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FOOD AND ENTERPRISE DEVELOPMENT (FED) PROGRAM FOR LIBERIA

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Photo Caption: FED staff and farmers measure random UDP Broadcast plot planted in FY13 at the Fuamah Cooperative farm in Bong Mines, Bong County. FED celebrated the harvest by inviting US Ambassador Deborah Malac, USAID Deputy Mission Director, government dignitaries, and the press. FED has determined that UDP plots yielded up to 7.4 MT per hectare while the broadcast method yielded an estimated 6.1 MT per hectare.

DISCLAIMER

The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

ACRONYMS

ACE	Africa Cost to Europe
AEDE	Agency for Economic Development and Empowerment
APDRA	Association Pisciculture et Development Rural en Afrique
AYP	Advancing Youth Project
AWEP	African Women Entrepreneurship Program
BSTVSE	Bureau of Science, Technical, Vocational and Special Education
BWI	Booker Washington Institute
CARI	Center of Agriculture Research Institute
CYNP	Community Youth Network Program
CVC	Cassava Value Chain
DAI	Development Alternatives, Inc.
DCOP	Deputy Chief of Party
ECOWAS	Economic Community of West African States
ED	Enterprise Development
EMMP	Environmental Mitigation and Monitoring Plan
EO	Extension Officer
FED	Food and Enterprise Development
FTF	Farmer to Farmer
FtF	Feed the Future
FUN	Farmer Union Network
GBCC	Grand Bassa County Community College
GCAP	Green Coast Agricultural Program
GPS	Global Positioning Systems
IFDC	International Fertilizer Developmental Center
IITA	International Institute for Tropical Agriculture
IP	Implementing Partner
IQC	Indefinite Quantity Contract
LAUNCH	Liberia Agriculture, Upgrading Nutrition & Child Health
LCCC	Lofa County Community College
LIFE	Livelihood Improvement for Farming Enterprises
LMEP	Liberia Monitoring and Evaluation Program
LREC	Liberia Renaissance Education Complex
MDF	Market Development Fund
MIS	Market Information Systems
MoA	Ministry of Agriculture

MoCI	Ministry of Commerce and Industry
MoE	Ministry of Education
MoU	Memorandum of Understanding
MSME	Micro, Small and Medium Enterprise
NAD	National Diploma in Agriculture
NCCC	Nimba County Community College
NGW	New General Women
NV	National Volunteer
PIDS	Performance Indicator Database System
PMP	Performance Management Plan
PUA	Peri-Urban Agriculture
R&RF	Rights & Rice Foundation
RFTOP	Requests for task order proposals
RRA	Rapid Rural Appraisal
STTA	Short Term Technical Assistant
TAMIS	Technical Administrative Management Information System
TVET	Technical, Vocational Education and Training
UDP	Urea Deep Placement
UL	University of Liberia
UMU	United Methodist University

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Background

The Food and Enterprise Development (FED) Program for Liberia is a USAID-funded development program that was launched in September 2011. USAID FED uses an all-inclusive strategy incorporating MSME farmers, processors, suppliers, women and youth while partnering with the government of Liberia and local civil societies to achieve food security.

The goal of USAID FED is to increase food availability, utilization, and accessibility by building an indigenous incentive structure that assists agricultural stakeholders in adopting commercial approaches.

This incentive structure will be built upon:

- Improved technology for productivity and profitability
- Expanded and modernized input supply and extension systems
- Commercial production, marketing, and processing
- Enterprise services
- Workforce development

FED works with the Ministry of Agriculture (MoA), civil societies and the private sector in providing communities access to agricultural inputs (including improved seeds), extension services, nutritious food products, processing services, market information, transportation, credit, agro-business education, training, and enterprise services.

In five years, FED's thrust to expand market linkages is expected to lead to substantial increases in income and job opportunities. FED aims to significantly boost the production, processing, marketing and nutritional utilization of rice, cassava and vegetables, and to enhance the productivity of goat farming in the counties covered by the program.

These initiatives are being carried out in the counties of Bong, Lofa, Nimba, Grand Bassa, Montserrado, and Margibi. FED focused on these counties because they are situated along regional development corridors that are crucial in promoting intra and inter-county commerce. These growth corridors are expected to improve food availability and access for all Liberians.

FED's methodology is market-led and value chain-driven; it is committed to develop indigenous capacity building, with specific focus on Liberia's women and youth.

FED's approach is collaborative and catalytic. It is driven by the goals and objectives of our partner clients. It aims to increase incomes of rural households and create new employment and livelihood opportunities for Liberians; to improve access to food and household dietary diversity scores of food-insecure Liberians; and to promote the use of improved inputs, better farming practices, and technologies that boost agricultural productivity.

FED is implemented by five partners, namely: Development Alternatives, Inc. (DAI), Winrock International, International Fertilizer Developmental Center (IFDC), Louisiana State University (LSU), and The Cadmus Group.

Executive Summary

Year to date, FED has measured a total of 120 rice harvest samples from 37 sites from FY13 rice sites (Table 1). In addition, FED has measured 17 of the total 20 FY13 Urea Deep Placement (UDP) sites. Preliminary results show that the UDP method of fertilizing produces an average 5.98 MT per hectare, 17% higher yield than the broadcast method (5.11MT/ha) and 30% higher yield than no fertilizer at all (4.62MT/ha).

FED conducted the first FY13 harvest sampling of cassava yields in Grand Bassa county (Table 5). FED sampled a total of nine sites including six demonstration sites and three non-FED sites. The FED demonstration sites, which all used improved varieties of cassava and planted in mounds and ridges reported yields in the range of 13-22 MT/ha. The two Non-FED sites planting local varieties of cassava reported an averaged 6.2 MT/ha.

FED partnered with Liberia Entrepreneurial & Asset Development (LEAD) to sign loan agreements (Table 10) totaling \$1,630,000 LD (\$20,375 USD) for seven FED farming groups in Montserrado, Margibi and Nimba Counties. Each farming groups decides how to divide the loans amongst the members and will pay back the loans in six months with 16% interest. The loans will be used to procure inputs and expand their vegetable production.

In the period, FED signed a MoU with USAID funded Investing for Business Expansion (IBEX) program to provide qualifying FED farmers with record keeping and financial training, in-house business development services, and support for packaging applications for financing from local banks. In addition, the two will provide feedback to beneficiaries and lending institutions to improve relations between Liberia's agribusiness and financial sectors.

FED also signed a MoU with local rice processing firm Fabrar Liberia to increase the breadth of marketing and sales of Liberian rice through the expansion of Fabrar's processing capacity from approximately 500 MT to 3,750 MT of locally grown, milled rice each year. This is part of FED's effort to ensure that the future additional rice production of the FED's beneficiaries will have a market.

FED has signed a MoU with the Louisiana State University (LSU) to support two students with degrees in Agriculture for post graduate studies in soils and horticulture. The activity is in line with FED's mandate to build human managerial and technical capacity to support agriculture development. One student, Woiklee Payee will leave in Q2 to pursue a Master's degree in Soils Science at LSU. He will return after one year to carry out his research work to address issues in soils identified by FED.

FED distributed three press releases in the period covering FED's rural radio training, the goat value chain's Community Animal Health Worker training, and the loans given to FED farmers through local micro finance partner LEAD.

Component One: Increase agricultural productivity and profitability

Task 1 Value Chain Development

Task 1A. Increased productivity and profitability of the rice value chain

The main activities during Q1 include the harvesting and measuring of rice yields and the recruitment of new upland and lowland farmer groups for FY14. In addition to the new farmers, FED has identified 160ha for rice seed multiplication and 50ha of lowland water management infrastructure sites. The preparation for the construction on eight rice processing center sites and one commercial rice processing site is ongoing.

