Energy Management, Professor Emeritus Dennis Buffington, October 28 -November 17, 2015
Assignment Description: HPW Fresh and Dry Limited processes dry fruits mainly pineapples, mangoes and coconut and exports them to Europe. Due to the national load shedding challenge, HPW decided to
monitor and improve the efficiency of its entire energy set-up and internally generate energy to reduce the downtime and increase productivity. Professor Emeritus Dennis Buffington was fielded to assess the current energy situation of the firm to ascertain the energy consumption per kilowatt hour and to explore the cheapest and most reliable source of energy available. Professor Buffington trained HPW staff on energy management and maintenance to ensure consistent supply and utilization. Prior to the arrival of the volunteer, the company had planned to procure a solar photovoltaic (PV) system. The volunteer reviewed the sales and installation agreement and advised management accordingly.

**Target host organization:** HPW Fresh and Dry Limited

**Recommendations:**
- HPW should select high efficiency capacitors and start motors and add capacitors close to the big loads and/or banks of capacitors.
- Entry points of electricity from ECG grid, transformers, transfer switches and distribution board need to be properly designed for safety and reliability.
- Connection point with high voltage must be protected.

**Farming as a Business and Marketing, Dr. Kenneth Neils, January 30 – February 13, 2016**

**Assignment Description:** Volunteer Kenneth Neils was invited to work with the Brenyekwa Cooperative Vegetable Growers Society (BCVGS), an association that mainly cultivates tomatoes. Dr. Neils provided guidance and training to BCVGS on “farming as a business.” During the assignment he conducted focus group discussions with farmers and traders to understand the marketing challenges of the association and gave suggestions on effective marketing of their produce and bargaining for better prices. The main outcome of this assignment was the development of a strategic plan to address BCVGS’s marketing problem and an action plan to guide the leadership of the group. Finally, he trained the members of the association, the extension agents of the Ministry of Food and Agriculture (MoFA) present, together with some government officials on implementation of the strategic plan.
Target host organization: Brenyekwa Cooperative Vegetable Growers Society (BCVGS)

Recommendations:
- Access improved, hybrid tomato seeds for use in field trials in farmers’ fields
- Train cooperative members on proper use of agricultural chemicals in tomato production.
- Negotiate with traders on quality of tomatoes that will give the farmers a higher price when standards are met.

Improved Processing, Packaging and Marketing of Mushrooms, Sandra Williams, March 21 – April 19, 2016

Assignment Description: Volunteer Sandra Williams provided technical assistance on improved processing, packaging and marketing of mushrooms to Bemcom Youth Association (BYA). BYA has benefitted from the assistance of several F2F volunteers to build its processing, marketing, and organizational capacity. This various assistance has enabled BYA to register with the Ghana Foods and Drugs Association (FDA). With its current certification from FDA, BYA seeks to prepare its members to increase their production, processing and packaging of mushrooms to meet the market demand. Volunteer Sandra Williams was fielded to train members of BYA on processing, packaging and marketing of mushrooms using clamshell. In addition, the volunteer created a mushroom recipe book and supported BYA to design the construction of a shiitake and oyster spawn production facility.

Target host organization: Bemcom Youth Association (BYA)

Recommendations:
- The association needs to improve its packaging in order to make products more attractive by using clamshells.
- The association needs to begin improving processing, handling, weighing, drying, and value-added products.
- The association needs to implement improved marketing practices including attending local events and the Ghana mushroom festival.

Improved Processing, Packaging and Marketing of Mushrooms, Douglass Williams, March 21 -April 19, 2016

Assignment Description: F2F Volunteer Douglass Williams, a mushroom production expert was recruited to provide technical assistance on the cultivation of shiitake mushrooms to Bemcom Youth Association (BYA), to help increase farmers’ productivity and profits. The volunteer identified some tree species suitable for production. These tree species were cut into various logs for the production of the shiitake mushroom. He then trained BYA on production techniques and the control of pests and diseases. Finally,
Douglass trained BYA on the use of sawdust for production. 

**Target host organization:** Bemcom Youth Association (BYA)

Recommendations:
- Protect the production logs from contamination and pests and manage those that do occur by checking the laying yard daily for cleanliness and clean as needed.
- Manage moisture content by observing cracking on the ends of the logs as indicators of moisture content, as described in procedures. Take moisture samples once a month.

**Group Dynamics and Organizational Strengthening, Gerald Skiles, April 1 – 15, 2016**

**Assignment Description:** Members of Nipa Hia Mmoa Farmers’ Association (NHMFA) cultivate plantain and cassava as their major crops. The association works closely with MoFA for technical support, but still had challenges with capacity building and group dynamics. To help strengthen the association, volunteer Jerry Skiles provided training on organization assessment, strengthening, and group dynamics. Some of the main outcomes of this assignment included the creation of a template on record keeping and budgeting, business planning, organizational management, and group dynamics. Mr. Skiles also trained the members on effective communication, marketing, and collective bargaining. He encouraged the group leaders to develop a strategy to ensure members derive maximum benefit from the group.

**Target host organization:** Nipa Hia Mmoa Farmers’ Association (NHMFA)

Recommendations:
- MoFA should assist leaders and members of NHMFA to make a household and business budget. This will enable them to discern their household and business expenses and incomes each month.
- Leaders and members should set organizational goals, business goals and create plans for achieving their objectives for 1 month, 6 months, 1 year, 5 years, and 10 years.
- MoFA should assist NHMFA to develop a business plan in 2 months’ time. The business plan should be conceptualized with all group activities.

**Group Dynamics and Organizational Strengthening, Matthew Wolverton, February 19 - March 4, 2016**

**Assignment Description:** Matsekope Farmers Association (MFA) has over 136 registered members. In order to improve association efficiency and potentially expand, the management team needed support in their financial management systems, record keeping and team work. F2F volunteer Matthew Wolverton trained MFA on the importance of keeping good financial and production records and how MFA members can improve production and financial management. One of the main outcomes of this assignment was the creation of a constitution which clearly defines the leadership’s roles and responsibilities and by-laws.

**Target host organization:** Matsekope Farmers Association (MFA)

Recommendations:
- Submit the MFA By-laws to the Ministry of Cooperatives for approval.
- As approved by the general membership, purchase a record book for each registered cooperative member and begin to hold regular workshops on record keeping.
Good Agronomic Practices for Vegetable and Water Melon Production, David Addae, August 20 – September 6, 2016

Assignment Description: Volunteer David Addae provided technical assistance to Matskekope Farmers Association (MFA) on good agronomic practices for vegetable and watermelon production. MFA is made up of tomato, pepper, and watermelon farmers who lack the technical knowledge on good agronomic practices to increase their yield. Dr. Addae assessed their farming operations and assisted the association to develop a Strategic Development Plan and an action plan. He also assisted the group to form various committees for different activities such as Land Acquisition, Building, Promotions and Marketing.

Target host organization: Matsekope Farmers Association (MFA)

Recommendations:
• The cooperative should adopt a better green house mechanism for tomato and pepper seedlings.
• Members should be encouraged to grow only varieties that have market potential, adaptable and disease resistant.
• The cooperative should participate in timely harvesting to prevent losses.


Assignment Description: To improve the yield of their vegetables and consequently their economic wellbeing, Farmer-to Farmer Ghana fielded Muamba J. Kabeya to help Nasara Farmers Association in its farming operations. The volunteer assessed the production challenges related to their farming operations, and trained the individual farmers on improved seed selection methods, site selection, nursery management, land preparations and other improved agricultural practices in vegetable production. Dr. Kabeya visited some farms and trained the farmers on physical, biological, and cultural methods of controlling pest and diseases. Finally, he made some recommendations for improvement.

Target host organization: Nasara Farmers Association

Recommendations:
• Purchase seeds only from certified seed suppliers (expand current networks).
• Store well-dried seeds in a confined and air-tight container with a cover.
• If you produce your own seeds, make sure they are dried to at least 12-14% moisture content and are free from any pest attack or disease infection before you store as described above.
Subsector
Training of Trainers on Mushroom Spore Production, Dr. Van Cotter, May 5 – 22, 2016

Assignment Description: Subsequent to Dr. Greg Fonsah’s assignment, The Frances Mueller and Virginia the Lageschulte Training Centre (YATC) requested additional F2F assistance in the area of mushroom production. YATC is a center that engages in training the youth in agro-related enterprises. Trainees who have started commercial production have challenges with the supply of quality spawn and contaminant-free growth medium. This has limited their capacity to meet the growing demands of mushroom. Dr. Van Cotter trained YATC staff and selected mushroom farmers on how to produce tissue cultures for quality spawn production, control of spawn contamination in substrate production, improved production of oyster mushroom, and developed a manual for quality spawn production. He also introduced the participants to other new methods of cultivation, such as straw cultivation.

Target host organization: Frances Mueller and Virginia the Lageschulte Training Centre (YATC)

Recommendations:
• Encourage the participants to form a small group of young, motivated individuals with good skills and potential for oyster mushroom spawn production and also give support to individuals who would like to pursue setting up a spawn laboratory.
• Think, work and manage the spawn as a highly specialized microbiology, mycology endeavor that requires absolute sanitation and germ-free work conditions.
• Once colonized, always keep the spawn refrigerated in darkness, for short and relatively long storage periods.

Training of Trainers, Mushroom Farming as a Business, Dr. Khalid Hameed, May 6 – 23, 2016

Assignment Description: As information becomes increasingly available, it is essential that mushroom farmers have a full understanding of the economics of growing mushrooms and the targeted yield they need to be competitive. Currently, Youth in Agricultural Training Centre (YATC) has little capacity to train graduates who complete the center to undertake mushroom production as a business to go into medium and large scale mushroom farming. They often face challenges with inadequate financial support and difficulty marketing their produce. Dr. Khalid Hameed was fielded to train the mushroom farmers on mushroom farming as a business. He also trained them on improving production practices, conducting market surveys to determine the market demand, and diversifying their production through drying, freezing and packaging and branding.

Target host organization: Frances Mueller and Virginia the Lageschulte Training Centre (YATC)

Recommendations:
• Mushroom growers should consider linking up with agribusiness students at Kwame Nkrumah University of Science and Technology to develop or refine their business plan and marketing strategy.
• Mushroom growers should consider branding their mushrooms and use attractive labelling that includes batch and date (production and expiration) on the label.
• Mushroom growers should consider expanding their offering to include high value products like mushroom powder and mushroom kits.