Summary UDP Field Trials YTD - lowland rice				
(weights are in MT/ha)				
Lowland UDP	Weight in MT/ha		% Recovery	% Loss
	Wet	Dry		
Bong	6.05	4.79	79.2%	20.8%
Lofa	6.12	4.82	78.7%	21.3%
Nimba	5.77	4.85	84.0%	16.0%
Total	17.939	14.456		
Ave	5.98	4.82	80.6%	19.4%
Lowland Urea Broadcast				
	Weight in MT/ha		% Recovery	% Loss
	Wet	Dry		
Bong	5.23	4.21	80.4%	19.6%
Lofa	6.38	5.06	79.3%	20.7%
Nimba	3.71	3.07	82.9%	17.1%
Total	15.32	12.34		
Ave	5.11	4.11	80.5%	19.5%
Lowland Farmer's Practice (FP)				
	Weight in MT/ha		% Recovery	% Loss
	Wet	Dry		
Bong	4.34	3.42	78.8%	19.5%
Lofa	5.93	4.81	81.1%	18.9%
Nimba	3.59	2.90	80.6%	19.4%
Total	13.86	11.12	% Recovery	% Loss
Ave	4.62	3.71	80.2%	19.8%

Table 1: UDP, Broadcast and FP wet and dry weight yield estimates.

Harvest

The FY13 rice harvest continues with sample measurements of wet and dry weights at each site. A total of 37 sites—representing 120 samples—in Bong, Nimba, Lofa and Grand Bassa were successfully harvested and measured for yield.

FED measured rice yield from farmer and field trial plots in order to measure the difference in yield among Urea De-Placement (UDP), Urea Broadcast (UB), and traditional farmer practices (zero urea/control plots.). FED measured 17 of 20 total UDP sites planted in FY13.

The UDP method continues to show superior yields in both wet and dry yields across the three counties (See Table 1).

Rice plots using the UDP method yielded 4.82 MT/ha compared to the UB method which yielded an estimated 4.11 MT/ha in dry weight, while the traditional farmer practice yielded 3.71 MT/ha.

The results show that UDP farmers experience 17% higher yields by placing the urea briquettes deep into the soil than by broadcasting the urea over the field, and a 30% higher yield than no fertilizer at all. The plots with broadcasted urea produced yields 11% higher than plots with no fertilizer.

Production & Sales

Rice was harvested in Q1 from 1,386 ha or 66% of the total area cultivated by FED beneficiaries during FY13. Table 2 shows that total yield from the area harvested comes to about 4,670 MT. Harvesting continues through the months of January and February 2014. Bulk of the harvest is expected to be consumed, while a certain percentage will be sold on a staggered manner to fund other household needs as well as to fund inputs for the next planting season. Of the harvested volume, a small portion, 12.3 MT have been sold for US\$5,403 as of end of Q1. Sales are expected to happen throughout the year.

Table 2: Rice Production and Sales summary by county based on survey results.

Harvest	Area Planted (ha)	Area Harvested (ha)	Ave. Productivity (MT/ha)	Actual production as of end of FY14 Q1 (MT)
Lofa	54.9	35.685	3.37	120.26
Nimba	48.9	46.455	3.37	156.55
Bong	1,972.10	1,281.87	3.37	4,319.89
Grand Bassa	17.1	13.68	3.37	46.10
Montserrado	3	3	3.37	10.11
Margibi	5	5	3.37	16.85
Totals	2,101	1,386	3.37	4,669.76
	Target		Actual as of end of FY14 Q1	
Sales	Volume (MT)	Value (USD)	Volume (MT)	Value (USD)
Lofa	20.60	8,859	3.14	1,887.14
Nimba	18.23	7,837	11.63	5,117.20
Bong	744.08	319,949	TBD	TBD
Grand Bassa	6.42	2,760	0.65	286.00
Montserrado	1.11	477	TBD	TBD
Margibi	1.82	784	TBD	TBD
Totals	792.41	340,734	12.28	5,403.20

County Progress Report

Lofa

During this period, Kormai, Galamai, Zeelie Production (David Selma's Town), and Meleya farmers Associations harvested, processed and bagged 4.6MT of rice from their demonstration sites in Voinjama and Quardu Gboni Districts. The Meleya Farmers Association has sowed 10kg of Nerica -I9 for planting in the UDP Demo Site that was harvested. In Foya and Kolahun Districts, the farmer groups: Kahenjala, WOFPD, Kissi Ethnic Group, Bayers Farmers Association, Farmers United for Sustainability, Chellando, and Ohnae Farmers Associations harvested an estimated 7.03MT.

In the month of December, the Kissi Ethnic Group reported sales of 1,647kg of rice for \$990 USD, and the Kahenjala Farmers Association reported \$890 USD from sale of 1,485kg of improved rice varieties.

Nimba

Over 100 farmers in Nimba have received additional seed rice totaling approximately 10,500kg of seed from FED to plant on individual farms. Over 95% of year two category B and C groups have completed transplanting and rice is now in a vegetative stage. The Nimba enumerators completed the 2013 rice and vegetable household surveys in the period, totaling 81 surveys.

Rice yield sampling is ongoing. The Extension and M&E Teams are working with those groups to ensure successful harvests and documentation of yields (See Task 4, M&E).



Figure 1: Upland Rice Harvest in Janyea, Bong County.

Bong

During the period, FED collected samples at 26 rice production sites, 21 lowland rice fields and 5 upland rice fields. The groups that harvested in Bong during the course of the period planned to keep 30% of their rice as seed to expand their fields for the next farming season while selling the remaining 70%, creating a source of finance and empowering the group members. FED expects to see profits from the rice sales reported in FY14.

Grand Bassa

In Grand Bassa County, two lowland rice sites harvested 650kg of improved rice varieties. Threshing, drying and bagging will continue in January 2014.

FY14 First Quarter Rice Farmer Recruiting

FED continues to identify, recruit and register new farmers for the FY14 rice growing season (Table 3).

FY14 Farming Groups Recruiting by County			
County	# Groups Recruited	# of Farmers	FY14 Targets
Lofa	-	1,520	5,658
Nimba	76	TBD	6,819
Bong	-	4,568	5,797
Grand Bassa	-	750	875

Table 3: Rice farmer recruiting by county in Q1 FY14.

Installation of Additional Rice Processing and Storage

Community Rice Mills

In FY13, FED completed site assessments and signed MoUs with community leaders for the construction of eight rice processing centers in Bong, Lofa, Nimba and Grand Bassa counties. In the first quarter of FY14, FED purchased and delivered building materials to six of eight rice processing centers, located in Bong and Nimba counties. Site construction at these sites is scheduled to begin in early January 2014.

Each site was selected around a rice production cluster area with a high density of rice producers to create a critical mass of clients who would pay to mill paddy rice. The centers will be managed by FED farmer groups and employ a minimum of four people to manage day to day operations. FED groups will target women and youth for these jobs which include storage management, marketing of agro inputs, and the actual milling. At each center, FED expects approximately 1,000 farmers to benefit from the rice milling technology.

In the period, FED selected and hired 24 professional masons (three masons for each structure) to lead the construction of the eight buildings. FED has selected three building material suppliers in Nimba County and one supplier in Bong County. The rice processing centers are expected to be completed by the end of February 2014 and will form an integral part of FED's FY14 strategy to increase agribusiness in the rice value chain.

Industrial Rice Mills and Warehouse

FED signed an MoU with Fabrar Liberia, Inc. (See Figure 2) on December 13, 2013. The main goal of the alliance is to increase the breadth of marketing and sales of Liberian rice through the establishment of an industrial processor. FED will finance the purchase, installation and technical support for the equipment in Fabrar's Kakata facility. Fabrar agreed to share the costs and provide logistic support for purchasing rice from FED farmer and out-growers at mutually agreed prices.

The main activities include:

- Expansion of processing plant capacity to 3,750 MT per annum through installation of modern milling lines, mechanical dryers and packaging machines;
- Expansion of storage capacity to accommodate 800 cubic meters of processed as well as grain rice;
- Establishment of rice collection points or buying stations in FED's counties of operation;
- Establishment of a supply base for Fabrar and market for FED's rice farmer beneficiaries through out-grower arrangements;
- The implementation of a marketing strategy that supports the promotion of Fabrar's rice products;
- Generation of seed producers across FED's four counties (Lofa, Nimba, Bong and Grand Bassa) trained in the protocols of certified seeds production to ensure rice farmers access to good seeds thereby assuring raw material availability for the rice mill;
- Business advisory support to Fabrar, Inc.

Through these activities, the partnership is expected to expand rice production, raise farm incomes and contribute to Liberia's gross national product.



Figure 2: Fabrar Liberia, Inc. already has a small presence in the country's local rice market.

Water Management Infrastructure

FED selected lowland sites with potential for year-round rice production to be used as sites for water management infrastructure demonstration. Improved utilization of available water sources can increase productivity per unit area per annum via double or even triple cropping in one year. Maintaining the right amount of water on these plots is crucial to allow rice to grow in the dry and especially in the rainy season when some plots tend to flood. FED expects to begin conducting the 3-day water management training in Q2 in each county. From each selected site, four farmers will participate (Table 4).

Water Management Infrastructure Training Targets		
County	Districts	# of farmers to be trained
Nimba	Saclepea, Sanniquellie, Tappita	12
Lofa	Kolahun, Foya, Voinjama,	12
Bong	Kpai, Salala	16
Grand Bassa	District 1, 3	8
Total		48

Table 4: Lists the number of participants in each county for FED's water management infrastructure training in FY14.

System of Rice Intensification (SRI) Workshop

In December, FED participated in a SRI workshop in Kakata, Margibi County alongside 70 other participants from the country's rice sector, including MOA extension agents from eight counties. This workshop was sponsored by the World Bank WAAP project which promotes SRI rice technology and techniques throughout the world. The purpose of the workshop was to identify 'champions' and initiate a road map for future promotion and data collection of SRI methods being used in Liberia.

The SRI strategy has been proved with yields ranging from seven to 11MT/ha on lowland rice. The SRI strategy includes using improved seed, dry nursery beds, short seedling production periods of 10 days, transplanting, planting in rows, plant spacing (25 cm), intensive fertilization using organic manures (15 MT/ha), field leveling, wet/dry water control, and mechanized weeding.

Being part of the SRI workshop network is important to FED to share key experiences with partners. FED already engages the majority of the SRI techniques on its lowland and upland rice fields.

Task1B. Increased productivity and profitability of the cassava value chain

FED used the period to finalize the FY14 strategy for the cassava value chain. Discussions with the technical teams in the field have provided a clearer understanding of the strategy which will take the following approach:

- The group farming concept will be replaced by the local *kuu* system, a traditional organizational structure based, to encourage adoption of improved technology on individual farms.
- The *kuu* system, consisting of approximately 15 people, rotates workloads from farm to farm. As a result, the *kuu* system allows each farmer to be responsible for the outcome of his/her farm while encouraging the entire group to help with planting, weeding and harvesting on each farm.
- Create area clusters around which FED can link cassava producers to processing and access to markets.
- *Kuu* leaders will be given improved cassava cuttings and peanuts and cowpeas to demonstrate inter-cropping as part of the ISFM (Integrated Soil Fertility Management) technology. The rest of the farmers will be trained on improved practices that will increase their yields.

FY13 Cassava Harvest

FED visited cassava farmers (Figure 3) in Grand Bassa county—FED’s most important cassava growing region—to conduct a study and compare average yields of fields operated by FED farmers using improved technology and techniques with those of non-FED farmers using traditional planting methods. Cassava yields were convincingly better on fields operated by FED farmers (Table 5). These farmers prove that by adopting few best practices related to planting and field preparation, farmers will see a substantial increase in yield of about 6 to 8 MT per hectare. FED also compared yields of plots according to two improved planting methods: mounds vs. ridges.



Figure 3: Annie Gongga harvests cassava roots from a mound at a demo plot in Grand Bassa county.

Farmer Category	Variety	Date Planted	Planting Method	Yield MT/ha
FED	improved	June, 2012	Ridges	21.6
FED	improved	August, 2012	Mounds	16.6
Non-FED	local	June, 2012	Mounds	21.6
FED	improved	July, 2012	Mounds	10.0
FED	improved	July, 2012	Ridges	21.6
Non-FED	local	March, 2013	Flat	5.8
Non-FED	local	March, 2013	Flat	6.6
FED	improved	July, 2012	Ridges	15.0
FED	improved	July, 2012	Mounds	13.3

Table 5: Cassava harvest data collected in Q1 FY14 from FED and non-FED farmers in Grand Bassa county.

FY13 Cassava Harvest Conclusions and Lessons

Following the harvest measurements, FED made the following conclusions and recommendations the FY14 cassava production strategy:

- Most individual fields of FED-supported farmers are better weeded and managed than the FED supported group demonstration plots. This is because most farmers are reluctant to give their best input to an initiative that they do not individually own. As a result FED has revised the FY14 extension and outreach strategy to focus on the kuus and individual farmer with his own farm.
- Some of the locally adapted varieties yield sizably well (Figure 4) if planted on mounds or in ridges. FED will consider including these varieties in the design of the 615 demonstration plots to be established on kuu leaders' farms.



Figure 4: A FED Operated Cassava Demonstration Site in Grand Bassa County.

FY14 Farmer Recruitment

Under the new cassava production strategy, FED started recruiting farmers and kuus for FY14 activities (Table 6). FED teams in Lofa already reached the FY14 targets while other counties are well on their way.

FY14 Recruiting by County			
County	# Groups Recruited	# of Farmers	FY14 # of Farmers Targets
Lofa	35	1750	1200
Nimba	76	2000	4800
Bong	38	1,111	2400
Grand Bassa	119	2,779	3600

Table 6: Cassava farmer recruiting by county in Q1 FY14.

Task 1C. Increased productivity and profitability of goat value chain

In the period, FED signed a MoU with USDA's Food for Progress/Land O'Lakes (LOL). In the MoU, FED will support LOL's goat importation program through the construction of a quarantine park at Center of Agriculture Research Institute (CARI). LOL will provide FED with 400 improved breed of billy goats coming from the satellite stations of ITC in Senegal.

Quarantine park construction began in the period and is expected to be finished end of January 2014. Importation by LOL is expected to start by the middle of February 2014.

Goat Group FY14 Recruitment

FED has completed verification of over 30 goat producer groups in Nimba and 20 goat producer groups in Lofa counties. In Nimba, two goat groups in each of 15 communities have been selected (Table 7). In Grand Bassa county, FED pre-selected nine goat communities for FY14. There are four goat communities in each of Districts 2 and 3 and one community in District 4. In Bong, 25 communities have been pre-selected for the location of groups to be supported. Group verification and final selection in Bong and Grand Bassa counties will be done in January.

FY14 Goat Shelter Groups Recruiting by County			
County	# of Groups	# of Farmers	FY14 # of Farmers Targets
Lofa	20	400	400
Nimba	30	600	600
Bong	25	500	500
Grand Bassa	9	180	180

Table 7: Goat farmer recruiting by county in Q1 FY14. Note, the table provides numbers for direct beneficiaries that will receive support in the way of goat shelters and technical assistance. Another 3320 farmers will receive training from FED in FY14.

CAHW Training

In the period, FED completed its first Community Animal Health Worker (CAHW) training activity, which took place in Nimba, Lofa, Bong and Grand Bassa counties. The hands-on training began in FY13 and was concluded in October (FY14).

Many Liberian goat farmers do not check their animals for health issues or know the types of diseases that typically affect Liberia's indigenous goat herds. In addition, rural goat farmers in isolated areas have little or no access to veterinary services and animal medicine. The training provided 36 rural goat farmers with the knowledge and tools needed to enable them to provide health care services to the goats of their neighbors. Post training, the newly trained animal health workers were introduced to rural pharmacies. FED is working to help these pharmacies to stock and sell veterinary drugs (See Subtask 1.2 Input Supply).