**Assignment Description:** Volunteer Mollie Smith provided technical assistance on the design and construction of aquaponic systems to the Department of Fisheries and Watershed Management of the Kwame Nkrumah University of Science and Technology (KNUST) at Kumasi in the Ashanti Region. The department has secured a total of 14 cubic meter tanks and plans to commence operation of an aquaponics system capable of producing fish and vegetables. Mollie trained a core group staff and students of the department in designing and constructing a simple and affordable aquaponics systems with tilapia, fingerling and vegetable production components using locally available materials. The volunteer completed a simple aquaponics design, increased capacity of staff of the department to construct such systems from locally available material, and made recommendations for improvements. Mollie also provided lectures in aquaponics to students of the department.

**Target host organization:** Department of Fisheries and Watershed Management - Kwame Nkrumah University of Science and Technology (KNUST)

**Recommendations:**

- Department staff should immediately seek to secure the aquaponics system, insuring supervision and security in order to begin stocking fish.
- Department staff should clear and level land near the fish culture unit and begin planting crops it desires to incorporate into the system, in order to grasp the challenges presented by each crop.
- For optimum performance of the system, the blower powering the system needs to be upgraded from a .5 hp to a 1 hp capacity.


**Assignment Description:** Thomas Sallee conducted a training on the use of R and InVivoStat statistical software for data analysis for the Department of Silviculture and Forest Management - Kwame Nkrumah University of Science and Technology (KNUST) at Kumasi. Mr. Sallee verified that the trainees had a basic understanding of statistical analysis. Thomas made presentations using videos, PowerPoint, and running actual software packages and provided handouts, tip sheets, practice datasets, copies of the PowerPoint presentations, and copies of the videos, in addition to a hardcopy of a reference book written by the authors of InVivoStat. The volunteer also conducted training on R Studio, which was not included in the original scope of work. The training will help the staff of the department to perform rigorous analysis of quantitative data.

**Target host organization:** Department of Silviculture and Forest Management - Kwame Nkrumah University of Science and Technology (KNUST)

**Recommendations:**

- Trainees should immediately begin attempting simple exercises in R, RStudio and InVivoStat to reinforce the lessons provided individually and in groups.
- Trainees should create sample datasets, R scripts and running InVivoStat modules to give them a
practical understanding of the steps involved in using these software packages.
- Trainees should attempt to incorporate these analysis packages into their ongoing work and plan for their utilization in future projects.

Establishing a Social Enterprise for Agricultural Extension Services, Norma Samuel, May 20 - June 4, 2016

Assignment Description: One of the objectives of Savannah Integrated Rural Development Aid (SIRDA) is to diversify their resources and sources of incomes to sustain their activities. In view of this, they set out to create a social enterprise extension system in Northern Ghana to provide extension services to local farmers for a fee and requested a Farmer-to-farmer volunteer to assist them in this direction. Dr. Norma Samuel, an extension practitioner, arrived in Tamale to support them in the establishment of the social enterprise. She conducted SWOT analysis to determine their current situation and led them to identify their niche, how they reach that niche, and the competitive advantage they have over others in that particular niche. She then trained the participants on business plan development, fund raising, communication and marketing strategy, extension program planning, extension methodologies, and program evaluation. Beside her assignment task with SIRDA, Norma also trained five more organizations that collaborate with SIRDA on their activities to participate in the training. She finally made recommendations that will support the repositioning of SIRDA and its collaborators.

Target host organization: Savannah Integrated Rural Development Aid (SIRDA)
Recommendations:
- Compile and put together strategic plan started as an official document.
- Secure website, highlight success stories.
- Develop fundraising plan to help diversify funding sources.
- Advisory committees should be established for the social enterprise.

Acquisition of Intellectual Property Rights, Inder Comar, April 19 – 30, 2016

Volunteer Inder Comar provided technical assistance on the acquisition of intellectual property rights to the Crops Research Institute (CRI) of the Council for Scientific and Industrial Research (CSIR), a government funded research institution that dedicates itself to crop and agricultural research. The objective of Inder’s assignment was to analyze the intellectual property practices of the host organization and advise on commercialization and licensing of such intellectual property. Inder observed the current state of intellectual property knowledge of the staff and developed a comprehensive IP licensing and development strategy as well as model legal documents to guide CRI in implementation. These included CRI-Contractor, Confidentiality, and IP Assignment Agreement, CRI- NDA Template, CRI Intern Agreement, and CRI Invention Disclosure Form. Most of the short term work will require CRI to organize and gather information within the organization to determine what technologies are ready for licensing and/or commercialization.

Target host organization: Crops Research Institute-Council for Scientific and Industrial Research (CSIR)
Recommendations:
- Undertake a comprehensive document management and implementation strategy to identify
the organization’s intellectual property.

- Undertake a comprehensive document management and implementation strategy to identify the organization’s potential licensing partners.
- Undertake a comprehensive document management and implementation strategy to identify potential licensing partners for in-house or joint venture development.

Training of Trainers in Poultry Meat Dressing and Packaging, Robert Corshen, December 12 – 22, 2015

 Assignment Description: The Animal Science Department of the Kwadaso College of Agriculture offers courses to students on a regular basis and practical training for farmers. The department desires to train its students and farmers in dressing and packaging poultry for commercial purposes that can compete with imported birds in the market. They also want to establish a chicken processing and packaging facility. F2F volunteer Robert Corshen trained 15 participants (9 staff members, 5 students, and 1 tradesman) in collecting live birds, slaughtering, de-feathering, eviscerating, and packaging the Ready to Cook (RTC) chicken for sale. Mr. Corshen left as reference for the host, instructional training materials and recommendations on simple equipment for dressing and packaging poultry meat for commercial purposes. Robert also offered to assist the host to develop a business plan for presentation to potential funders for the facility.

 Target host organization: Animal Science Department- Kwadaso College of Agriculture

 Recommendations:
- Have periodical review of training sessions to ensure that trainees maintain the knowledge and technique they acquired.
- Prepare a basic business plan to include the cost of establishing and equipping a small facility and the sales needed to support it.
- Submit business plan to a funding agency for a small properly equipped processing facility (stationary or mobile).


 Assignment Description: The Ghana Irrigation Development Authority (GIDA) is a government organization which promotes agricultural growth through the provision of irrigation infrastructure and other Agricultural Water Management (AWM) techniques. The Planning, Budgeting, Monitoring and Evaluation (PME) Department of GIDA is planning to conduct project feasibility studies including surveying, mapping and investigations, designs and environmental studies to establish the economic and technical viability of the projects. F2F volunteer Edward Uechi was fielded to build the capacity of GIDA PME staff on performance management, proposal and concept note development, and public-private partnerships. He also assisted participants in identifying projects and analyzing project costs. Outcomes of the assignment were a set of defined performance indicators, a standardized Excel spreadsheet to define performance indicators specific to irrigation, and a Results Framework model for performance management.

 Target host organization: Ghana Irrigation Development Authority (GIDA)

 Recommendations:
- GIDA staff need to follow through by completing the Results Framework and further define the additional performance indicators for Objectives 1 and 2.
- Standard operating procedures for monitoring and evaluation need to be documented in an operational manual.
- GIDA should develop and carry out a communications strategy.
Assignment Description: The Department of Horticulture of the University for Development Studies trains students to support development of agriculture in Ghana. To train students on methods of improving soil fertility to increase crop production, volunteer Hwei-Yiing Johnson trained the students and lecturers of the department on vermiculture technology. Dr. Johnson presented an overview of worm biology and proceeded to the field to collect worms for the culturing. She created some worm breeding, nursery and worm healing bins to facilitate the process. She used the cultured bins to understudy baby worms hatching and trained the department on quality growing conditions for the worms. She finally created an outdoor worm bed culture and gave suggestions for monitoring the bed culture and sustaining the vermiculture process.

**Target host organization:** Department of Horticulture, University for Development Studies

**Recommendations:**
- UDS to obtain monitoring equipment and/or analytical devices to support field work.
- Strengthening microbial observation and assessment.
- A consistent and reliable generator to power air and water pumps in support of compost tea brewing and hydroponic culture.

Ghana: Flexible Subsector
Agro-lending and Equipment Financing, Michael Braden, May 14 – 27, 2016

Assignment Description: Michael Braden built the capacity of Sinapi Aba Savings and Loans Limited (SASL) staff on agro-lending and equipment financing. SASL introduced an agricultural loan scheme, for actors within value chains. Its staff in the agro-lending department had not received sufficient training tailored to agro-lending and financing, therefore Michael Braden’s training was important for increasing the understanding of staff and improving service delivery for the future. Michael trained the department’s staff and manager on practical loan management techniques. He also developed an agro-lending manual for SASL.

**Target host organization:** Sinapi Aba Savings and Loans Limited (SASL)

**Recommendations:**
- Sinapi Aba should distribute the agriculture lending manual to account managers and the company’s credit administration.
- Enact regular crop inspection methodology as part of loan application.
- Collect consistent financial information and maintain credit files with historical reports from farm borrowers.

Piggery Feed Formulation- He & She Farms, Abraham Woldeghebriel, January 9 – 23, 2016

Assignment Description: To improve the income and expenditure ratio in relation to feed inputs and sales, Abraham Woldeghebriel provided guidance on Piggery Feed Formulation for HE & SHE Farms at Barekese in the Ashanti Region. Abraham also assisted the farm in determining the quality of available commercial feed additives and their proper use to maximize performance. He taught the farm staff on how to formulate rations for desired outcome and to collect and establish a database of key economic indicators from which management decisions can be made.

Target host organization: HE & SHE Farms

Recommendations:
- Use the recommended effective method of analyzing and validating nutritional values of diets based on the needs of the different classes of pigs at the farm and formulate rations using simple hand-held calculator.
- Pigs should be re-grouped by age and reproductive status to prevent the spread of diseases from older pigs to younger ones.
- Track food usage for the pigs through record keeping to enhance profitability.