FED developed a village farmer user-friendly guide book for the reference of these animal health care workers.

Task 1D Increased productivity and profitability of the vegetable value chain

FY14 Beneficiary Selection

In the period, FED finished beneficiary selection and recruitment and reached the FY14 targets of 360 farmers from 20 groups (See Table 8). In addition, FED delivered all accompanying tools, seeds and agro chemicals to the farmers.

FY14 Recruiting by County			
County	# Groups	# of Farmers	FY14 # of Farmer Targets
Montserrado	6	108	108
Margibi	8	144	144
Bassa	2	36	36
Nimba	4	72	72
Total	20	360	360

Table 8: PUA FY14 farmer recruiting by county.

Vegetable Production

FED conducted a Training of Trainers for the 20 Lead Farmers (19 male, 1 female) representing the 20 farming clusters in Montserrado, Margibi, Grand Bassa, and Nimba Counties. Training topics included improved production practices, seedling production, voucher/input distribution, water management, post-harvest handling (Figure 8), financial record keeping and marketing, environmental considerations, and composting. The Lead Farmers with support from the field extension agents are responsible for imparting the information to their respective clusters. All groups planted in early to mid-December and expect to make the first harvest in early March 2014.

Access to Market



Figure 8: FED supported vegetable group, Menlekoyee, Nimba County harvesting bitter ball.

In the period, FED held talks with Go-Buy-Chop women and key second-tier traders at the Red Light Market to distribute an expression of interest to find buyers who would like to work directly with FED PUA farming clusters. Those traders interested in working with FED and the clusters will sign a MOU with FED. In January 2014, FED plans to bring the interested traders and the lead farmers together to discuss contracts and vegetable purchasing.

FED will support participating traders with small toolkits (ledgers and scales) as well as training and mentorship in record keeping, forward contracting, and proper weighing of produce. The traders will then be linked to the FED farming clusters, and FED will mentor both parties in utilizing formal buying contracts for the first harvest season, which is expected to begin

in February and March 2014.

PUA Harvest

The following table (Table 9) provides figures on the amount of vegetables harvested as well as group sales according to county. Note that the harvests and sales are from FY13 farming groups.

County	Kg	Sales (\$LD)	Sales (\$USD)
Margibi	2352.2kg	61,970	\$755.73
Lofa	160kg	12110	\$147.68
Nimba	755.9kg	N/A	N/A
Bong	95kg	814	\$9.92
Grand Bassa	206kg	8,220	\$102.75
Total	3383.1kg	83114	1016.08

Table 9: Gives Q1 FY14 harvests and sales numbers according to county. Typically, groups have cultivated cabbage, bitter ball, lettuce, pepper, cow peas, watermelon and peanuts.

Subtask 1.1 Special Studies and MoA Data Collection System Development

Enumerators and Project Surveys

FED selected and trained 40 enumerators (10 in each county) for the rice and vegetable surveys. After providing the enumerators with two-day training, the enumerators began the 12-day survey of rice and vegetable FY13 farmers and completed data collection in December 2013.

The rice survey is a follow-up to the initial survey conducted in May 2013 and is intended to determine production, input type and cost used on the farmer's own land, and the rate of adoption of the new technologies introduced in FY13.

In the vegetable value chain, enumerators surveyed production costs, estimates and sales. The surveyed group of vegetable producers will also be tracked over time to determine their progress and use of improved technologies in the long term.

The data will be prepared, and a preliminary analysis is expected to be available by the end of January.

FED prepared the upcoming Land Use and Planning Survey, which will target the four core counties. Pending budgeting and approval, the survey is expected to begin in Q2.

Cassava Harvest Sampling

FED conducted the first FY13 harvest sampling of cassava yields in Grand Bassa county (See Table 4). FED sampled a total of nine sites including six demonstration sites and three non-FED sites. The FED demonstration sites, which all used improved varieties of cassava and planted in mounds and ridges reported yields in the range of 13-22 MT/ha. The two Non-FED sites planting local varieties of cassava reported an average yield of 6.2 MT/ha. Interestingly, the one non-FED site that used local varieties but the mounds and ridges techniques of planting, reported a yield of 21.6MT/ha showing that improved methods of planting play an important role in producing higher yields.

Rice Harvest Sampling

The 2013 rice harvest yield measurements continued through the quarter. The results were summarized, including 120 samples from 37 sites, from both lowland and upland sites (See Table 1). There are still 25 sites to be measured. Once the remaining 25 sites have been measured, a summary report will be prepared for the 2013 rice cropping season.

MoA M&E collaboration

In the period, FED collaborated with the Ministry of Agriculture's M&E officers on a field trip and to explore and initiate a pilot M&E effort at the county level. Bong County has been chosen to initiate the effort, and a proposal has been drafted to define the roles of each participant. FED expects to receive an official letter from the MoA requesting FED to support the pilot program. County level activities in Bong are expected to begin in Q2.

Subtask 1.2 Improved Access to Agricultural Inputs

Documentation of Curriculum and Certification of 30 Rice Seed Inspectors

In the first quarter, FED commenced the identification and selection process for 22 future seed multiplication sites across all counties (12 upland sites and 10 lowland sites) covering 40 ha lowland and 120 ha upland.

During the quarter, FED held four meetings with CARI and partners and agreed upon the following:

1. CARI will start the first training session with FED staff from February 10 to 14.
2. An STTA consultant will arrive February 24 to March 12 in order to complete the task of reviewing and documenting the CARI seed inspector curriculum.
3. CARI and FED will train 30 Seed Inspectors between March 24 and 28.

Rice Seed Multiplication

FED has started the identification and selection process for 22 seed multiplication sites for FY14. FED conducted field visits in October and November in Lofa, Nimba and Bong counties to assess lowland and upland sites for certified seed rice production. FED has identified well over the targeted 40ha for lowland and 120ha for upland rice seed multiplication. FED expects to complete site selection by the end of Q2 and begin planting in Q3.

Scaling Up UDP Activities in Lowland Commercial Rice Growing Areas

Through FY13 analysis and interaction with consultants, FED finalized its FY14 strategy for UDP lowland site demonstrations. FED will select 50 one-hectare sites to demonstrate UDP best practices as well as another 50 three-hectare sites to demonstrate UDP alongside broadcast and traditional farming methods. Site selection is expected to begin in January 2014.

Importation of IITA improved Cassava varieties from Nigeria for CARI

In collaboration with the International Institute of Tropical Agriculture (IITA), FED has begun the process of importing 11 new cassava cutting varieties from Nigeria for genetic screening by CARI. The improved varieties are disease resistant and will be screened by CARI before being considered for distribution to FED farmers. The activity is ongoing and the new cassava varieties are expected to arrive in March 2014.

Vegetable Packaging and Labeling Forum

FED has approached two major players in the market that responded to our request to hold a packaging and labeling forum to discuss product ranges, pack sizes, logistics and prices. The idea behind the forum is to connect FED farmers and producers with the packaging and labeling element of the value chain.

Vegetable Voucher Program

FY13 vegetable voucher program results:

- A total of 1,093 vouchers were prepared by FED for distribution; of which 805 vouchers were collected by farmers.
- Of the 805 vouchers distributed, 619 vouchers (76.9%) were redeemed. The number of redeemed vouchers exceeded FED's expectations.

- A total of 264 farmers bought 50kg bags, and 246 farmers bought 25kg bags, showing that there is a demand for smaller package sizes.
- A 70% redemption rate is satisfactory according to voucher expert, Allan Mansfield.

In the quarter, FED selected two agro suppliers—Wienco and Gro-Green—to submit tenders for future voucher programs. In Q2, FED will have completed the first of two vegetable voucher programs planned for FY14.