Book Keeping, Improved Customer Services and Inventory Management, Don Van Noy, September 26 – October 17, 2015

Assignment Description: B. Kaakyire Agrochemicals Limited (BKAL) supplies several farmers with inputs such as weedicides, pesticides, improved seeds, chemical fertilizers and other agricultural products. The company started operations in 2000 as a petty retailer, but with hard work and express delivery services, BKAL has now grown into an importer, distributor, and seller of agricultural inputs to farmers. In order to reach out to new markets, BKAL continues to expand and establish more stores closer to farming communities. To manage the expansion and properly track sales and performance of each sales outlet, F2F fielded Melvin Don Van Noy to review BKAL’s organizational structure, develop a draft organizational chart, and train some key staff in Microsoft Excel. He also developed a financial reporting template for management decision-making and provided BKAL with a sample policy and procedure document for petty cash.

Target host organization: B. Kaakyire Agrochemicals Limited (BKAL)

Recommendations:
- Develop and implement a pricing policy using the profitability percentages established in the financial reporting.
- Review the problem of inadequate stock at sales locations and develop possible solutions.
• Prepare monthly financial reports with amount and percentage comparisons to determine profitability rates and analyze the reasons for significant changes.

BSc. Furniture Technology and Management Curriculum development, Juan Arteaga, October 31 – November 22, 2015
Assignment Description: The Department of Wood Science and Technology of the Kwame Nkrumah University of Science and Technology (KNUST) specializes in training students in the science of wood and wood processing technologies. The department is developing a new four-year Bachelor of Science degree program in Furniture Technology and Management that is market competitive and attractive to students. Volunteer Juan Arteaga worked with the department to design a market oriented program and develop syllabi, focused on participation, for all the courses required for the four-year program. Mr. Arteaga helped to create 41 new syllabi focused on the management orientation of the curriculum (Applied Accounting, Applied Marketing, and Supply Chain Management).

Target host organization: Department of Wood Science and Technology - The Kwame Nkrumah University of Science and Technology (KNUST)
Recommendations:
• Incorporate all members’ suggestions to finalize the necessary framework needed in each course of the curriculum to make them market oriented.
• Establish a permanent evaluation of the new proposed curriculum to ensure the successes of planned courses, activities, and learning opportunities.
• Measure the effectiveness of the developed curriculum and make adjustments as needed.

Assignment Description: This assignment focused on improving operational procedures in lines of communication, reporting and defining structures of W93.5FM, a commercial radio station located in Wa in the Upper West Region. The station was set up with the aim of providing valuable information to key audiences, such as farmers and the business community, to help strengthen economic, civic, and cultural development of the community. Volunteer Jim Ellinger trained staff of the radio station on event management, planning, programming and program content, sales and marketing, branding and promotion, management and departmental communication, coordination and reporting. Jim then made some recommendations for improvement.

Target host organization: W93.5FM
Recommendations:
• Adopt the use of traffic logs and paper logs to help track activities.
• Improve inter-departmental communication.
• Merge some of the departments or restructure them to enhance effective delivery of services.
• Periodically organize similar capacity building for staff as it gives them exposure and helps build their skills.

Capacity Building in Agriculture Financing, Diane R. Suhler, July 30 – August 12, 2016
Assignment Description: One of the objectives of the Naara Rural Bank is to decrease the rate of loan default and increase the rate of loan recovery. Diane R. Suhler, an Associate Professor of Finance and Economics, came to work with the bank staff in agriculture financing. Diana assessed the loan application and approval processes of the bank and trained the staff on loan application and appraisal, strategies for decreasing loan default and increasing loan recovery, strengthening internal controls, and advised on how best to update the bank’s loan application package. Diane made some recommendations for improvement.

Target host organization: Naara Rural Bank
Recommendations:
• Update and revise loan application package.
• Cooperate and work with other organizations in advising farmers on crops, inputs, etc.
• Provide training on a regular basis to loan officers and strengthen internal controls.

Pesticides Safety Assessment for F2F, Jeanne Chabrier, February 20 – March 12, 2016
Assignment Description: Volunteer Jeanne Chabrier conducted a three-week assessment on pesticides usage and safety in Ghana. This assignment was to allow F2F Ghana to review the existing Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) so as to guide volunteers in assignment execution. This assignment was in collaboration with B. Kaakyire Agrochemical Limited, one of the major agrochemical dealers in Ghana. The volunteer visited the Environmental Protection Agency, Plant Protection and Regulatory Services Division (PPRSD), Food and Drugs Authority to conduct interviews to gather information to help review and update the PERSUAP. The volunteer also had the opportunity to interview input dealers and farmers on pesticide usage.

Target host organization: B-Kaakyire Agrochemical Limited
Recommendations:
• Engage the EPA and the PPRSD to survey and track sources of illegal/banned products and unlicensed agro input dealers.
• Engage the regulating bodies and help foster more of a relationship with the removal of obsolete pesticide stocks.
• Encourage licensed input dealers to discourage the use of illegal counterfeit products.

Bee Colonization and Queen Rearing, Dr. Lloyd Ziegler, July 28 – August 12, 2016
Assignment Description: The Adumkrom Beekeepers Association (ABA) started operation in 2014 with the main objective of improving the livelihood of the bee-keepers in Adumkrom and its surrounding communities. The group has 30 beehives in addition to the 58 beehives belonging to individual members. Members were having difficulties in attracting the bees and colonizing with their hives. Volunteer Lloyd Ziegler trained the group on the best location of hives to attract bees, how to transfer queen bees between hives, and best harvest techniques for honey. He also trained them on how to prepare by-products, such as candles from beeswax, medicine from propolis to treat bacterial infections, cough drops and throat irritation, as well as preparing balm lotion from beeswax.

Target host organization: Adumkrom Beekeepers Association
Recommendations:
- To keep the bees you have already, feed all the hives at least 3kg of honey, move hives to shady area, use plastic sheet under the cover to keep the hive dry and be sure to use correct top bars.
- To improve colonization, put out bait hives 2 weeks before honey flow and use the techniques taught by the volunteer to attract new swarms to these bait hives.
- Control ants and termites by placing the legs of the hive stands in containers of used motor oil. Keep the inside of the hive free of pests such as lizards, snakes, or debris of any kind. Catch and keep all swarms as instructed.

Liberia: XXX

Technical Capacity Support to Rural Community Finance Institutions (RCFIs), Momodu Kemokai, July 12 – October 2, 2015

Assignment Description: Momodu Kemokai of Woodbury, MN worked with the Central Bank of Liberia for 52 days, training 14 females and 12 males on risk management at 5 rural county finance institutions (RCFI). CBL’s objective is to provide financial access to rural districts in Liberia that have never had banking services. F2F has been working with CBL on this Micro-Finance Inclusion program since 2012. Momodu is the third F2F volunteers hosted by CBL.

Target host organization: Central Bank of Liberia

Recommendations:
- Efforts should be made to computerize all RCFIs.
- Create a position of a Universal RCFI Officer that will provide continuous support to the RCFIs. This person (or maybe a team comprising of Afriland and CBL) will have a permanent office in Monrovia, but will be on the road often visiting the RCFIs to provide operational direction and support.
- As an additional empowerment tool, CBL should channel some microfinance loans through the RCFIs.
- Develop a savings-led approach to financial inclusion rather than giving loans.
- Provide vehicles (1 for each RCFI) or motor cycle to alleviate the transportation difficulties.

Sweet Potato Vine Multiplication, Dilip Nandwani, December 12 – 23, 2015

Assignment Description: Dr. Nandwani taught 13 female and 12 male sweet potato farmers from the Farmers Organization for Food Security Inc. (FOFFSI) on sweet potato seed system models, healthy plant selection, crop calendars, vine multiplication nursery set up and management, and plant spacing. The volunteer also demonstrated a method for insect pest and disease control using neem leaf extract. Prior to the assignment, the sweet potato fields had several production issues in multiplication, planting and crop management.

Target host organization: Farmers Organization for Food Security Inc. (FOFFSI)

Recommendations:
- Select suitable multiplication site (near water source, well-drained soil, protected from livestock etc.). Collect healthy, disease free slips from shoot tip or apex with 3 nodes for planting as first choice due to fast growing and disease free material. Shoot tips in the plants are virus-free zones, therefore, fields established by shoot tip cuttings have less chance of disease infestation. Middle sections of vine cuttings can be used if no shoot tip material is available.
- Check for pest and diseases in the planting material (cuttings) if bringing from another farm for planting. Bringing infected material from a farm transmits diseases to new field.
Establish mother block (nursery) for vine multiplication. Roots can be saved and used as seeds to raise slips for next planting season. Slips would take 3-4 weeks to produce suitable size vines for planting. 10x20cm spacing in one sq m would need 50 cuttings of 3 nodes each for vine multiplication. Apply compost (25gms/m2) and or decomposed animal manure. Water every morning and keep weed-free beds.

Use disinfectants such as Clorox, sodium hypochlorite, spore kill or ash for surface sterilization of slips. These may be commercially available in the local market. Clorox can be used at the rate of 10% for 20-30 pints. Follow the directions on the label as each one is different and may have different levels of chlorine. A quick dip in hot water (50-55 °C) would also help kill spores and minimize disease infestation.

Use new healthy planting stocks from neighboring country (Nigeria!) through Ministry of Agriculture’s assistance.

Use raised beds (18cm high, 3’ spacing between beds, 20’ long) for planting slips. Sweet potato is a low maintenance crop and doesn’t need much water. Rain fed irrigation is suitable except during peak hot and dry period. Drip irrigation is recommended as it saves water, is economical and needs less labor.

Techniques in Intensive Poultry Farming, Jonathan Moyle, November 7 – 19, 2015

Assignment Description: Jonathan Moyle of the University of Maryland Extension in Salisbury taught farmers of Amira Village improved methods and practices in poultry husbandry including caring for chicks, poultry housing, genetic selection of breeding stock, poultry health, biosecurity and disease prevention, and preventing heat stress.

Target host organization: Amira Village

Recommendations:

- Start and practice biosecurity.
- Start with healthy chicks.
- Store feed properly to prevent moisture from contacting feed.
- Use bedding that is dry and free of mold. Make sure that feeders and waterers are at the proper height to prevent wastage.
- Learn to identify birds that are sick.
- Find a source of poultry feed or make your own with locally available feedstocks. Make a list of available feedstocks.
Setting up of an Aquaculture Demonstration Site, Dr. Hugh Thomforde, February 5 – 14, 2016

Assignment Description: Tubman University (TU) wanted to construct aquaculture ponds that could be used for commercial and teaching purposes, but needed a consultant to help the school evaluate the potential construction sites. Dr. Hugh Thomforde of the University of Arkansas (Division of Aquaculture) volunteered to evaluate the four potential sites that were identified by TU for the project. The volunteer trained 20 female and 30 male students the techniques to evaluate the construction sites. Only one site was found to have sufficient clay, following field testing of soil and a water quality evaluation.