The FED input supply team held a Lessons Learned Conference (Figure 5) at the FED office in Bong County on 25 October. Participants included 19 people (4 females, 15 males). Lessons learned from the session include:

- There is a lack of communication between farmers and vendors;
- The restriction on the amount of fertilizer a farmer could purchase hindered the farmer’s ability to cover large farms;
- The wrong season for fertilizer limited the farmer’s ability to use the input;
- Farmers were pleased that the participating vendors were easily accessible;
- The reduction in the price of fertilizer allowed farmers to purchase more; and
- Demonstrations on the application of fertilizer are useful.



Figure 5. Lessons Learned session at the FED office in Bong county.

In the future, the farmers recommended that FED should designate a demonstration site for farmers to learn proper application techniques before distribution of the vouchers. Farmers prefer that the voucher program run throughout the year, instead of during just one season to enable other farmers in all sectors to be part of the voucher program.

Subtask 1.3 Agricultural Extension Support

By the end of Q1 FY14, the extension team finalized all training schedules and modules for all four value chains. FED also reviewed applications for extension officers, shortlisted and interviewed eight people. Hiring and training will take place January 2014.

Supporting the Rice Value Chain

In October, the Monrovia-based Extension Unit participated in lowland rice harvests and yield estimates in Lofa and Bong counties (Figure 6). As part of the exercise, the team captured video footage for developing an extension training documentary on sampling techniques for rice yield estimation, and result demonstrations for the different rice production technologies (i.e. Urea broadcast, UDP, and no fertilizer application). FED's county-based extension and M&E officers, Community-Based Facilitators and Lead Farmers worked together to measure the harvest and capture the data.

Supporting the Cassava Value Chain

In order to reach 12,000 individual farmers with improved production technologies and extension messages on good agricultural practices in FY14, FED decided that due to limited resources, an efficient and innovative approach was needed. FED unveiled its new strategy in Q1 and resolved to focus project interventions on individual farmers instead of group demonstrations particularly on cassava and upland rice crops. In the period, FED cassava and extension team visited Grand Bassa, Nimba and Lofa counties to discuss the new cassava strategy with county managers, extension staff, and selected farmers and group leaders.



Figure 6. M&E officers in Doetainta, Bong County measure 1m by 1m plots for rice yield estimation.

had to find another location.

Discussions with individual farmers brought to light the pre-existing village arrangement known as the *kuu* system. Using this traditional organizational method holds the potential to target thousands of individual farmers with extension messages. The *kuu* is a traditional farming practice in which farmers organize themselves into small groups for the purpose of helping each other perform production related activities like land preparation, planting, weeding and harvesting.

Due to insecure land tenure arrangements, the group farming method is in many cases unsustainable. For example the Welekerma group of Grand Bassa County was supported by FED with cassava cuttings and other inputs in FY13, however the group farm was repossessed and they

Supporting PUA

The vegetable extension training successfully ended in December 2013 with 20 participants consisting mainly of FED lead farmers from selected PUA clusters in Montserrado, Margibi, Grand Bassa and Nimba counties. (Figure 7) The training aimed to improve lead farmer knowledge and skills in improved vegetable farming practices while also acting as a type of training of trainers. Lead farmers are expected to provide assistance and support to other farmers in their farming groups.



Figure 7: PUA workshop participants demonstrating elevated nursery in Montserrado County.

Agriculture Radio Program

FED nearly completed collection of the rural agriculture radio programs produced by FED radio journalist partners in FY13. In January 2014, FED will review each of the 30 minute radio programs to choose four winners. The

top four journalists will be chosen to partner with FED for the duration of the project, producing agriculture-based radio shows highlighting the four value chains and playing the programs over rural radio stations.

Radio and Video Extension

FED worked on three radio and video programs highlighting the best practices to reduce goat kid mortality, manage mother goats before breeding, and goat nutrition and treatment and prevention of diseases. FED filmed and recorded the programs at the Blaygbah goat site in Grand Bassa County. The programs are in post-production and are expected to be reviewed by FED value chain leads in January 2014.

Component Two: Stimulate Private Sector Growth and Investment

Task 2: Enabling Policy Environment for Private Sector Growth

In October, FED conducted a policy forum with USAID, MoA, EU and UN representatives to inform them on policy issues identified within FED value chains that pose an impediment to an enabling environment for farmers and agribusiness. The following key issues were agreed upon and prioritized:

- Translate into legal language the seed policy for this to become an act.
- Develop implementing guidelines for the Seed Act.
- Translate into legal language the plant protection policy to be passed into an act.
- Assess the national standards laboratory.
- Review the EO #30 and recommend specific clauses in legal language for inclusion or exclusion to EO#30. Review other investment incentive (taxation and customs) issues, and recommend concrete demands in legal language for advocacy.

To begin addressing these issues, FED hired a policy consultant to review policy incentives related to agriculture and agri-businesses—specifically agro-input suppliers—and the impact of the Executive Order #30. The consultant’s objective was to review the history of the executive order and make recommendations on ways to incentivize the agriculture and agri-business sectors.

After analyzing the reasons for the adoption of the policy incentives and exploring the cost/benefit to the government, FED hosted a Policy Dialogue Platform with the major stakeholders to discuss the findings of the consultant. The forum aimed to dialogue with government officials about the rice import tariff, its effect on the competitiveness of local rice production in Liberia, and the way forward for creating appropriate, equitable incentives for this value chain. A total of 27 high level representatives from the MoCI, MoF, MoA, the National Investment Commission, USAID, FED, the World Food Program, Wienco, and Fabrar Rice attended. Honorable Minister Addy joined the meeting and stated that supporting and marketing of local rice is a key focus for his administration, and that MoCI is in need of guidance from FED on a long-term rice policy strategy.

The representatives all agreed that FED should host more policy dialogue platform meetings. As a follow on, FED will make recommendations to the respective ministries regarding EO#30 for immediate consideration and will work with the ministries to provide analysis for longer term solutions.

Subtask 2.1 Access to Credit and Business Development Services

MoU with IBEX

In the period, FED signed an MoU with USAID funded Investing for Business Expansion (IBEX) program to provide qualifying FED farmers with record keeping and financial training, in-house business development services, and support for packaging applications for financing from local banks. In addition, the two Programs will provide feedback to beneficiaries and lending institutions to improve relations between Liberia's agribusiness and financial sectors.

Microfinance Loans with LEAD

In Q1, Liberia Entrepreneurial & Asset Development (LEAD), a local MFI signed loan agreements totaling \$1,630,000 LD (\$20,375 USD) for seven FED farming groups in Montserrado, Margibi and Nimba Counties (Table 10). FED assisted all seven groups with opening bank accounts with Ecobank and keeping financial records in order to qualify for the loans. The loan terms were set at six months with 16% interest. LEAD required that each farmer be involved with a structured group in order to disburse the loans. Each group is responsible to divide the loans to individual farmers.

LEAD is a recipient of a grant from The United States African Development Foundation (USADF), which is an independent U.S. Federal Government agency established to support African-designed and African-driven solutions that address grassroots economic and social problems in conflict and post-conflict communities. The grant assisted LEAD with improving their technology and operations and expanding their loan pool. In addition, LEAD has also received support from the Central Bank of Liberia's Loan Extension and Accountability Facility (LEAF).

Table 10: LEAD loans disbursed in Q1 FY14

Group Name	# of individual s received loans	Total individual loans	# # group farms	Total group farms loans	Total loans provided by LEAD
United Farmers Association	12	USD 2,884.50	1	USD 240.50	USD 3,125
Welekema	15	USD 486.75	1	USD 1,388.25	USD 1,875
Kukatone	13	USD 1,535.75	1	USD 339.25	USD 1,875
Money in the Bush	22	USD 1,650	1	USD 600	USD 2,250
Kuwikai	14	USD 1,521	1	USD 354	USD 1,875
Menlehkoyee	30	USD 2,753	1	USD 371.87	USD 3,125
Zoedoar	14	USD 6,250	-	-	USD 6,250
Total	120	USD 17,081	6	USD 3,293	USD 20,375

Impact Story: Microfinance Loans Give Women a Chance to Expand their Farms

In 2003, Mary Yea Flomo (Figure 10) decided it was time to leave the 'mat for a mattress' as they often say in Liberia, so she gathered the women from her village of Neemgbein to create a farming group. They formed *Menlehkoyee*, meaning *where are we* in the local language, Manor, and visualized becoming self-reliant and role models for their children.

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The women of Menlehkoyee share a similar past marked by Liberia's 14 year civil war. Many are widows and most are farmers and decided to focus on agriculture. "It's hard to make my farm profitable on my own. I was tired of living in the bush and not having enough. We can't get enough money to expand or start a meaningful business," Mary explains.

In Neemgbein, there are no banks or microfinance institutions. If a farmer wants a bit of capital to increase his farm, there is nowhere to turn, for financial services are inexistent. To fill this gap, the 36 women of Menlehkoyee created a kuu—traditional organizational system for working—and a started a savings fund. Every month, each member donates \$15 USD to the savings fund. The fund allows members to take out small loans at a 20% interest rate, and trusted non-members to borrow at a 25% interest rate.

The women of Menlehkoyee soon became known among the community for providing loans. This service was new not only for group members, but for the entire village. By the end of 2012, the group had a fund worth 179,000 LD or \$2,237.5 USD.

In September 2011, the USAID Food and Enterprise Development (FED) Program for Liberia partnered with Menlehkoyee to improve the group's agriculture and agribusiness skills and knowledge. FED staff worked with the group for two years introducing them to new planting techniques in land preparation, plant spacing, and how to create a crop calendar and a business plan. As a result of the training, the women began keeping records of sales and expenditures and opened a bank account.

In early 2013, the group approach FED for a loan to expand their vegetable farming production. FED introduced the group to the Liberian Entrepreneurial & Asset Development (LEAD) a local microfinance organization that works with small businesses and has a particular interest in farmers. In November 2013, LEAD loaned 250,000 LD to the Menlehkoyee group to be repaid in six months at an interest rate of 16%.

"Contrary to what Liberian banks and lending institutions have often professed, farmers have the highest repayment rate compare to borrowers in other sectors", says Allen Gweh, LEAD's Country Director.

LEAD did a Loan Qualification Assessment, which included understanding the farmers' history of producing and profit making, ability to maintain records, and innovation to market produce outside of their village. LEAD does not require farmers to have collateral to increase their chances for qualifications, and after several site visits, to ensure the group understood the terms and conditions of borrowing, LEAD decided to award the loan. The loan is part of a grant from The United States African Development Foundation (USADF),

"It's about time we as financial institution stop investing only in large companies, and start looking at small businesses that are desperately in need of our help to expand" explains Allen Gweh.



Figure 10: Mary Flomo signs the loan for the group Menlehkyee

Menlehkoyee will use the loan for investing in the members' private farms by expanding acreage and purchasing inputs. With the income earned on the larger farms, members can send their children to school or start a shop in town.

Village Savings and Loan Association (VSLA)

In Q4 of 2013, the FED project hired two business service providers, Liberia Initiative for Development Services (LIDS) and Educare, to roll out pilot VSLA training to 26 farming groups in six counties. All initial VSLA trainings were completed in Q1 and now groups will receive subsequent support throughout FY14.

The FY14 VSLA program includes mentorship for

group leaders, managing conflicts and issues, and record keeping and will be rolled out over the next nine months until the groups make the final payout or disbursement of savings and accrued interest. FED estimates that the 26 groups will generate a total of \$185K in ag-related loans for the farmers at a 15.65% annual return for the savings group over a three year period (Table 11).

Table 11: Below are the 26 VSLA groups' year-to-date achievements as of Q1 FY14.

Total groups	Total active members	Total share purchased value or accumulated savings	Total loans disbursed	Total # of people who received loans	Total interest earned	Total amount remaining in savings fund
26	627	USD 18,516	USD 16,965	443	USD 1,546.75	USD 3,621



Figure 11: The Women of Help Yourself Farming Group of Acquoi Town after a FaaB training.

Farming as a Business

In the period, FED partner Rights and Rice Foundation finished the last round of Farming as a Business (FaaB) training for 806 participants from 31 communities in Grand Bassa County, Margibi and Montserrado counties.

The 3-day business training used modules from the Farming as a Business resource material that cover basic profitability, farming with improved technology, record keeping and profit/loss analysis.

After the training, each group was responsible for delivering short farm business plan for the upcoming farming season. The business plan includes where each group can apply technology, agriculture inputs and labor

that translates to crop yields that go beyond subsistence farming.

Rights and Rice Foundation made a formal presentation detailing the achievements and challenges on the activity deliverables was made to FED representatives on December 13, 2013. Some of the challenges included:

- The issue of a tolerant, enabling and participatory leadership among the groups and the lack of clarity of organizational roles and responsibilities are by far the main challenges that most groups face. Farmers are not properly organized and many of them have no type of action plan for the year.

- During the preparation of the small business development plans the groups had to be continuously informed that the plans should not be based on inputs freely coming from FED or other external sources, rather that the plans should be primarily based on their own income.

FED's partner recommended that prior to FaaB trainings, groups should first go through the Organizational Development Training. Organizational development assist the groups with cohesion and will strengthen the eventual application of the of the FaaB material. A few communities such as Monkray (Grand Bassa) did receive that training prior to FaaB and clearly displayed skills that the other groups lacked.

"The FaaB training broadened my knowledge in budgeting, especially how to manage family consumption and investment when budgeting."

- Joseph Roberts, Mensah Camp District # 2, Grand Bassa county

The groups that have received FaaB training will continue receiving support in FY14 through FED's cluster approach as well as the future Enterprise Service Centers located in each county.

Forbes Billionaire Summit

On October 30, the Ministry of Commerce and Industry hosted the Entrepreneurial Exchange 2013 Business Summit in partnership with Forbes Magazine at Monrovia City Hall. The event hosted social entrepreneurs, impact investors and philanthropist from the US for an exchange with over 400 Liberian entrepreneurs. The forum intended to provide an opportunity for the philanthropists to interact with Liberian businesses and choose those that they are interested to invest in.

Four of the FED supported entrepreneurs that also participated in the Comprehensive African Agriculture Development Program (CAADP) event in FY13 were at the summit to present their business plans to potential investors. In FY13, FED partnered with Building Markets to improve the business acumen of these four businesses. FED still awaits the announcement of the decision of the investors on which businesses to support.

By-Laws and Bank Accounts

FED assisted eight year two FED farming groups from Lofa County with adopting group by-laws for the purpose of opening individual bank accounts. The groups have finished the applications for accounts and the bank is in the process of assigning account numbers. The groups should have bank accounts in January 2014.

Component Three: Build local technical and managerial human resource capability

Task 3.0 Develop Existing Vocational Centers into Centers of Excellence

In the first quarter of the fiscal year, FED completed the renovation of the Nimba County Community College's (NCCC) Career, Internship, Enterprise and Agriculture offices after completing the installation of the college's VSAT satellite system and cabling. Renovations at the Lofa County Community College (LCCC) are expected to begin by the end of January 2014. The Grand Bassa County Community College (GBCCC) is still undergoing the process of needs assessment and renovations will not begin until the end of Q2 or Q3 FY14.

FED conducted a baseline Organizational Capacity Assessment of all Centers of Excellence in seven areas of interest: Governance and Leadership, Administration, Organizational Management, Marketing and Business Development, Finance, Human Resource and Service Delivery. FED also delivered and facilitated the development of a plan of action to strengthen the CoE's capacity to effectively carry out their functions. Some of the major findings from the report include:

- Community colleges have barely enough infrastructural and human capacity to execute the core mandate of teaching. Facilities such as laboratories and practical field sites are yet to be established.
- Libraries are too small for the student body and are often housed in converted classrooms. Only NCCC has a separate library building. None of the schools have computers and Internet for on-line research.
- Textbooks largely consist of old editions, and the staff has no access to vital reference textbooks.
- All three colleges are operating with no detailed strategic plans and this is compromising long-term planning.
- There is a huge funding gap and colleges respond by deferring capital expenditure.
- Student enrollment continues to grow.