Target host organization: Tubman University

Recommendations:

- Volunteer recommends TU proceeds with pond construction at the optimal site the volunteer identified.
- Total alkalinity: 0.0 mg/L measured as calcium carbonate, pH: 5.5 to 6.0, ammonia: 0.5 mg/L total ammonia nitrogen, iron: 6 mg/L (measured by a double aliquot, the test kit used measured only between 0 and 5 mg/L). Water quality is within acceptable limits providing the following conditions are met.
- Liming agents will be required in order to increase total alkalinity to a minimum of approximately 30 mg/L measured as calcium carbonate. Hydrated lime is available in Monrovia for US $12 per bag. Wood ash, rice husk ash, and minced banana (expensive) and recommended by the volunteer as commonly available alternatives.
- Simple sand filtration will be required to reduce iron content of water to be used for hatchery phases of production.

Community Goat Breeding Support, Daniel Miller, February 12 – 26, 2016

Assignment Description: Dr. Daniel Miller trained 19 females and 64 males at Lorplay Goat Farmers on a variety of goat breeding topics. The volunteer discussed topics ranging from identifying ideal breeding times, when a doe is in heat and a buck is in rut, to goat pregnancy issues and labor. He even trained the participants on proper care for a doe and her new kid.

Target host organization: Lorplay Goat Farmers

Recommendations:

- Ensure that newborn kids get colostrum immediately after birth and if available, dip the cords in tincture of iodine. Have the doe give birth in a clean area.
- Build corrals where the goats can return at night and provide them with water and mineral salt to entice them into the corral.
- Check the goats each morning and evening and before going to the bush for any problems or changes. This would include being in estrous, disease, infected feet, pending parturition, checking for missing goats and any other complication that requires intervention. Goats will become accustomed to human presence and are much easier to work with.
- Plant legume browse trees around the village and in the pen so that the goats have added benefits to return from the bush and to improve their nutritional status. Provide supplemental feed, especially toward the end of the dry season. This feed can be the by-products of their normal rice and palm oil processing. It can also be forage that was dried and stored earlier in the year when more forage was available.
- Eventually, when a much higher level of expertise is reached, semi-confinement of the goats in sheds with raised, slatted floors and fenced in exercise areas should be implemented, as is
presently practiced in much of eastern Africa. This will require many years of development and may not occur in our lifetime.

**Food Service Management, Dr. Ralph Govin, March 13 – 30, 2016**

*Assignment Description:* Dr. Ralph Govin trained 4 female and 3 male food processors on general food service management through the Liberia Business Incubator (LBI). Topics he covered included improved methods of food handling, processing and packaging, food hygiene and good manufacturing practices (GMP). The purpose of these trainings were to build the capacity of the participants in order to ensure that the cassava products being processed will be safe for extended shelf life.

*Target host organization:* Liberia Business Incubator (LBI)

**Agriculture for Nutrition Improvement, Natalie Wynne, February 19 – March 15, 2016**

*Assignment Description:* Previously, Liberia Mission Inc. grew nearly all of the fruits, crops like cassava, and vegetables like bitter-balls and peppers, it needed feed its boarding students on campus. However, produce cultivation slowed and yields declined considerably, causing great difficulties in feeding the students. Natalie Wynn was volunteered to work with 15 females and 25 males to scope out garden sites and plan their layouts with the students. Natalie trained the students on soil health, composting, companion planting, and a dry-season irrigation scheme. Students gained an understanding of how improving the soil can lead the increased crop yields.

*Target host organization:* Liberia Mission Inc.

**Using GIS Technology to Map Cocoa Farms, Dr. Sam Nwaneri, February 27 – March 18, 2016**

*Assignment Description:* Dr. Sam Nwaneri, a professor at Alcorn State University, taught 11 female and 14 male cocoa farmers at CWAP and CATALYST about utilizing GIS technology to enable them to improve cocoa farm productivity. He trained them on best practices for map making using GIS software and how to collect the necessary data for map making. Dr. Nwaneri emphasized that GIS technology can also help with monitoring and reducing negative impacts on the environment.

*Target host organizations:* CWAP and CATALYST

*Recommendations:*
- CWAP, in future training, should use polygons rather than waypoints, in the determination of farm size. Polygons support technical and legal descriptions of land based on the fact that it is a boundary phenomenon. Waypoints lack operational and statistical analyses of originality and promote feuds in boundary analysis.
- CWAP and CATALYST should develop a database that describes land ownership and resources to match the technologies of this cocoa farming proposal.

**Gender Integration Technical Support to Liberia National Federation of Cooperative Societies (LNFC), Priya Dhanani, June 12 – July 10, 2016**

*Assignment Description:* Priya Dhanani, a gender specialist, conducted a training course on gender integration for 55 people, 28 females and 27 males, belonging to 36 farmers’ cooperatives in Nimba County. Priya taught participants that many of the challenges they experience are not due to factors such as the lack of policies, rather cultural barriers, that work to mold the notion of gender equality and women’s and youth’s roles in society. She explained how gender inequality within land ownership, access to education, training in agriculture, a voice in decision-making and leadership roles hinder the
ability of women and youth to participate in agricultural work and to attain equal opportunities in Liberia.

**Target host organization:** Liberia National Federation of Cooperative Societies (LNFC)

**Recommendations:**
- Engage communities in discussions of gender inequality and its consequences for women, men, boys, and girls.
- Encourage women’s meaningful participation and leadership in all development projects and within the home.
- Preventing and responding to gender-based violence and intimate partner violence.
- Ensure that girls and boys have equal access to school, have support systems that will facilitate their retention and completion, as well as quality learning outcomes in agriculture.
- Incorporate safe-sex negotiation and communication skills training emphasizing equitable relationships.
- Introduce behavior change campaigns that discourage men’s sexual risk-taking and violent and controlling behaviors or those that demonstrate the benefits of equitable partnerships between women and men.
- Support girls’ and women’s empowerment, particularly economic empowerment, so they can better advocate for their rights and their children’s rights.
- Reduce gender-based stigmas and violence against groups marginalized by gender behaviors and increase access of these group to resources and services.
- Engage men in supporting the needs of their female partners and in challenging harmful gender norms.

Rotational and Mixed Cropping, Dr. Muamba Kabeya, September 13 – 25, 2015

**Assignment Description:** Dr. Muamba Kabeya of the University of Kentucky’s Department of Plant and Soil Sciences trained 21 males from SHALOM Farm on agricultural marketing, labor planning, production costs, pest susceptibility, companion planting, crop rotation, water availability and soil fertility. He also worked with local farmers to develop a four-year crop rotation plan based on the review of crop botanical families or edible plant part to ensure planting does not repeat the crops from the same family season after season.

**Target host organization:** SHALOM Farm

**Recommendations:**
- Farmers should make a list of all the vegetable types and quantities that they want to cultivate over a season, taking into consideration the market demand for farm produce.
- Group plants together by botanical families to find out which are related. It is advisable to start growing legumes before cereals.
- Draw a map of the growing area. Divide it into equal sized sections according to the number of years the rotation will last. It is recommended that the farmers try a 4-year cycle. Distribute the crops within these sections. The first rule is to try and keeps crop families together. If a section has to hold more than one crop family, try and keep those crops with similar growing requirements together. Using a bed system can make this part of crop rotation easier.
- Farmers may find that it is difficult to divide an area up into 3 or 4 equal sized sections as the quantity of one type of vegetable might be too large. In this case, reduce the amount of plants grown rather than abandoning the rotation.
- Be flexible. It is important to keep the major crop families together. Short term crops, like lettuce, salads, and early carrots, can be fitted into any plot.
- Keep records of what actually happened, not just what was planned. Use this information when planning for the next year.

**Drip Irrigation Design and Installation, Phuc H. Vu, February 29 – March 14, 2016**

*Assignment Description:* Phuc Vu taught 2 females and 15 males from SHALOM farmers to design, build and install a simple, cost effective, easily-replicable drip irrigation system that the farmers can use in the dry season to grow high value crops. The volunteer provided a limited number of kits to participants. The drip irrigation system designed by the volunteer is now operational and in use on SHALOM Farm.

**Target host organization:** SHALOM Farm

**Recommendations:** (Additional Vegetable Production Supplemental Training and Workshops):
- Plant Nutrition - Training in plant nutrient management will greatly improve production.
- Plant Pest and Diseases - Training should address specific problems local to the Kakata region.
- Post-Harvest Handling, Cooling, and Storage – Post-harvest training is the next stage along the vegetable value chain. Consider a vegetable canning enterprise.
- Good Agricultural Practices (GAP) – GAP training will prepare small-holders for future entry and competition in the commercial markets.

**Semi-Intensive Cattle Farming, Dale ZoBell, May 15 – 27, 2016**

*Assignment Description:* The farmers of Makona Training and Investment Company did not have the knowledge, expertise, understanding or financial capital to increase their livestock numbers prior to this assignment. Dr. Dale R. ZoBell taught 55 female and 56 male livestock farmers on the use of residue feeds like elephant grass, rice straw, palm oil and palm oil kernel meal in addition to and their dietary importance for cattle. He also explained procedures for grazing and harvesting the abundant grasses. The volunteer also taught the participants about cultivating pastureland, pasture conservation, the use of multi-purpose trees, fibrous crop residues and strategic supplementation.

**Target host organization:** Makona Trading and Investment Company

**Recommendations:**
- Harvest and graze elephant grass to the extent possible with the goal to store up grasses through the wet season to be used in the dry.
- Utilize residue feeds such as rice straw and rice bran in livestock rations.
- Utilize palm oil pulp, palm oil and palm kernel cake where applicable.
- Begin to organize and carry out an action plan to fatten cattle on a small scale with a few producers.
- Develop a grazing plan and a cooperative grazing agreement to implement with Makona Trading Co members.
- Explore micro-grant opportunities and develop cost of production and cash flow projections to increase livestock numbers in the region based on newly learned production techniques and practices.