The National Diploma Curriculum for Agriculture

The Bureau of Science, Technology, Vocational & Special Education of the Ministry of Education and FED disseminated the National Diploma Curriculum for Agriculture to four multilateral high schools in Voinjama, Harbel, Zwedru and Monrovia and the three Community Colleges, NCCC, LCCC and GBCCC for pilot testing in the current semester. At the end of the first academic year in mid-2014, FED and partners will examine the success and lessons learned from the new curriculum.

FED delivered 87 agriculture and agribusiness related textbooks to the Ministry of Education, completing the textbook delivery activity that began in FY13. Partnering organizations are equipped with textbooks to begin piloting the National Diploma Curriculum for Agriculture.

FED conducted an assessment of the Kakata Rural Teachers training Institute (KRTTI) Agricultural Program to potentially support them with their agriculture program at the technical learning center. FED carried out interviews with the management and key staff at KRTTI and asked the institution to provide a concept paper and budget on creating demonstration plots for lowland rice, cassava and vegetable crop production.

FED conducted a survey with Renewable Energy Education expert, Dr. Alma Cota, Deputy Chief of Party of USAID-funded LESSP, to discuss the possibility of collaboration for the provision of alternative source of power with current Centers of Excellence.

Louisiana State University Capacity Building

FED has signed a MoU with the Louisiana State University (LSU) to support two students with degrees in Agriculture for post graduate studies in soils and horticulture. The activity is in line with FED's mandate to build human managerial and technical capacity to support agriculture development. One student, Woiklee Payee will leave in Q2 to pursue a Master's degree in Soils Science at LSU. He will return after one year to carry out his research work to address issues in soils identified by FED.

Information Resources

FED distributed five Ti-B4 plus calculators and two copies of Mathematical Applications in Agriculture to the Bureau of Science, Technical, Vocational and Special Education (BSTVSE) of the MOE as resource training equipment, and textbooks for agriculture and business.

FED provided one desktop computer (Dell Optiplex 390), one laptop (HP EliteBook 4540), one HP color laser jet printer (CP2025DN) and one Optima projector (DS330 DLP projection display) to the BSTVSE of MOE to build the capacity of their office.

FED conducted a needs assessment to determine the information resources needed at the Lofa County Community College that covered library resources such as a satellite internet system, computers, printers, LCD projectors and photocopier machine.

FED STTA Vocational Educational Specialist met with the BWI team. As a result of the meeting, BWI will create an internet cafe to help pay for the internet service at the institution.

General Agriculture Program Updates

In November, FED developed and signed the MoU to create a Soil Analytical and Teaching Lab for NCCC, GBCC and BWI. In addition, FED completed facility verification at all sites and work on the specification of laboratory equipment to be procured in the US has begun.

In the period, FED trainers facilitated a drip irrigation workshop to strengthen irrigation principles and practical application in vegetable gardening for BWI agriculture students at FED's Margibi office. FED agriculture experts demonstrated a 0.5 acre garden drip irrigation kit and a garden bucket kit to 10 (3 females & 7 males) students from BWI.

The workshop covered drip irrigation technology in depth as well as organic gardening, backyard gardening, crop management, and soil management fertilizer analysis (NPK). The presentation concluded with a video demonstrating the pressurized 0.25 acre drip irrigation kit, displaying usage and maintenance.

During the training, FED's Vocational Agriculture Education Officer also presented on best practices in vegetable production including planning for production, site selection, land preparation, nursery management and transplanting. The site demonstration is part of the Student Farm Field demonstrations at the COEs.

The workshop improved the participants' knowledge of selecting suitable soil for growing specific vegetables; raising vegetable seedlings for planting; best practices of land preparation and planting; common pest and disease control; the nutritional value of vegetables; and the usefulness of drip irrigation systems for vegetable gardening.

FED plans to use drip kits for vegetable farming at the CoE demonstration sites in Q2 FY14.

NCCC Demonstration Plot

Agriculture students continue to take care of the CoE demo plots covering 2.5 hectares of rice and 3.5 hectares of cassava. In addition, the students cared for 958 peneria oil palm seedlings and 1,500 Sumari oil palm seedlings in the period, which will be transplanted in Q2 and Q3 of FY14.

Rice and Fish Pond Project in Nimba Country Community College

- Completed foundation for dike dam (barrage pond).
- Completed construction of small monk (sluice) in the nursery pond.
- Installed drainage pipes in pond #2.
- The fish in the nursery pond are ready to be transferred but 5 pieces of 1x12 planks are required to block water from entering the pond until the fish are captured for transfer; NCCC is supposed to provide the planks.
- Construction of the large monk, main and overflow canals are being constructed.
- Rice has been transplanted in pond #1.

The NCCC has selected a one acre site to carry out a goat project in 2014. In the first quarter, students and volunteers prepared the site by clearing the area and building a fence. In addition, the NCCC students at the demo plots have created a scaffolding nursery for vegetable seedling production with the help from a NCCC agriculture instructor.

BWI Demonstration Plot

By the end of the period, BWI students harvested 1,173 kg of rice from 1.2 hectares of lowland area. While this yield is considered very low, 349 students (262 male, 87 female) were able to learn practical skills in construction of water management infrastructures such as dykes, bunds, canals, and other recommended practices in lowland rice cultivation. The reasons for the very low yield are: 1) the delay in the commencement of activities resulted in non-ideal timing, i.e., heavy rains washed away newly transplanted seedlings twice, and fertilizers were also washed away, and 2) bird infestation. The harvest is currently stored at BWI and will be sold to fund inputs and activities of the next cropping season, which will be started earlier to ensure proper timing, i.e., seedlings should be transplanted way before the anticipated time of heavy rains.

BWI used skills and knowledge gained through FED compost training to begin another batch of composting in the period. In FY13, FED gave the agriculture department the training and package bags among other resources to engage composting for the demonstration plots as well as for marketing purpose. The compost is expected to be ready for sale in Q2 FY14 and BWI expects a profit of at least \$76,725.00 LD.

A total of 54 BWI agriculture students (40 males and 14 females) who participated in the demonstration plot have established a club called Future Farmers Association of BWI. The club's main objective will be to make a positive difference in the lives of agriculture students by developing their potential for premier leadership, personal growth and career success through agriculture education.

Subtask 3.1 Enterprise Service Centers

In October, June Lavelle and Earnest Musinamwana conducted a market study for business development services in the counties and an organizational assessment of the four FED-supported community colleges to inform an appropriate business model to be used for the Enterprise Service Centers (ESCs) and for the CoEs. The consultants then presented their findings in mid-October to FED staff. Results suggest the use of a privately-run ESC co-located near or at the CoEs as a priority option. The following service options were also suggested: Mobile Training, Market Information and Brokerage Services, Equipment Rental Services, Protected Cultivation, and Shared Kitchen Facilities. Findings from their study have informed the FY14 Workplan.

Component Four: Cross-cutting Activities

Task 4.1 Gender

In the period, FED staff traveled to Lofa County to conduct follow-up interviews with four FED women's groups. Each of the groups shared their successes since their intervention with FED and the way forward for FY14. The four women groups were:

- Foya Rural Women Organization in Foya
- Women for Peace and Development (WOFPD) in Kolahun
- Voinjama District Women Organization for Peace and Development (VODWOPED) in Voinjama
- Kubokeh United Farmers Association in Krugbehmai Town

FED extension agents will follow-up with agriculture training on intercropping and ISFM as well as assistance in forming women only VSLAs.