**Business Plan Development for the Daughters of Nimba, Gina Sheets, March 19 – April 4, 2016**

*Assignment Description:* The Daughters of Nimba (DN) requested volunteer assistance to help the organization prioritize activities that would bring the group the most benefit and create the most impact. Gina Sheets of the Indiana State Department of Agriculture trained 3 females and 2 males from...
the organization. She advised them to move from farming cassava to farming pineapples due to their greater income potential and worked with the participants to write a detailed development plan for pineapple farming. In addition, she discussed with the group way to add value as their production increases.

Target host organization: Daughters of Nimba (DN)

**Improved Food Processing and Packaging for Women NGO, Ahmed Mohamed, June 30 – July 10, 2016**  
*Assignment Description:* Dr. Ahmed Mohammed came to Liberia in June 2016 to conduct a training workshop for the Daughters of Nimba (DN) on improved food processing and packaging. He demonstrated the use of various types of solar dryers to preserve food for the purpose of reducing loss and maximizing financial returns. An example of the type of technology he discussed was the hand held vacuum sealer, called PUMP-N-SEAL, that could be used to seal various food packages such as plastic bags and jars. Prior to the assignment, much of DN’s harvest was wasted or sold at a very low price because of market saturation at harvest time. They had lacked the proper facilities and skills needed to preserve and store the harvest to sell at the market at a higher price in the off-season.

Target host organization: Daughters of Nimba (DN)

Recommendations:
- Study the market needs and plan what to plant and when, accordingly. Understanding the market dynamics is useful to determine what product has the highest market value and at which time of the year. It could also help to identify markets where prices are higher than the local area and more profitable after taking into account transportation and labor costs.
- Work together with other local farmers, to the extent that is economically viable, to acquire materials like manure to fulfill their need and to support the local businesses.
- Adopt best hygiene and sanitary practices to achieve the minimal level of food safety and quality requirements. The direct and indirect values of implementing effective food safety and quality procedures as a responsible business practice cannot be emphasized enough. Not the least because it eliminates/reduces pathogens in the product, but also because it increases trust in the brand and generates a good reputation over time.
- Use sustainable and affordable technologies to prevent/reduce post-harvest loss and optimize marketing strategies. Examples of this include drying and cooling devices that require no electricity, to prevent food spoilage, some of which are already in use by local farmers.
- Work on acquiring facilities that could be used to dry, preserve and store food to reduce/eliminate the need to sell harvest when the market conditions are not favorable.

**Business Plan Development, David Wagner, August 14 – 26, 2016**  
*Assignment Description:* David Wagner volunteered to train 101 farmers, including 16 females, belonging to two local business organizations, CWAP and CATALYST, on business plan development. He trained them on creating a strategic plan for their organizations and marketing strategies to grow the businesses. Before returning home, David worked with CWAP to write a comprehensive business plan.

**Target host organizations:** CWAP and CATALYST

Recommendations:
- Implement 5-year strategic plan.
- Establish a Marketing Team for both CWAP & CATALYST.
- Expand seed garden & nursery enterprises for both CWAP & CATALYST.
Improved Honey Production and Management, Megan Wannarka, August 21 – September 4, 2016

Assignment Summary: Liberia Pure Honey (LPH) needed an expert help to create a standardized knowledge base for their trainers so that when technical information transfer happens, this information is transformed into a highly standardized knowledge that can be spread across the country. Megan Wannarka volunteered to train 18 female and 36 male bee farmers on improved honey production and management. She discussed with the participants how to identify plants important to honey bees; bee pests and diseases; queen rearing theory; propagating and increasing habitat of nectar producing plants; harvesting capped honey and proper storage; improved colonization techniques; and breeding stock selection. She also helped the farmers in planting nectar producing plants. Megan compiled all of this information into reference materials for the farmers’ future use.

Target host organization: Liberia Pure Honey (LPH)
Recommendations:
- To be able to deal with the multiple stings inflicted during the harvest, keep under the beekeeping suits.
- Staying hydrated and cool while doing this stressful, but important work is critical. Tools able to mark notes directly on hives and south-facing hives are helpful in tracking notes and increasing colonization of hives.
- Use suit, veil and hat along with either a waterproof camera or a smart phone to document situations and to use as a teaching implement for each extension agent and manager.

Livestock Management Practices, Dr. Daniel Miller, August 28 – September 16, 2016

Assignment Summary: New Generation of Africa Agriculture Organization (NEGAAO) is a youth organization comprised of mainly students studying agriculture. However, the group has had little actual experience with raising livestock. Dr. Daniel Miller taught 13 females and 45 males on livestock management practices. He used a series of PowerPoint presentations to cover topics such as nutrition and feeding management, breeding, neonatal care, disease prevention, housing, record keeping and sanitation. He also conducted several practical training sessions that included a post-mortem exam of a goat, hoof care, castrations, sample taking and observation of samples under a microscope.

Target host organization: New Generation of African Agriculture Organization (NEGAAO)
Recommendations:
- Add supplemental feed to the diet of pigs to improve mineral, vitamin and amino acid intake.
- Change methods of feeding so that animals do not contaminate their feed and water.
- Ensure that neonates receive adequate colostrum (antibodies) and that piglets are given a warm place that is protected from trauma by the sow.
- Group the animals according to their age and size category and disinfect the pen between groups. Use an all in/all out strategy rather than having a pen constantly occupied.
- Use legume forage for goats as a source of protein. Also include salt and minerals.
- Do periodic autopsies on animals that die and on animals that are butchered.
Organizational Development, Aaron Moritz, November 24 – December 10, 2015

**Assignment Description:** Aaron Moritz came to Senegal to provide assistance to the farmers of Federation des Groupements Intercommunautaires de Nioro, a group of 40 women, on organizational development. Aaron reviewed the procedures of the group and gave recommendations on rule implementation. Finally, he asked the participants to define priorities on the activities they would like to engage in. In order to monitor the group after the assignment, the volunteer contacted the Peace Corps Volunteer in the town and asked him to help them implement his recommendations.

**Target host organization:** Federation des Groupements intercommunautaires de Nioro

**Recommendations:**
- Prioritize activities to implement.
- Define a plan of action for the year.

Marketing techniques, Jennifer S. Conroy, January 16 – 30, 2016

**Assignment Description:** Jennifer Conroy’s assignment was focused on providing assistance to the Association for the Development of Ganguel Soule to improve their marketing techniques. The association has more than 600 members, divided into 5 women groups. They are mainly producers and grow vegetables on a 12 ha plot of land. Jennifer first met the representatives of the association and the women groups to set a schedule for the training and asked different questions in order to have a better understanding of their needs. They decided to train selected representatives of each group as all the members could not be part of the training. Jenny prepared and delivered training on marketing principles, understanding customers, marketing techniques, business and marketing development, and marketing plans. She insisted on the fact that they should take into account all their expenses and share transportation.

**Target host organization:** Association for the development of Ganguel Soule

**Recommendations:**
- Promote the product first before discussing the price.
- Gain better understanding of customers’ wants and needs.
- Set up a marketing committee and sell together.

Compost and Conservation Agriculture, Charlene Nash, December 5 – 19, 2015

**Assignment Description:** Charlene Nash came to Senegal to provide technical assistance to the members of the Association for the development of Ganguel Soule, which is composed of 600 members separated into 5 women groups. Upon arrival, Charlene visited the garden to have a better understanding of their soil and the vegetables the group was growing. She realized that they had not planted yet and had burnt part of the grass in the garden. She advised them to stop burning the grass which is a detriment to conservation agriculture and building soil. Charlene provided a theoretical training based on the importance of covering and feeding the soil and advised the group to plant trees in the garden to better hold rainfall and fertilize the soil. She explained the process to build a compost pile and the materials to use. From there, she led a practical application training and the women succeeded in building 3 composting piles. Finally, she made several recommendations to enable the women to enrich their soil, increase their production, and eat and sell organic products.

**Target host organization:** Association for the Development of Ganguel Soule

**Recommendations:**
Stop burning the grasses in the garden which inhibits conservation agriculture.
Fertilize the soil with organic matters.
Keep checking the compost piles’ temperatures, turn the piles if hot, and continue making compost to build and enrich the soil.

Organizational Development, Melvin Farmer, April 9 – 23, 2016
Assignment Description: Melvin Farmer came to Senegal to provide technical assistance on organizational development for Dental Hayre women group. This group is made up of 99 women who are working together to improve their living conditions. The women of the village, including the Dental Hayre women, share a 5 ha plot of land on which they grow vegetables. As a secondary activity, Dental Hayre women own 50 chairs they are renting. They are looking into starting a new business to increase their savings. Mel, first, visited with the board members to have a better understanding of current group activities. He then prepared and delivered training on how the group can increase organizational efficiency and how to choose, start, and run a business. He advised the group to conduct a small study and to document technological capacity, initial start-up cost, operating cost, risk factors, and profitability. He made several recommendations to enable the women start and build a fruitful business and advance as a group.

Target host organization: Dental Hayre Hamady Ounare
Recommendations:
- Have regular meetings and inform members on current group activities.
- Choose low risk factor businesses.
- Meet with the different bank representatives before deciding to open a bank account.

Organizational Capacity Building, Lynda Brushett, April 16 – May 1, 2016
Assignment Description: Lynda Brushett came to Senegal to provide technical assistance on organizational capacity building for the Fedde Bamtare Bapelel women group. The group is made up of 237 women who farm together on 17.5 ha of land, growing vegetables and rice under a flood irrigation system. Lynda decided to visit the garden in order to understand how the space is used, what the women are growing, and how they are they dealing with the water leaking from their irrigation system. She met with the board members to clarify her training plans and then delivered training on listing and prioritizing group needs, establish and agreeing upon by-laws, and the roles each board member and member should carry out to advance the group. Lynda reinforced the importance of running meetings and delivered training on how to efficiently run meetings.

Target host organization: Fedde Bamtare Bapelel
Recommendations:
- Translate the by-laws into the local language.
- Start running the meetings using the example provided and enable everybody to be able to participate.
- Ensure follow-up on the group by local resource persons.

Assignment Description: Pamela Robinson came to Senegal to provide technical assistance on financial management to GPF Dine Islam, a women group working together to improve their living conditions in their local area. The group is mainly involved with farming, but the group also offers rotating loans to members to run small businesses in other activities. Pamela met with the representatives of the group
upon arrival to have a better understanding of what the group is doing and why they would prefer for the land to open to the group rather than dividing the land up into small plots for each of the members. She prepared and delivered training on recordkeeping, profit and loss, budget variance analysis, and cash flow. She made several recommendations to members on business management, profitability, and financial management.

Target host organization: GPF Dine Islam
Recommendations:
- Start using the tools provided during the training.
- Discuss how to increase dues payment to increase funds from the group.
- Record all transactions to track profitability.

Cultural Planning and Crop Association, Sequoia Ireland, May 14 – 29, 2016
Assignment Description: Sequoia Ireland’s assignment in Senegal was focused on providing cultural planning and crop association technical assistance to Bokk Xol farmers group, a group of women vegetable growers founded in 2008. Sequoia taught them how to determine the PH of the soil with vinegar and baking soda, explained to the group the need to preserve biodiversity, and demonstrated how to fertilize poor soil by adding compost. Furthermore, Sequoia taught the farmers the different crop families and which vegetables can be grown together in a plot. She explained how using proper crop rotation can help control pest and diseases.

Target host organization: Bokk Xol
Recommendations:
- Add compost to the plot to enhance soil fertility.
- Use the information given about crop families to optimally group vegetables together when planting.
- Practice crop rotation.

Business Skills in Farming, Scott Stovall, August 7 – 20, 2016
Assignment Description: Scott Stovall came to Senegal to provide assistance to the Fedde Barmathial Rénovation women group to improve their business skills. The group is made up of 160 women who have been working together for more than 20 years and primarily grow vegetables including eggplant, cabbage, hot and sweet pepper, okra, African eggplant, sorrel, etc. The women of this organization have spent a lot of money on seeds and fertilizers, however have not seen an increase in yield to reflect this investment. Scott prepared and delivered training on good business practices focusing on the cost of production. During the training, he emphasized the importance of recording all expenses and cost reduction to improve profitability and advised the women to increase group income by increasing fee payments from 50 to 100 FCFA.

Target host organization: Fedde Barmathial Rénovation
Recommendations:
- Record all the expenses to determine the cost of production to be able to negotiate the price at the market.
- Train the other members of the group on business skills learned and start practicing them.
- Diversify crops in order to reduce risks and increase profits.

Marketing techniques, Christine Blackledge, March 13 – 27, 2016
Assignment Description: Christine Blackledge came to Senegal to help the GPF Ganki group to improve
their marketing techniques. The GPF Ganki women decided to start a new soap business after they received training on soap making. Christine prepared and delivered training on how to develop their market, starting with their own group and village before opening it throughout the area. She emphasized quality and good packaging. She worked with the women to come up with a printed logo and label in order to develop a brand image in the markets.

**Target host organization: Groupement de Promotion Féminine (GPF) Ganki**

**Recommendations:**
- Ensure that the group is making good quality soap.
- Listen to all the members of the group and take their ideas into account.
- Ensure to have the required information on the label.

Vegetables Processing and Storage Techniques, Pamela Karg, March 5 – 21, 2016

*Assignment Description:* Pamela Karg came to Senegal to provide technical assistance to the Daminare women on fruit and vegetable processing and storage techniques. The Daminare women realized that they were losing significant potential income from post-harvest losses due to a lack of processing and/or storing process. Pamela met with the representatives of the women group to review the schedule and inform them of the equipment she would need for the training. Pamela brought samples of processed fruits and vegetables to let the women see and try them in order to have a better idea of the final products they could produce. She encouraged the women to dry vegetables using the sun, which is prevalent ten out of twelve months. Pam prepared and delivered theoretical and practical trainings on fruits and vegetables drying and pickling techniques, producing tomato paste from dried tomatoes, and jam and vegetable chips making techniques. She also made several recommendations to enable the women start and keep processing their vegetables and start a small business.

**Target host organization:** Daminaare Group 1 Diamel

**Recommendations:**
- Start drying vegetables for provision during the off season and making jam for families and sale.
- Ensure proper sanitation.
- To make chips, the oil must be hot enough.

**Senegal: Environmental Conservation**

Composting and Conservation Agriculture, Makhtar Diop, November 7 – 21, 2015

*Assignment Description:* Makhtar Diop came to Senegal to provide technical assistance on composting and conservation agriculture to the Ourosidi Citizens Working Group (CWG), which is working with 33 women groups. They chose 4 groups among the 33 that will train the others after the assignment. Makhtar visited some gardens to have a better idea about what they are growing and how they are using the space they have available. He prepared and delivered training on composting and conservation agriculture techniques to the four women groups to help them rebuild their soil and reduce their fertilizer expenses. Makhtar made several recommendations and encouraged the women to keep on making compost in order to have a better soil and to improve their production.

**Target host organization:** Ourosidi Citizens Working Group (CWG)

**Recommendations:**
- Do not remove the weeds when plowing the field; the weeds nourish the soil and enable the
water to get in the soil.

- Plant flowers in the field to attract beneficial insects.
- Plant trees or plants like moringa, groundnut and bean to keep the field wet and enrich the soil.

**Soil Fertility and Conservation Agriculture Techniques, Eva Christensen, May 2 – 17, 2016**

*Assignment Description:* Eva came to Senegal to provide technical assistance on soil fertility to the GPF Ganki, Sinthiou Garba, a women’s group focused on horticulture. They have 4 hectares of land that is not being used to its full potential due to its distance from a water source and lack of adequate fencing indicating its borders. Given the number of women in the group, the current half hectare of land being farmed is insufficient and the soil is not rich enough to enable them to have profitable yields. Eva took a soil sample and conducted an analysis to determine what nutrients the soil lacked. She then prepared and delivered training on building and improving the soil by covering it and adding organic matter; the different nutrients needed at the first three stages of plant life; and the importance of composting to support nutrient rich soil. She led a practical training on compost making and helped the women to start a pile.

**Target host organization:** GPF Ganki, Sinthiou Garba

**Recommendations:**

- Always add organic matters into the soil and cover it.
- Choose vegetables that require less water and can bear the heat.
- Be mindful of the different stages of plant growth in order to have a good yield.

**Natural Resources Management and Climate Change, Makhtar Diop, April 30 – May 15, 2016**

*Assignment Description:* Makhtar Diop came to Senegal to provide technical assistance on natural resources management and climate change to Ndiobene Gallo farmers. Following the discussion, Makhtar made a presentation about why the changes noticed by the farmers are occurring and what to do to help reverse the current trends. At the end of each session, participants recognized the need to conserve and to better manage their natural resources, land, and ecosystem services. In the village of Thiamene, the village Chief indicated that he will plant cashew trees around the whole village. At the end of the training, the group received tree seedlings from the governmental structure in charge of environmental monitoring and Makhtar gave each participant a tree to plant and manage.

**Target host organization:** Ndiobene Gallo

**Recommendations:**

- Encourage farmers to stop cutting down trees.
- Work with the governmental structures to reforest the land.
- Organize exchange visits to share best practices.

**Conservation Farming, Chuck Kaucic, March 5 – 21, 2016**

*Assignment Description:* Chuck Kaucic came to Senegal to provide technical assistance on conservation farming to Farms Union. Chuck met with the leaders of 10 farmers’ groups to discuss the challenges of new agricultural techniques and why the groups should adopt the conservation techniques. Then, with the leaders, he planned successive visits to 5 villages where he trained farmers on the proper use of fertilizer and organic matter, the water cycle and how to retain water in the fields, and proper spacing between rows.

**Target host organization:** Farms Union

**Recommendations:**

- The mitigation of soil & sediment erosion is vital. Establish a demonstration project to show the
value of basic techniques.

- Practice mulching to keep the water in the field.
- Seek to expand planting varieties in addition to millet and peanuts.

Soil Fertility Through Composting, Charlene Nash, July 24 – August 7, 2016

Assignment Description: Charlene Nash came to Senegal to provide technical assistance on soil fertility through composting to the Fedde Ballal Allah women’s group. They are working together to grow rice and vegetables on a 4 ha plot of land. Charlene visited the garden and then delivered theoretical and practical training on the importance of feeding and covering the soil all the time. She explained how to make and use compost and then assisted the women in making a compost pile themselves. Charlene made several recommendations to help the women improve their soil while reducing their costs.

Target host organization: Fedde Ballal Allah

Recommendations:
- The number one priority is to start feeding and covering the soil.
- Each subgroup should make at least one compost pile each month.
- Plant trees and flowers to bring beneficial insects and provide shade.

Seed production/Saving, Erin Schneider, February 13 – 29, 2016

Assignment Description: Erin Schneider came to Senegal to provide technical assistance on seed production and saving to Oyawel Group. During the two-week assignment, Erin Schneider shared techniques to develop a system that will help save seeds at the farm level. In between field visits, the volunteer conducted market research at the Sokone and Kaolack markets, interviewing vendors who sell vegetables and vegetable seeds to gain a sense of seed origin, characteristics, buying habits and preferences of customers and to gain a general sense of seed system infrastructure for vegetables. She then trained the group on germination testing; techniques for processing and storing tomatoes, peppers, onions, and carrots; how to establish a seed garden for the purpose of evaluating varieties for seed saving; and long term seed storage.

Target host organization: Oyawel Group

Recommendations:
- Follow up with seed saving techniques for cabbage, turnips, and squash/cucurbits.
- Support a project on seed processing/seed storage including building equipment, sourcing/creating seed saving supplies, training the trainers on field testing and quality control/testing seeds.
- Build off and refine existing production successes with composting and farm management including plant spacing for seed production, timing of composting, and timing of organic pest management strategies.

Soil Fertility Improvement Through Composting, Sara Tiffany, August 28 – September 10, 2016

Assignment Description: Sara Tiffany came to Senegal to provide technical assistance on soil fertility improvement through composting to GPF Diné Islam women. GPF Diné Islam is a horticulture focused group with more than 100 members, both women and men. They have a 1 ha plot of land and primarily grow and produce vegetables including cabbage, hot and sweet pepper, okra, and African eggplant. Sara first visited the garden to understand the type of soil, how the group was using their space and what they were currently growing. She prepared and delivered training on mulching, which would enable women to save water and energy; crop rotation to keep nutrients in balance and help control diseases; and how to make, manage, and use compost.