Celebration of World Food Day 2013 Celebration

The October 2013 World Food Day celebration in Liberia was held under theme: "Sustainable Food Systems for Security and Nutrition." During the celebration, four FED-supported all women farmer groups and four predominantly women groups exhibited products they have grown and produced at the fair. The event proved to be successful as the FED groups gained recognition and sold \$97 USD worth of food and food products at the fair. The remaining food and products were taken to a nearby market and sold to market vendors.

Task 4.2 Youth

FED and partners judged the participating student gardens of the Back-to-School Garden Competition. The program forms part of FED's initiative to invigorate Liberia's youth with agriculture and give them the tools and knowledge to turn farming activities into viable professions. (Figure 12)

The team of judges included one representative from each of the collaborating partners: Advancing Youth Project (AYP), Food Enterprise Development (FED), Ministry of Youth and Sports, Ministry of Agriculture, Farmers Union Network of Liberia (FUN), and Community Youth Network Program (CYNP).

Judging took place over four days between October 16 and 19, 2013. The team used the criteria below for the first round of evaluation. The highest point that could be awarded was 75 points.

- School methods of motivating students in creating interest to participate in the school garden and youth clubs; 5 points.
- The standards used by the school's agro-club in creating their garden based on the TOT training and methods taught including setting up beds and planting vegetable seeds and cassava cottons; 20 points.
- The creativity of agro-clubs activities and maintenance of garden activities during and after school, and the regular attendance of members; 50 points.



Figure 12. Some members from the Little Bassa Public School Garden.

Also in the period, the second joint coordination meeting among FED, MoYS and AYP took place in Bong County followed by a field monitoring visit to youth club gardens to evaluate the level of progress that has been made since the partnership was established in Q4 FY13. At the end of the meeting, the following points were observed:

- There is need to have a refresher training for National Volunteers (NVs);
- Pests control is a serious challenge and should be addressed; and
- There is a need to focus on value addition for the group's crops.

FED will draft a comprehensive work plan for National Volunteers that focuses on the technical activities for planting cassava and vegetables, the main program's main crops, in 2014. FED has also hired extension agents to assist the National Volunteers to implement improved agriculture methods—such as planting seasons—and thus enhance the productivity of youth clubs. The current group of National Volunteers will work with the youth groups until June 2014.

In the period, a four-day Technical Agriculture refresher TOT workshop was held for the 28 National Agriculture Volunteers in Buchanan City, Grand Bassa County. Volunteers shared their individual experiences and the challenges they encountered since they took up assignments in Q4 of FY13. The training also provided basic instruction in cassava and vegetables production and practical demonstrations for participants.

Task 4.3 Nutrition

During the month of October, a total of 14 CAHW goat farmers in Bong and Lofa county, who were being trained under the goat value chain activities, also participated in a nutrition, dietary practices and intake of micronutrient foods (protein, vitamin-A, Iodine and iron rich foods) training. The nutritional training for CAHW in Grand Bassa County commenced in September 2013. Each lecture lasted two hours.

FED collaborated with USAID partner LAUNCH to identify key Essential Nutrition Actions (ENA) messages that will be included in FED's extension materials and radio programs.

Task 4.4. Coordination with Partners

In the period, FED created and strengthened already existing partnerships. FED signed a MoU with another USAID-funded project, IBEX, which will provide record keeping and business training for loan-qualifying farmers who intend to apply for loans from local micro finance institutions and banks.

In addition, FED is partnering with the USAID-funded LAUNCH Program on the development of extension materials on nutrition and Essential Nutrition Action (ENA) training for FED and MoA extension staff. FED also continues to partner with the MoA to strengthen the government's monitoring and evaluation systems.

Task 4.5 Environmental Compliance

All eight sites for the FY14 construction of the post-harvest structures located in Bong, Lofa, Nimba and Grand Bassa County, the CARI livestock quarantine facility (Figure 13) and the FABRAR rice site were visited and certified from an environmental compliance standpoint, and according to USAID's working definition of small-scale construction, fewer than 10,000 square feet. The requirement was certified according to each structure's design and implementation.



Figure 13: The ongoing construction of the livestock quarantine facility at CARI, in Bong county.

The following considerations were made to ensure that direct or indirect impacts were addressed at every site:

- Avoid steeply sloped sites where potential surface run-off and water contamination is likely.
- Assure soil stability to avoid the potential for landslides in the rainy season.
- Confirm that water and sanitary facilities are readily available or if they would they need to be provided.

The USAID Liberia office visited the New Generational Women's Project in Clay Ashland, Montserrado County in the period. The visit's purpose was to assess the level of integration of the Initial Environment Examination (IEE) as set forth and implemented by FED. USAID guests included Dr. Kenneth Hasson, Environmental Officer Shawna Hirsch, and two delegates from the USAID West African Bureau.

FED also conducted a field visit on site compliance at the end of October in Lofa County as part of ongoing monitoring activities of the goat value chain and five water sources constructed in FY13. In order to fulfill IEE conditions, all water access points for the goats must be regarded as potable and therefore fit for human consumption. A total four of five water points evaluated will produce sufficient water capable of sustaining

the demand during peak period (Liberia's dry season) and have fulfilled the requisite as agreed in the EMMP document accompanying the IEE. The fifth well, located in Sandia in Lofa county, is unlikely to provide water during the dry season. FED is now following up with the contractor on the fifth well.

Task 4.6 Monitoring & Evaluation

Improving Data Collection Systems

FED expects to complete the FY14 version of the Performance Management Plan, which was created in March 2013. The changes will reflect the FY14 Workplan including life of project targets and the revision of select indicators. FED expects to complete the revision in January 2014.

Data recording devices (PDAs)

FED purchased an additional 30 PDA devices, bringing the total to 50. Ten devices will be assigned to each of the four major counties and ten devices will be held in Monrovia. FED plans to use these devices for surveys, such as the current rice and vegetable survey, and to also begin using them with the county EO's for data collecting and reporting on activities in the field.

Prepare for EO training

FED increased Extension Officer (EO) staff at the county level to increase the focus on extension of services to beneficiaries across each value chain. Starting February 2014, FED plans to provide orientation and mentoring for new EOs on data collection. In FY14, the EOs will provide field reports and data to the County M&E Coordinators, who will in turn prepare all reports for the main office in Monrovia.



Figure 14: FED and partners at the Fomah Cooperative farm, Bong Mines event attended by US Ambassador to Liberia

effective FED partnership have been for Liberians. A before video was shot for FABRAR rice located in Margibi County after a recent MOU signing with FED.

FED organized an event at the Fuamah Cooperative farm in Bong Mines, Bong County (Figure 14). US Ambassador Deborah Malac, USAID Deputy Mission Director, government dignitaries, the press and FED staff attended the event on November 14, 2013. After the ceremony all guests visited the UDP plots where the ambassador assisted with choosing random plots to carry out the measuring of the harvest. FED staff

Task 4.7 Communications and Knowledge Management

FED published three press releases in the period covering FED's rural radio training, the goat value chain's Community Animal Health Worker training, and the loans given to FED farmers through partner LEAD. Other media stories featuring FED include a full page feature about food security in Liberia, which appeared in several local newspapers, and was written by Samuka Konneh, a freelance journalist that FED supported in FY13.

In order to capture FEDs impact on individual farmers the extension and communications team has begun compiling several before and after videos to relay how

measured the Urea Deep Placement plot against the Urea Broadcast plot. The Chief of Party was interviewed, and the event was featured in two newspapers and on the Liberian National Radio station.

Component Five: Management & Operations

In the quarter, FED management and operations conducted a comprehensive inventory of all the field offices of both Management Development Fund procured items as well as FED assets.

In addition, FED's operations team brought all the warehouses up to standard and trained log administrators to follow Standard Operating Procedures (SOP).

Human Resources Activities

In the period, 100% of FED staff completed the ethics training. In addition, FED modified its performance management plan to better assess outgoing employees including ICA contractors and STTA consultants.