Target host organization: GPF Diné Islam
Recommendations:
- Keep making compost and use it appropriately.
- Follow up on the implementation of what the women have learnt.

Senegal: Millet

Packing and HAACP, Johnson Ndi, December 7 – 21, 2015
Assignment Description: Johnson Ndi volunteered to provide technical assistance on packing and hazard analysis and critical control points (HAACP) to Association des Femmes de Développement de Ndoucoumane (AFDN). Johnson examined the processing unit to assess if the required quality in the HAACP procedures were met. In addition, he and the president of the group went to different local government representatives (Chambre de Commerce, Chambre des Métiers) to discuss ways they could help millet processor groups participate in agricultural fairs organized within the country. Finally, he visited some supermarkets and discussed a potential contract between them and the millet processors group.

Target host organization: Association des Femmes de Développement de Ndoucoumane (AFDN)
Recommendations:
- Maintain a stronger relationship with the regional government offices as they can assist these women’s groups in improving their productivities.
- Explore local market opportunities before considering exportation.
- Have more training on quality standards, harvesting, and storage and packaging.

Assignment Description: Mathias Medina came to Senegal to provide technical assistance on organizational development to Réseau des Groupements de Femmes. The first day, Mathias met with the Association pour la Promotion de la Femme Sénégalaise (APROFES) board to diagnose and evaluate the level of organization of the host group. Mathias then trained the group on the roles and responsibilities of board members and addressed the importance of organizing General Assemblies on a regular basis. During the second part of the training, he helped the group decide what activities the project should pursue and fund, explaining the process of decision making and the many implementation steps of a given project.

Target host organization: Réseau des Groupements de Femmes
Recommendations:
- Design a strategy as a group and define short term objectives during the next General Assembly (GA).
- Define the statutes (functions, roles and responsibilities of the president, treasurer, and secretary) during the next GA.
- Set up a communal project and follow the lessons learned to implement it.
- Create an insurance system to protect individual projects from damages.

Assignment Description: Ryan Nickerson came to Senegal to provide technical assistance on good millet growing practices to G.I.E Senale Keur Abdou. Ryan identified with the group the soil texture and the chemical composition of the fertilizer (NPK) they had been using. Based on his analysis, he explained to the participants the importance of each nutrient contained in the fertilizer for the plant. Moreover, he explained to them proper plant spacing, focusing on the necessary space needed between millet rows and pockets. Ryan recommended to start practicing conservation farming techniques in order to use a
smaller amount of fertilizer and use the organic matter more efficiently.

Target host organization: G.I.E Senale Keur Abdou
Recommendations:
- Use appropriate amount of nitrogen fertilizer based on soil condition and expected grain yield.
- Split nitrogen into 2 applications rather than 1 application if possible.
- Follow the recommendation on row and pocket spacing.
- Practice techniques of conservation farming and be able to recognize areas of poor soil and how to correct them.

Business Plan, Johnson Ndi, April 1 – 17, 2016
_Assignment Description:_ Johnson Ndi came to Senegal to provide training on how to elaborate a business plan with the women of Millet Processing of Gandiaye. He taught the group the different steps of writing a business plan writing and then provided them with marketing recommendations for their products. Finally, Johnson asked the group to work closely with the governmental structures and take advantage of invitations offered to attend agricultural fairs organized in the country.

Target host organization: Millet Processing of Gandiaye
Recommendations:
- Maintain a stronger relationship with the US Peace Corps volunteers in their areas.
- Follow the different steps taught during the training and put together a business plan for the organization.
- Learn from each other by delegation of responsibility to support each other and sharing of information among members and other stakeholders.
- Attend national and international fairs to promote millet products.

Marketing Techniques, Morgan Jefferson, April 17 – May 1, 2016
_Assignment Description:_ Morgan Jefferson came to Senegal to provide training on marketing techniques to the millet processors of Baracuda. The Baracuda staff requested advice in market expansion and plan development in addition to negotiation techniques and skills. This was a new objective that Morgan chose to include in her lesson plans because it would enable the organization to expand their business-to-business (B2B) network in order to further lower their total costs of doing business. Over the course of 8 days, Morgan taught various marketing skills including, “The 5 P’s of Marketing”, negotiation skills, packaging, and others.

Target host organization: Baracuda
Recommendations:
- The organization should negotiate and purchase their raw material millet product directly from local farmers instead of retail stores.
- The organization should include preparation instructions, ingredients, certification, nutritional facts, and a recipe on each product’s packaging, preferably on the rear of the package.
- The organization should coordinate marketing campaigns within each targeted market.
- The organization should work with current vendor partners and stores, where possible, to place their products for sale adjacent to ingredients suggested for preparation.
- The organization develop partnerships with vendors that manufacture products that are complementary to those sold by Baracuda.
Assignment Description: LeMieux Karsa came to Senegal to provide technical assistance on organizational capacity building to the Citizens Working Group (CWG) Ndendory women’s group. CWG works closely with their local government to ensure that the local government has a complete and accurate understanding of the problems the community faces. LeMieux agreed to train two groups over four days each based on time and space constraints. LeMieux prepared and delivered training on organizational management, emphasizing the roles and responsibilities of the board members and general members. He explained, with examples, how delegation of responsibilities and empowerment of all members can enable the group to move forward. He trained them on financial management, group development, and direct and group communication.

Target host organization: Groupe de Travail Citoyen Ndendory

Recommendations:
- Talk to each other and start building a strong communication system.
- Always do your best to have income greater than expenses in order for the group to make money and to start saving.

Organizational Development, Edgar Hicks, July 23 – August 6, 2016

Assignment Description: Edgar Hicks came to Senegal to provide assistance to Dekkal Sunu Souf Cooperative on organizational development. Upon arrival, Edgar analyzed organizational problems within the cooperative and described to the participants what an organized co-op should look like. He explained the rules and responsibilities of each member, in addition to those of the president, vice president, secretary, and treasurer.

Target host organization: Dekkal Sunu Souf

Recommendations:
- Organize and hold a new board election.
- Promote democracy within the group regardless of age and/or status in the community.
- Open a bank account for the organization and keep records of their transactions.

Financial Management Technique, Randy Schoenthaler, August 21 – September 4, 2016

Assignment Description: Randy Schoenthaler came to Senegal to provide technical assistance on financial management technique to millet processors in Toubacouta and Koungheul. During the first week Randy visited some processing units to see how the members manage their finances and have a good understanding of their book keeping practices. The second week, Randy taught the women how to use balance sheets and monitor cash flow among other financial skills. He engaged the participants in many exercises to make them feel more comfortable with the new tools.

Target host organization: UTC Niombato group

Recommendations:
- Keep track of financial records.
- Send the volunteer their records after 3 months to verify if the training is properly implemented.

Conservation Farming Technique, Ryan Hottle, August 6 – 21, 2016

Assignment Description: Ryan Hottle came to Senegal to provide technical assistance on conservation farming technique to Bolel farmers group. First, Ryan taught farmers how to measure the soil ph with appropriate materials and what the proper ph level for good soil is. After, Ryan taught the farmers techniques to adjust the ph level in the soil in case it was too alkaline or acidic. Ryan also taught them how to recognize nitrogen-providing plants and the different nutrients needed by the plants to grow properly. After the theoretical session, Ryan and the farmers practiced the training material in the field.
Target host organization: Bolel group
Recommendations:
- Encourage farmers to practice conservation farming in a small section of their field to compare yield with conventional agriculture.
- Use mulching to control weeds.

Conservation Farming Composting, Makhtar Diop, August 27 – September 10, 2016
Assignment Description: Makhtar Diop volunteered to teach farmers from Ndiob village composting techniques and best practices for fertilizer use. Ndiop has a group of 30 millet growers who wish to test conservation farming techniques on 30 ha of their land. Millet is mainly grown for subsistence, and they want to be able to get enough production for the whole year. Makhtar visited 20 sites to see what techniques the farmers are currently using to grow millet and evaluated their yields. He taught farmers for three days in the field, the different types of conservation farming technology. After that, he asked farmers to bring organic material and together they made a compost pile. Finally, he taught them also how to save fertilizer by using the compost.

Target host organization: Ndiob village millet producers
Recommendations:
- Practice conservation farming techniques.
- Make compost pile to apply during seeding time.

Senegal: Flexible

Soap, Body Lotion and Shampoo Making Techniques, Christine Blackledge, February 22 – March 5, 2016
Assignment Description: Christine Blackledge came to Senegal to provide technical assistance to the women of Federation Jokkere Endam on soap, body lotion and shampoo making techniques. Christine met with representatives of the 21 women groups to review the schedule and inform them of the equipment needed for the training. She prepared and delivered theoretical and practical trainings on soap making, body lotion and shampoo making techniques. She did her best to use the products the group provided to make sure that the process can be adopted and sustained after the assignment. She made several recommendations to enable the women start and manage a soap, body lotion and shampoo business.

Target host organization: Fédération Jokkere Endam
Recommendations:
- Try the different oils to have a better idea about their purposes.
- Take much care of the lye because of its danger.
- Always use a good mold for better quality soap.

Vegetable Processing and Storage Techniques, Jim Valentine, January 30 – February 13, 2016
Assignment Description: Jim Valentine came to Senegal to provide technical assistance to the Fedde Balal Allah women on vegetable processing and storage techniques. The group is made up of more than 500 members, divided into 5 subgroups, who are working together to produce rice and vegetables on a 3 ha plot of land. Jim met with the group representatives to review and finalize the schedule. After that, he presented a theoretical explanation of the importance of food preservation, emphasizing sanitation. He prepared and delivered practical trainings on hot pepper, tomato, and carrot jam making in addition to vegetable drying techniques. He made several recommendations to enable the women develop a
small business in jam making and dried vegetables.

Target host organization: Fedde Balal Allah
Recommendations:
- Keep making jam and start the business.
- Respect sanitation conditions to make good quality jam.
- Try different proportions to find the best recipe.
ANNEX 2: PERSUAP REPORTING

Over the period covered by this report, ACDI/VOCA has had the following experience in implementing the F2F PERSUAP:

A. Assignments with Pesticides: The following Type 1 or 2 volunteer SOW were completed during the reporting period for F2F West Africa.

Senegal Assignments FY2016
1. Volunteer, Eva Christensen served on a Soil fertility assignment with GPF Ganki Sinthiou Garba
   a. Activities with pesticides/fertilizers: instruction was minimal and based on current crops, not “fertilizer use” in general. The participants learned how to use the appropriate type of fertilizer for the appropriate crops
   b. Key findings and recommendations on limitations/successes of F2F PERSUAP: N/A
   b. Recommendations to F2F for additional support needed to improve pest and pesticide: N/A

2. Volunteer, Sequoia Ireland served on a Cultural Planning and Crop Association assignment with Bokk Xol
   a. Activities with pesticides/fertilizers: Sequoia advised the participants to plant some sort of prickly bush along the fence of the village gardens to decrease impact of pests such as “Jaar”.
   b. Key findings and recommendations on limitations/successes of F2F PERSUAP: N/A
   c. Recommendations to F2F for additional support needed to improve pest and pesticide: N/A

3. Volunteer, Ryan Hottle, served on a Millet Growing Practices assignment with the Bolel Group
   a. Activities with pesticides/fertilizers: The volunteer worked went through composting training session; Hands on course on composting
   b. Key findings and recommendations on limitations/successes of F2F PERSUAP: N/A
   c. Recommendations to F2F for additional support needed to improve pest and pesticide: N/A

4. Volunteer, Makhtar Diop served on a Conservation farming assignment with Ndiob Group
   a. Activities with pesticides/fertilizers: The volunteer went through composting training session and show to the participants ways to obtain improved compost piles.
   b. Key findings and recommendations on limitations/successes of F2F PERSUAP: N/A
   c. Recommendations to F2F for additional support needed to improve pest and pesticide: N/A

5. Volunteer, Sara Tiffany served on a Soil Fertility and composting assignment with GPF Dine Islam
   a. Activities with pesticides/fertilizers: She talked about the nitrogen materials (Greens) and carbon materials (Browns) to use to make compost, how to make, how to take care of it and how to use it. She enumerated the materials as letting them the different kinds in each section.
   b. Key findings and recommendations on limitations/successes of F2F PERSUAP: N/A
   c. Recommendations to F2F for additional support needed to improve pest and pesticide: N/A

Ghana Assignments FY2016
6. Volunteer Jeanne Chabrier served on “Pesticide Safety Assessment with B-Kaayyire Agrochemicals
Limited. In her three-week assignment, Jeanne Chabrier conducted an assessment of pesticides use in Ghana. This assignment was to allow F2F Ghana to review the existing PERSUAP so as to guide volunteers in assignment execution.

a. Activities with the host: The volunteer visited the environmental implementing agencies that include Environmental Protection Agency, Plant Protection and Regulatory Services Division (PPRSD), Food and Drugs Authority to conduct interviews to gather information to help review and update the PERSUAP. She also had the opportunity to interview input dealers and farmers on pesticide usage.

b. Key findings and recommendations on limitations/successes of F2F PERSUAP: N/A

c. Recommendations to F2F for additional support needed to improve pest and pesticide:

- Engage the EPA and the PPRSD to survey and track sources of illegal/banned products and unlicensed agro input dealers
- Engage the regulating bodies and help foster more of a relationship with the removal of obsolete pesticide stocks
- Also encourage licensed input dealers to discourage the use of illegal counterfeit products
- Create or find an incentive for the purchase and use of Personal Protective Equipment (PPE)

7. Volunteer, Muamba Kabeya conducted an assignment on reducing pest and disease incidence in vegetable production in Ghana, with Nasara Farmers Association. This assignment was to consciously combat the outbreak of pests and diseases in the community, which always render seedlings unhealthy and susceptible to pests and diseases attack after transplanting.

a. Activities with the host: The volunteer assessed the production challenges related to Nasara Farmers Association farming operations, and trained the individual farmers on improved seed selection methods, site selection, nursery management, land preparations and other improved agricultural practices in vegetable production. Dr. Kabeya visited some farms and trained the farmers on physical, biological, and cultural methods of controlling pest and diseases.

b. Key findings and recommendations on limitations/successes of F2F PERSUAP: N/A

c. Recommendations to F2F for additional support needed to improve pest and pesticide: N/A

DRC Assignment FY2016

8. Volunteer Michael Matthews for assignment Integrated Weed Control for Rice Production. The scope of work requested the volunteer to assess the current farmers ‘weed control knowledge and identify the constraints on the use of different weed control methods.

a. Activities with the host: The volunteer provided training and conducted an assessment of pesticides use and pesticide safety.

b. Key findings and recommendations on limitations/successes of F2F PERSUAP: N/A

c. Recommendations to F2F for additional support needed to improve pest and pesticide:

i. Use of protective wear for application of pesticide
ii. Volunteer pointed out the absence of provision of service by the extension service constitutes a major limitation in the appropriate use of pesticides, especially, herbicides by farmers. In addition, the official government approved pesticides list has not been updated since 2011.

B. Needs for a PERSUAP amendment: There are no recommendations at this time for a PERSUAP amendment to add pesticides for any West African F2F core country.
## F2F PERSUAP Assignment Data Table:1

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<td>A-W-187NC</td>
<td>Makhtar Diop</td>
<td>Senegal</td>
<td>Environmental conservation</td>
<td>2</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>A-W-194NC</td>
<td>Sequoia Ireland</td>
<td>Senegal</td>
<td>Horticulture</td>
<td>2</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>A-W-134NC</td>
<td>Charlene Nash</td>
<td>Senegal</td>
<td>Environmental conservation</td>
<td>2</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>A-W-213NC</td>
<td>Ryan Hottle</td>
<td>Senegal</td>
<td>Millet Value Chain</td>
<td>2</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>A-W-225NC</td>
<td>Sara Tiffany</td>
<td>Senegal</td>
<td>Environmental conservation</td>
<td>2</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>A-W-224NC</td>
<td>Makhtar Diop</td>
<td>Senegal</td>
<td>Millet Value Chain</td>
<td>2</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

---

1 Required only for PERSUAP Type 1 & 2 SOWs, and for Type 4 SOWs that follow Type 1 & 2 requirements
II. Certifications of assignment and office compliance with PERSUAP guidelines:

A. PERSUAP Compliance – F2F Assignments

ACDI/VOCA and partner NCBA CLUSA certifies that all volunteers have received the F2F Environmental Brochure. For all PERSUAP Type 1, 2 and relevant Type 4 SOWs, ACDI/VOCA further certifies the following have been provided to and developed by the relevant volunteers:

<table>
<thead>
<tr>
<th>Provided to Volunteer</th>
<th>Type 1 SOWs²</th>
<th>Type 2 SOWs²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• F2F PERSUAP with Attachments A - H</td>
<td>• F2F PERSUAP with Attachments B, C, F, H</td>
</tr>
<tr>
<td></td>
<td>• SUAP briefing with F2F field staff</td>
<td>• SUAP briefing with F2F field staff</td>
</tr>
<tr>
<td></td>
<td>• Implementing Partner F2F PERSUAP Questionnaire</td>
<td>• Implementing Partner F2F PERSUAP Questionnaire</td>
</tr>
<tr>
<td></td>
<td>• List of any IPM practices and any tools, forms, protocols, plans from previous volunteers</td>
<td>• List of IPM practices from previous volunteers</td>
</tr>
<tr>
<td></td>
<td>• Host country list of approved pesticides³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Approved pesticide list from any other applicable PERSUAPs</td>
<td></td>
</tr>
</tbody>
</table>

Developed/Provided by Volunteer

<table>
<thead>
<tr>
<th>Developed/Provided by Volunteer</th>
<th>Type 1 SOWs²</th>
<th>Type 2 SOWs²</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Syllabus for training event</td>
<td></td>
<td>• Limitations/successes of F2F PERSUAP</td>
</tr>
<tr>
<td>• Material Safety Data Sheets (filed in field office)</td>
<td></td>
<td>• Recommendations for additional support on pesticide management practices</td>
</tr>
<tr>
<td>• Any pesticides that the F2F program should be able to recommend/use which are included on an approved list</td>
<td></td>
<td>• Recommendations/feedback on local IPM practices</td>
</tr>
<tr>
<td>• Limitations/successes of F2F PERSUAP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Recommendations for additional support on pesticide management practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Recommendations/feedback on local IPM practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Highly Toxic Pesticides (Attachment E)/poor pesticide practices witnessed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Tools, forms, protocols, plans for implementation of pesticide-related recommendations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. PERSUAP Compliance – F2F Offices

ACDI/VOCA and partner NCBA CLUSA certifies that all F2F staff have reviewed the F2F Environmental Brochure for staff the fiscal year and that the following have been updated and kept on file:

<table>
<thead>
<tr>
<th>Documents Updated</th>
<th>Home Office</th>
<th>Field Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>• F2F Environmental</td>
<td>• F2F Environmental Brochure for staff</td>
<td></td>
</tr>
</tbody>
</table>

² If governed by F2F PERSUAP, Type 4 SOWs should follow requirements for Type 1, 2, or 3 SOWs, as most relevant
³ Or, letter from host country government stating that there is no list of government-approved pesticides and noting any specific measures that should be taken when F2F volunteers recommend pesticides
<table>
<thead>
<tr>
<th>Home Office</th>
<th>Field Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>and on File</td>
<td>• PERSUAP with Attachments A-I&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>• USAID Mission- or sector-wide PERSUAP(s) for relevant country/sector</td>
</tr>
<tr>
<td></td>
<td>• Host country list of approved pesticides&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>• Implementing partner F2F PERSUAP Questionnaire, with any volunteer additions</td>
</tr>
<tr>
<td></td>
<td>• Material Safety Data Sheets for relevant pesticides&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>• Tools, forms, protocols, plans developed by volunteers</td>
</tr>
<tr>
<td>Brochure for staff</td>
<td></td>
</tr>
<tr>
<td>• PERSUAP with Attachments A-I</td>
<td></td>
</tr>
<tr>
<td>• Any USAID Mission- or sector-wide PERSUAP(s)</td>
<td></td>
</tr>
<tr>
<td>for relevant country/sector</td>
<td></td>
</tr>
</tbody>
</table>

<sup>4</sup> It is recommended that these documents be translated into local languages for distribution to relevant hosts and partners. Please note if they have been translated (in whole or in part), and if not, why.